

# Financial Reporting and Analysis CFA一级知识框架图







讲师:何旋 www.pzacademy.com

Summary of Readings and Framework Section M1 Introduction to Financial Statement Analysis Section M2 Analyzing Income Statements M3 Analyzing Balance Sheets M4 Analyzing Statements of Cash Flows I M5 Analyzing Statements of Cash Flows II Section M6 Analysis of Inventories M7 Analysis of Long-Term Assets M8 Topics in Long-Term Liabilities and Equity M9 Analysis of Income Taxes Section M10 Financial Reporting Quality M11 Financial Analysis Techniques M12 Introduction to Financial Statement Modeling

### Module 1

**Introduction to Financial Statement Analysis** 



	<u> </u>	
Financial position	Financial performance	Change in financial position
The balance sheet	The income statement	The cash flow statement

•Net income

Timental Parametri		
The balance sheet	The income statement	The cash flow statement
Assets = liabilities + owner's equity	•Revenue •Expenses	•Operating cash flows •Investing cash flows

•Financing cash flows

### **Financial Statement Analysis Framework**

Phase	Sources of info	Output
1. Articulate the purpose and context of the analysis	<ul><li>Nature</li><li>Needs &amp; concern</li><li>Guidelines</li></ul>	<ul><li>Statement of purposes and objectives</li><li>A list of specific questions</li><li>Timetable &amp; budgeted resources</li></ul>
2. Collect data	<ul><li>Financial data</li><li>Discussion</li><li>Visits</li></ul>	Financial statements and other quantitative data in a usable form     Complete questionnaires
3. Process data	Data from previous phase	<ul><li>Adjusted F/S</li><li>Common – size statements</li><li>Ratios &amp; Forecasts</li></ul>
4. Analyze/interpret the processed data	<ul><li>Input data</li><li>Processed data</li></ul>	Analytical results, forecasts, valuations
5. Conclusions & recommendations	Analytical results	<ul><li>Analytical reports</li><li>Recommendation</li></ul>
6. Follow up	<ul> <li>Periodically Repeating</li> </ul>	Comparison, revised, Updated reports     & Recommendations

#### Regulated sources of information

Regulatory Authorities

US: Securities and Exchange Commission (SEC)

UK: The Financial Service Authority (FSA)

IOSCO: not a regulatory authority but its members regulate financial capital markets

Form 10-K: Annual financial statements.

Form 10-Q: Quarterly financial statements

Form 8-K

· Major events as acquisitions or disposals of corporate assets, . Changes in securities and trading markets, matters related to accountants and

financial statements, corporate governance and management changes, and Regulation FD disclosures.

Form DEF-14A: proxy statement before a shareholder meeting

Forms 3, 4, 5, and 144;

• Forms 3, 4, and 5 are required for any director or officer as well as beneficial owners of greater than 10 percent of equity securities. Form 3 is the initial statement, Form 4 reports changes, and Form 5 is the annual report.

Form 144 is notice of the proposed sale of restricted securities or securities held

by an affiliate of the issuer.

Form 11-K: the annual report of employee stock purchase, savings, and similar plans

Securities and Exchange Commission (SEC) filings

Financial Statement notes Disclose information about the accounting policies, methods, and estimates segment reporting, business acquisitions and disposals, contractual obligations, (Footnotes) & Supplementary schedules financial instruments and risks arising from financial instruments, legal proceedings, related-party transactions and subsequent events Are audited Disclose separate information about any operating segment: the segment constitutes ≥10% of the combined operating segments' revenue,

assets, or profit.

· Provide explanatory information about every (almost) line item

Segment Reporting

· Criteria: the absolute value of the segment's profit or loss as a percentage of the greater of (i) the combined profits of all profitable segments • (ii)the absolute amount of the combined losses of all loss-making segments.

• If, after applying these quantitative criteria, the combined revenue from external customers for all reportable segments combined is less than 75 percent of the total company revenue, the company must identify additional reportable seaments until the 75 percent level is reached.

Management's Discussion and Analysis

· The nature of the business, management's objectives and strategies, the company's significant resources, risks, and relationships, results of operations

(MD&A)★ and critical performance measures.

#### 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★

free from material errors, fraud, or illegal acts if statements make any exceptions to the accounting principles, can issue

qualified opinion and explain the exceptions

Adverse opinion

Unqualified (clean) opinion

Qualified opinion

Disclaimer of opinion

内部因素→Internal control system

If the auditor is unable to express an opinion (e.g., in the case of a scope limitation), a disclaimer of opinion is issued.

if not presented fairly or not materially conforming with accounting standards.

内容

	<ul> <li>Earning calls, presentations and event</li> </ul>
Issuers	<ul> <li>speaking with management, investor</li> </ul>
	<ul> <li>Company website or properties</li> </ul>

or consultancies

Public third-party

Proprietary third-party

Proprietary primary

research

relations, or other company personnel

by the analyst or conducted directly.

its, press releases

• Free industry whitepapers or analyst reports from a consultancy Economic or industry indicators from governments and other organizations

General news outlets, Industry-specific news outlets, social media

Reports and data from sell side or analysts and credit rating agencies, platforms

Surveys, conversations, product comparisons, and other studies commissioned

Other sources of information

### **Module 2**

Understanding The I/S

#### Under US GAAP, unusual or infrequent items are shown as part of a company's continuing operations but are presented separately (e.g., "Special Items").

· presented on a pretax basis

 restructuring charges & Gains and losses arising when a company sells an asset or part of a business IFRS: disclosed separately. (("other operating income (expense)")

be reported separately from continuing operations

• 资产决定处置到实际处置期间产生的income/loss, presented on net of tax Assets and liabilities are aggregated and recognized on the balance sheet as held for sale

几项特殊科目★★

Change in accounting principle

 Retrospective application-Full retrospective method (notes) Prior periods shown in a report as if the newly adopted accounting principle had been used throughout the entire period

Accounting changes

Unusual or

Infrequent Items

Discontinued

Operations

Correction of an error for a prior period

 Modified retrospective method: adjusted opening balances of retained earnings · Significant changes should be disclosed in the notes

Change in accounting estimate (prospective)

 Restate the financial statements Note disclosures are required regarding the error.

#### 几项特殊科目(续)★★

Changes in Scope and Exchange Rates  Changes in Scope: an acquisition can materially affect the comparability of the acquirer's financial results and position from prior periods.

Changes in exchange rates often affect multinational companies' income statements.
 Unfortunately, accounting standards do not require issuers to disclose the effects of either

Unfortunately, accounting standards *do not require issuers to disclose the effects* of either scope or exchange rate changes on the financial statements or in individual items, although most issuers disclose useful summary information in management reporting or elsewhere.

Common – size I/S ★ → item in the I/S/revenue

. Net income

Gross profit

Revenue

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

Gross profit margin =

#### 1. Revenue \*

#### Revenue确认★

- · Recognized when it is earned (the risk and reward of ownership is transferred)
  - Sales on credit → contract asset

     contract asset → accounts receivable: when all performance obligations have been met except for payment
- Receives cash in advance → contract liability

#### Five steps \*\*

1. Identify the contract(s) with a customer

General principles

Accrual accounting

- A contract exists only if collectability is probable.
- 2. Identify the separate or distinct performance obligations in the contract
- 两个条件: if the customer can benefit from it on its own or in combination with readily available resources; (2) if
  the promise to transfer it can be separated from other promises in the contract.
- Each identified performance obligation is accounted for separately
- 3. Determine the transaction price
- · Revenue should only be recognized when it is highly probable that it will not be subsequently reversed.
- 4. Allocate the transaction price to the performance obligations in the contract
- 5. Recognize revenue when (or as) the entity satisfies a performance obligation

Condition Methods

requested the arrangement)

Company-owned stores revenues

Principal & Agent

Franchising

Bill and Hold

Arrangements

/Licensing percent of restaurant sales. Supply chain revenues • Software revenues include revenues associated with term and perpetual software licenses Software as a The software is sold "as is" and revenue is recognized at the time of the license transfer. Service Company also provides a support contract for updates for which revenue is recognized or license over the contract term Long-Term output methods (e.g., appraisals or units completed) or Contracts input methods (e.g., costs incurred relative to estimated total costs). "bill and hold" arrangement: when it has satisfied its performance obligation based on when a customer obtains control of the product.

The product must be *identified separately* as belonging to the customer
 The product currently must be ready for *physical transfer* to the customer

Revenue确认→ Complex contracts★★★

the agent: it records revenue only for its fee or commission.

the principal: revenue is recorded as the total amount of considerations received.

Franchise royalties and fees. Each franchisee is generally required to pay fees equal to 5.5

The reason for the bill and hold arrangement must be substantive (e.g., the customer has

The entity cannot have the ability to use the product or to direct it to another customer

### 2. Expenses

具体存货处理、折旧等后续章节展开

Accrual Accounting (Matching Principle)

Revenue is recognized when earned Expenses are recognized when incurred Expenses the directly related to revenue generation are recognized in the same period as the revenue

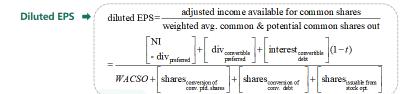
Firms can manipulate Net income by recognizing revenue earlier or delaying the expenses recognition

3. EPS ★★★ 计算

 $NI-div_{preferred\ stock}$ 

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



- Treasury stock method → assumes that the funds received by the company from the exercise of the options would be used to hypothetically purchase shares of the company's common stock in the market at the average market price.
- Dilutive Securities & Antidilutive Securities → stock options, convertible debt, or convertible preferred stock
  - Dilutive Securities: *decrease EPS* if exercised or converted to common stock.
  - Antidilutive Securities: increase EPS if exercised or converted to common stock.

### Module 3

Understanding The B/S

Common – size	B/S ★ → I	tem in the balance s	heet account / 1	total assets

#### Non-current liabilities

#### Non-current liabilities

cost on the balance sheet. At maturity, the amortized cost of the bond (carrying

Long-term financial amount) will be equal to the face value of the bond. liabilities financial liabilities held for trading, derivatives that are a liability to the company, and some non-derivative instruments, such as those which are hedged by derivatives:

Deferred tax liabilities

Liabilities such as loans payable and bonds payable are usually reported at amortized

reported at fair value

Income tax

#### Financial asset \*

US GAAP/IFRS	HTM/Amortized Cost	AFS/FVOCI	TS/FVPL
B/S初始计量	Amortized cost (only debt)	Fair value (US GAAP only debt )	Fair value (equity &debt)
期间收益→interest/dividend	I/S	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 <del>→</del> OCI	I/S

### Module 4, 5

**Understanding The CF/S** 

#### **Types of Cash Flows**

#### **U.S. GAAP**

CF	Inflows	Outflows
CFO	Cash collected from customers Sale proceeds from trading securities Interest received Dividend received	<ul> <li>Cash paid to employees and suppliers</li> <li>Acquisition of trading securities</li> <li>Interest paid</li> <li>Taxes paid</li> <li>Cash paid for other expenses</li> <li>Purchase trading</li> </ul>
CFI	<ul> <li>Sale proceeds from fixed assets</li> <li>Sale proceeds from debt &amp; equity investments</li> <li>Principal received from loans made to others</li> </ul>	<ul> <li>Acquisition of fixed assets</li> <li>Acquisition of debt &amp; equity investments</li> <li>Loans made to others</li> </ul>
CFF	Principal amounts of debt issued     Proceeds from issuing stocks	<ul><li>Principal paid on debt</li><li>Payments to reacquire stock</li><li>Dividends paid to shareholders</li></ul>

IFRS vs US.G/	AAP ***
Items	
Interest receive	ed

Interest paid

Dividends received

Dividends paid

Taxes paid

Disclosure

CFO CFO

CFO CFF

• Encourage direct method, but allows indirect

method

• If direct method presented, footnotes must provide indirect method.

U.S. GAAP

CFO

· IFRS permits more flexibility in reporting

· Encourage direct method, · but permits either method

CEO or CEE CFO, CFI or CFF

**IFRS** 

CFO or CFI

CFO or CFF

CFO or CFI

#### CFO计算 ★★★

ndirect	Method

#### **Direct Method**

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

Cash received from customers	Opening A/R + net sales – Closing A/R+ $\Delta$ unearned revenue =Net sales- $\Delta$ A/R + $\Delta$ unearned revenue
- Cash paid to suppliers	Opening A/P + Purchase – Closing A/P= - COGS - $\Delta$ Inv+ $\Delta$ 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 + Δwage payables

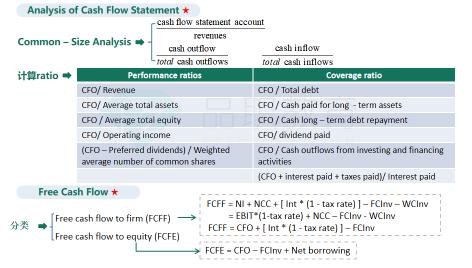
Hom customers	Tevenue = Net Sales-ΔA/N + Δ unearneu revenue
- Cash paid to suppliers	Opening A/P + Purchase – Closing A/P= - COGS - $\Delta$ Inv+ $\Delta$ A/P + Depreciation included in COGS (COGS = Opening Inventory + purchase – Closing Inventory)
- Cash paid to employees	Opening wage payables + wage expense – Closing wage payables =-wage expense + Δwage payables
- Interests paid	Opening interest payables + interest expense – Closing interest payables=- interest expense + ΔInterest payables
- Tax paid	Opening tax payables + income tax expense – Closing tax payables = - income tax expense + Δtax payables
= CFO	

### CFI计算 ★★

Cash used in purchase of fixed assets	<ul> <li>Pay attention to the movement of fixed assets.</li> <li>Book Value = Carrying value = Purchase cost – AD – Impairment</li> <li>BV <sub>end</sub> = BV <sub>Begin</sub> + Purchase – Disposal NBV – Depreciation</li> </ul>
Proceeds received from sale of fixed assets	Gain or loss = proceeds received – disposal NBV Gain or loss resulting from disposal of PP&E or other long term assets are NOT presented in the CFI, but in gain or loss.

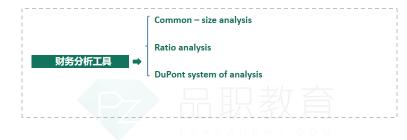
#### CFF计算 ★★

Review long-term debt and stock	Increases supply cash and decreases use cash.
Dividend paid	<ul> <li>-Dividend paid = - Dividend declared + Δ dividend payables</li> <li>Opening R/E + Net Income – Dividend declared = Ending R/E</li> </ul>



### **Module 11**

**Financial Analysis Techniques** 



#### Common – size Analysis

Common – size I/S	Common – size B/S	Common – size CF/S
Income Statement Account Revenues	Balance Sheet Account Total Assets	Cash Flow Statement Account Revenues
		Cash Outflow Total Cash Outflows  Cash Inflow Total Cash Inflows

### Ratios and 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
Days of inventory on hand (DOH) = 365 / inventory turnover	Days of sales outstanding (DSO) = 365 / receivables turnover	Number of days of payables = 365 / payables turnover
	Operating cycle = DOH + DSO	
Cash conversion cycle - D	OH + DSO - Number of days of payables -	A 和属手liquidity ratio

## Cash conversion cycle = DOH + DSO - Number of days of payables → 世典 Hiquidity 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	[cash + marketable securities + receivable] / Current liabilities = [current asset - inventories] / Current liabilities
Cash ratio	[cash + marketable securities] / Current liabilities
Defensive interval	(cash + marketable securities + receivables) / average daily expenditures
Cash conversion cycle	Days of sales outstanding + days of inventory on hand – number of days of payable
3 Solvency Ratios: 4	A firm's ability to pay long—term debt

3. Solvency Ratios: A firm's ability to pay long-term debt		
	Debt-to-equity ratio	D/E O A D E M Y O O M
Loverage	Debt-to-capital	D/(D+ E)
Leverage	Debt-to-assets	D/A
	Financial leverage	A/E
Coverage	Interest coverage	EBIT / Interest
Coverage	Fixed charge coverage	(EBIT + <u>lease payments</u> ) / (Interest + <u>lease payments</u> )

#### 4. Profitability Ratios: A firm's ability to generate profits

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

#### ROF来源分析→DuPont analysis

### **Module 6**

Inventories



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

Economic Environment	Account	FIFO	LIFO
Inflation	Ending Inventory	Higher	Lower
IIIIIduuii	COGS	Lower	Higher
Deflation	Ending Inventory	Lower	Higher
Deliation	COGS	Higher	Lower

Financial Impacts 🛨 🛧	掌握影响→前提★:物价上涨&存货上	升
	LIFO	FIFO→与LIFO反过来
	Higher COGS	Lower COGS
ı/c	Lower EBIT	Higher EBIT
I/S	Lower taxes	Higher taxes
	Lower net income(EAT)	Higher net income (EAT)
D/C	Lower inventory balances	Higher inventory balances
B/S		

1/s		Tilgher COO3	Lower Cods
		Lower EBIT	Higher EBIT
		Lower taxes	Higher taxes
		Lower net income(EAT)	Higher net income (EAT)
B/S		Lower inventory balances	Higher inventory balances
		Lower working capital	Higher working capital
Cl	FS	Higher CFO(↓ taxes paid )	○ Lower CFO(个 taxes paid )
	Profitability	Lower net and gross margins	Higher net and gross margins
Financial Ratio	Liquidity	Lower current ratio	Higher current ratio
	Activity	Higher inventory turnover	Lower inventory turnover
	Solvency	D/A and D/E higher	D/A and D/E lower

#### Inventory Adjustments \*



承待尽响→

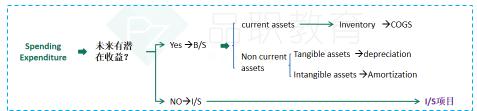
「「「「「」」 「「」 「「」 「「」 「「」 「「」 「」 「「」 「」 「」		
方向	影响	原因
negative effect	profitability, liquidity, and solvency ratios	inv↓; NI↓
positive effect	inventory turnover and total asset turnover	denominator

### **Module 7**

**Long-Lived Assets** 

### Capitalize or Expense 框架

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



区别

# ■ 对财务指标影响 ★★

F/S	Items	Capitalizing	Expensing
B/S	Total assets	Higher	•
&	Shareholders' equity	Higher <mark>→NI高&amp;A高</mark>	
ratios	Leverage ratios (debt/equity & debt/assets)	Lower <b>→E</b> 高	
	Income volatility	Lower→平摊到之后每年	Reverse
I/S &	Net income – first year ( ROA & ROE )	Higher <del>)一次</del> 費用少	
ratios	Net income – later years ( ROA & ROE )	Lower→逐年折旧费用高	
	Interest coverage (subsequent years)	Lower <b>→EBIT小</b>	
	Total cash flow	Same	Same
CFS	Cash flow from operating	Higher→支出计入CFI	D
	Cash flow from investing	Lower	Reverse

apitalizing Interest ★★ 专指在建工程的贷款利息资本的	化
--	---

Items	First Year	Later Year
Interest expense	Interest expense No interest	
Net Income	<b>↑</b>	<b>\</b>
CFO	Overstate	
CFI	Understate	
Income statement impact	No impact	建好后持有→Depreciation个 建好后出售→COGS个
Interest coverage ★	计算角度: 个 概念角度: No impact <del>&gt;</del> 分析师认为利息支出应 是CFO,undo分类后与费用化相同	0 M 🔱

Note: 这里大小是与费用化利息比较 Implications for analysis

- · Treat as normal interest
- I.e. interest expense charged to I/S directly, and classified as part of CFO

Note: Under IFRS, but not under US GAAP, income earned on temporarily investing the borrowed monies decreases the amount of borrowing costs eligible for capitalization

# Tangible assets

# 1. Depreciation Analysis: Average Age

资产已用年份 → Average age= accumulated depreciation annual depreciation expense
 - 资产剩余年份 → Remaining useful life = ending net investment annual depreciation expense
 - 资产总年份 → Average depreciable life = ending gross investment annual depreciation expense

# 2. Impairment ★★

准则

IFRS	减值判断→一步法  •carrying (book) value > recoverable amount →永续经营vs 清算假设  •carrying (book) value = original cost - accumulated depreciation  •recoverable amount = max (fair value less any selling costs, value in use), Value in use = DCF value 减值处理: Asset(BV) is written-down recoverable amount 减值reverse: loss can be reversed (最多回到减值前BV)		
US.GAAP	减值判断→二步法 •Recoverability: carrying (book) value > the asset's future undiscounted cash flow stream •Loss measurement: loss = carrying value - fair value of the asset (or DCF Value) 诚俏reverse: loss recoveries are prohibited →例外: long-lived assets held for sale		
	减值对财务指标影响★		
	Impairment Effects		

区别

Impairment Effects		Impairment Effects	
Cash Flow	No effect	Assets Decrease	
DTL	Decrease	Stockholder's Equity Decrease	
DTA	Increase	Depreciation Expense Decrease	
Current Net Income, ROA,ROE	Decrease	Future Asset Turnover Ratios Increase	
Future Net Income, ROA,ROE	Increase	Debt/Equity ratio Increase	

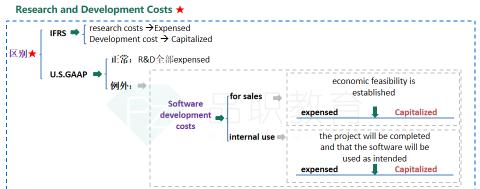
Intangible assets		
Identifiable IA	Unidentifiable IA	Internally generated
Can be purchased separately E.g. Patents, Trademarks, Copyright purchased externally Some have a finite useful life and others have an indefinite useful life	Cannot be purchased separately and may have an indefinite life     E.g. Goodwill	Cannot be capitalized on B/S     E.g. Research and Development cost     Under U.S. GAAP

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

Capitalized on the B/S



# **Module 8**

**Topics in Long-Term Liabilities and Equity** 

### Lease

### 1) Lease identification

- specific underlying asset
- the right to obtain largely all of the economic benefits
- the ability to direct how and for what objective the underlying asset is used
- 2) Motivations for leasing asset (compared to purchasing it)
  - For lessee: ①less cash is needed up front. ②Cost effectiveness. ③Convenience and lower risks (obsolescence).
  - For Lessor : a form of investment and an effective selling strategy

if any of t	:he following criteria are met 🖈 🖈 🤊
① Transfe	rs ownership
② The les	see has an option to purchase the
underl	ying asset and is reasonably certain
it will d	lo so.

3) A lessee classifies a lease as a finance lease

	and is reasonably conta
	it will do so.
3	The lease <b>term</b> is for a <b>major part</b> of the

The lease term is for a major part of the
asset's useful life
④ PV of Lease payments ≥ substantially all of

the fair value of the asset

⑤ The underlying asset has no alternative us	se
and the state of t	

准则	A D E MLessee C O M	lessor
IFRS	只有一种会计处理 (本质是Finance lease)	Operating/Finance
US.GAAP	<ul> <li>If any of the criteria are met→finance lease</li> <li>Otherwise→operating lease</li> </ul>	(substantially identical under IFRS and US GAAP)

### Lessee:会计计量★★★

Lessee	Balance Sheet (at inception)	Balance Sheet (after inception)	Income Statement	Statement of Cash Flows
IFRS leases & US GAAP finance leases	'ROU' asset &	lease liability net of principal repayments     ROU asset net of accumulated amortization	Amortization expense on ROU asset at straight-line basis     Interest expense on lease liability (interest portion of payment)	Principal portion:     CFF流出 Interest portion:     IFRS: CFO/CFF流出     US GAAP: CFO流出
US GAAP operating leases	lease liability (=PV(future lease payment))	lease liability net of principal repayments     ROU asset net of accumulated amortization	Single lease expense (payment=interest + amortization)     ROU asset amortization expense = the principal repayment = lease payment = interest expense	CFO 流出

Lease accounting exemptions: Short-term leases and leases where leased asset is low value, under IFRS



Lessor	Balance Sheet (at inception)	Balance Sheet (after inception)	Income Statement	Statement of Cash Flows
IFRS & US GAAP operating leases	Not affected	Leased asset at cost net of accumulated depreciation.	Lease revenue     (straight-line basis)     Depreciation expense	
IFRS & US GAAP financing leases	Lease receivable net of principal proceeds (=PV of future lease payments)     De-recognizes the leased asset	The lease receivable is subsequently reduced by each lease payment using the effective interest method.	recognizing any difference as a <i>gain</i> or loss (at inception). Interest income (revenue, if leasing is a primary business activity for the entity)	• The entire cash receipt: CFO流入

### Pension

	DC	DB
Amount of benefit	Not determined; Depends on future value of plan assets	Pre-determined
Investment risk	Born by employee	Born by employer
Employer's obligation	make periodic contributions	Make pre-determined payment to retiree

	IFRS & U.S.GAAP		
B/S	\$	I/S	\$
PV of obligation	P(X) A ○	$A \cap E$ Interest cost $O$ $M$	(X)
FV of plan asset	<u>X</u>	Current service cost	(X)
Overfunding/(Underfunding)	X/(X)	Expected return	Χ
		Actuarial gain / (Loss)	<u>X/(X)</u>
		Total	X/(X)

Funded status= Fair value of the plan assets - PV of the Defined benefit obligation, 计入公司B/S

# Share-based Compensation ★★★



Call option

Recognize the compensation expense over

the **service period** based on: Fair value of

the stock option at the arant date

Increase of Input



优点

缺点

· require no cash outlay

dilutes existing shareholders

does not necessarily provide the desired incentives

may lead managers to excessive risk taking.

The first date the employee can actually exercise the option

the recognition of option expense has no net impact on total equity.

in capital.

aligning the interests of employees with shareholders

The impact of financial reporting: reduce retained earnings, but the

offsetting entry is an increase in paid-

Estimated fair value of option grants

Volatility Estimated life

Grant date

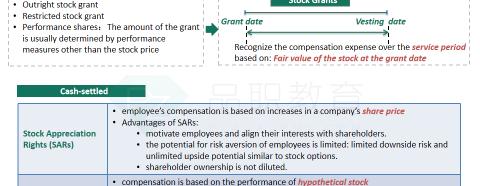
Risk-free interest rate

Assumed dividend yield

Vestina date

Increase

Decrease



of a company or by highly illiquid companies

phantom shares can be used by private companies or non-public traded business units

**Phantom Shares** 

**Stock Grants** 

# **Module 9**

**Income Taxes** 

# **Terminology for taxation**

Tax reporting	Financia	al reporting
Taxable income =Taxable revenues - Tax deductible expenses	Pretax income (Accounting p = Earning before tax (EBT)	profit)
Taxes payable =Taxable income * tax rate =Current tax expense	Income tax expense =Current tax expense +/ - Deferred tax expense or income	
Income tax paid =Actual cash flow paid for income tax =Cash outflow for tax in CFS		
	Deferred tax Expense /(income)	Relating to two B/S items Deferred tax liability (DTL) Or Deferred tax asset (DTA)
Tax base: Net amount of an asset or liability used for tax reporting purposes.	Carrying value: Net balance liability.	sheet value of an asset or
Tax loss carry forward: A current or past loss that can be used to reduce taxable income in the future.  → Can result in a deferred tax asset.		
	Valuation allowance: Reduce based on the likelihood the	and the second s

# Temporary difference→将来回转。只有这种才有递延所得税

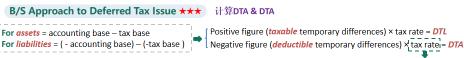
Deferred tax assets	Deferred tax liabilities	
B/S amounts that result from an excess of tax payable over income tax expense that are expected to be recovered from future operations.	<b>B/S</b> amounts that result from an excess of income tax expense over taxes payable that are expected to result in future cash outflows.	
Taxes payable > income tax expense	Taxes payable < income tax expense	

### Reversal of temporary difference

	Unlikely to be reversed	Equity
DTL	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

Valuation allowance:

If the company continues to generate profits in the future  $\rightarrow$  The allowance  $\downarrow$ 



Tax rate applicable to the periods in which the DTA and DTL will be reversed (forecast). If statutory tax rates change, the recorded value of a deferred tax asset or deferred tax liability would also change.

Income tax expense = Current tax expense (income tax payable) +/ Li Deferred tax expense / income

Taxable income X!Current tax rate

be created only if the company expects to be able to realize the economic benefit of DTA in the future If DTA was recognized previously, but there was sufficient doubt about the economic benefits being

 $\triangle$ DTL or  $\triangle$ DTA

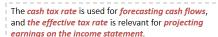
# Realizability of DTA and DTL

- DTA
- realized, then. under IFRS, an existing deferred tax asset would be reversed.
- If unlikely to be reversed  $\rightarrow$  Treated as equity DTL If to be reversed > Treated as true liability If the timing and amount of tax payments are uncertain → neither liability nor equity
- Under US GAAP, a valuation allowance would be established

# **Corporate Income Tax Rates**

### Three types of tax rate

- The statutory tax rate: the corporate income tax rate in the country in which the company is domiciled.
- Effective tax rate =  $\frac{\text{Income tax expense}}{\text{Pre-tax income (EBT)}}$
- Cash tax rate =  $\frac{\text{tax paid in cash}}{\text{Pre-tax income (EBT)}}$



### 形成差异原因

- Differences between the statutory tax rate and the effective tax rate results from:
  - Tax credits, withholding tax on dividends, adjustments to previous years, and expenses not deductible for tax purposes.
  - If a company reports a high profit in a country with a high tax rate and a low profit in a country with a low tax rate, the effective tax rate will be the weighted average of the rates, and higher than the simple average tax rate
- Differences between cash taxes and reported taxes result from:
  - differences between financial accounting standards and tax laws and result from changes in deferred tax assets or deferred tax liabilities.

# **Module 10**

**Financial Reporting Quality** 



# **Conceptual Overview**

# 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.

# Quality Spectrum of Financial Reports

Quality Spectrum Of Financial Reports	Quality
GAAP, decision-useful, sustainable, and adequate returns	HIGH
GAAP, decision-useful, not sustainable, Low "earnings quality"	
Within GAAP, but biased choices (Aggressive, conservative and earning smoothing)	
Within GAAP, but "earnings management" (Real EM, Accounting EM)	1
Non-compliant Accounting	1011
Fictitious transactions	LOW

## Aggressive and Conservative Accounting

# Conservative Accounting decrease the performance and financial position in the current period and may increase its reported performance and financial position in

later periods
Potential benefits:

- nrotest the ser
- protect the contracting parties with less information and greater risk
- reduces the possibility of litigation
   protect the interests of regulators and politicians by reducing the
- possibility that fault
  reduce the present value of their tax payments

 increase the company's reported performance and financial position in the current period, but decrease the performance and position in later years.

Aggressive accounting

Creates a sustainability issue

# **Context for Assessing Financial Reporting Quality**

# Motivation for manipulation

- Managers frequently have incentives to meet or beat market expectations.
- Career concerns and incentive compensation may motivate accounting choices
- Avoiding debt covenant violations can motivate managers to inflate earnings
   Fraud Triangle
- Opportunity can be the result of internal conditions
- Motivation can result from pressure to meet some criteria for personal reasons
- Rationalization

# **Detection of Financial Reporting Quality Issues**

### Presentation Choices

# The technology boom and the internet bubble shared the same characteristic

- Can not use the traditional price-to-earnings ratio (P/E) approaches to valuation.
- Various versions of "pro forma earnings"—that is, "non-GAAP earnings measures
  - If a company uses a non-GAAP financial measure in an SEC filing, it must display the most directly
    comparable GAAP measure with equal prominence and provide a reconciliation of the non-GAAP measure
    and the equivalent GAAP measure
    - The SEC prohibits the exclusion of charges or liabilities requiring cash settlement from any non-GAAP liquidity measures, other than EBIT and EBITDA
- excluding restructuring charges in pro forma measures of financial performance
   Adiusted EBITDA

# Accounting Choices and Estimates

Accounting choices and Estimates				
Affect earnings and balance sheet	Affect the cash flow statement			
The change in shipping terms for goods	Stretching the accounts payable credit period: Delay			
The choice of inventory assumptions	payments			
Estimate of uncollectible account	Misclassify operating uses of cash into either the			
DTA and estimate of valuation allowance	investing or financing section			
Selecting a depreciation method	· Interest capitalization: offset the entire non-cash			
Expense or capitalization	discount amortization as expense → lower CFO			
Estimate of fair value for assets acquired	<ul> <li>Securitizing Accounts receivable: Sale Δ/R → CEO↑</li> </ul>			

# **Accounting warning signs**

### Pay attention to revenue

Examine asset turnover

- Examine policies, easier to prematurely recognize revenue, barter transactions, estimates about rebate
- Examine Revenue relationship. Increase in DSO or decrease in receivables turnover could suggest that some revenues are recorded prematurely or are even fictitious

# Pay attention to signals from inventories

Declining inventory turnover could suggest obsolescence should be recognized.

Pay attention to capitalization policies and deferred costs

Examine the company's accounting policy note for its capitalization policy.

Pay attention to the relationship of cash flow and net income

If the ratio is consistently below 1.0 or has declined repeatedly, there may be problems in the company's accrual accounts.

# Module 12

**Introduction to Financial Statement Modeling** 



# **Building A Financial Statement Model**

# **Income Statement Modeling**

Item		考试中常见预测方法
Revenue		<ul> <li>Change in revenue is driven by volume, price, and foreign currency estimates</li> <li>Changes in revenue <u>attributable to volume or price/mix</u> are <u>organic growth</u> and are shown <u>separately from</u> the impact of <u>acquisitions and divestitures</u> and foreign exchange.</li> </ul>
Operating expense	cogs	1. Direct link with sales: as a percentage of sales (based on gross margin)  • Forecast COGS=(1-Gross Margin) × Estimate future revenue  2. A breakdown of both costs and sales into volume and price components  • %ΔCOGS=(1+%Δcost)(1+%Δvolume)-1
	SG&A and Other operating expenses	Distribution costs & Administrative costs: Estimate modest increases as a percentage of revenue.     Other operating expenses: Forecast zero for this line in the model.

### Using Segment Approach

A segment approach like can be used instead of a consolidated approach to forecasting revenue and operating
profit, it is also commonly used as a "check" on the consolidated forecasts.

# **Income Statement Modeling**

Item		考试中常见预测方法
Non-	finance expenses	<ul> <li>基本考试会直接给出利率,需要会算债务规模</li> <li>Net finance cost= interest expense on debt - interest income earned on cash and investments.</li> <li>interest expense on debt = debt*interest rate</li> <li>interest income = forecasted cash and investments * forecasted interest rate</li> </ul>
Operating Items	income taxes	• 基本考试会直接给出税率:statutory rate & effective tax rate
	shares outstanding	<ul> <li>Major Factors Affecting Shares Outstanding: Share issuance, Share repurchases,         Other Significant Transactions</li> <li>Shares outstanding to compute earnings per share (EPS) on the income statement</li> </ul>

# **Cash Flow Statement Modeling**

Item	考试中常见预测方法
Capital Investments & Depreciation Forecasts	<ul><li>假设capex/revenue的比例</li><li>假设dep/PPE、amortization/intangible asset的比例</li></ul>
Working Capital Forecasts	forecasting based on <i>efficiency ratios</i> • Projected AR=(days sales outstanding) × (forecasted revenues/365)  • Projected Inventory= (days inventory on hand) × (forecasted COGS/365)  • Projected AP=(number of days of payables) × (forecasted COGS/365)
share-based compensation, dividends, and share repurchases.	一般assume flat share-based compensation, no share repurchases or issuance, and dividend paid equal to the prior year
	P. Leave Charles at P. C.

# **Balance Sheet Modeling**

 The forecasted balance sheet is based on the combination of the projected income statement, the projected statement of cash flows, and the historical starting balance sheet.

# Ratio Analysis ★★

Ratio	Formula	Advantages
ROE (return on Equity)	• NI Shareholder's equity	the <i>most common</i> measure of <i>shareholder</i> 's return
ROIC (return on invested capital)	EBIT(1-T) Total invested capital  EBIT(1-T)=NOPLAT=net operating profit less adjusted taxes  TIC=operating assets-operating liabilities	ROIC measures the profitability of the capital invested by the company's shareholders and debt holders Better measure of profitability than ROE because it is not affected by financial leverage
ROCE (Return on capital employed)	EBIT  Total capital employed  ROCE is essentially ROIC before tax  TCE= debt and equity capital	As a pretax measure, ROCE can be useful in comparisons of companies in countries with different tax structures

# Other Considerations

Behav	ioral	Finance
	Item	

100111	Deminion/ common forms	Tritigating Actions
Overconfidence bias	Definition: unwarranted faith in their own abilities     Common forms: narrow confidence interval	widen the confidence interval of forecasts (scenario analysis)
Illusion of control	<ul> <li>Definition: overestimate the ability to control what cannot be controlled.</li> <li>Common forms: acquire more opinions from experts and create more complex models.</li> </ul>	focus on the most important variables     speak only with those who have significant perspectives.
Conservatism bias	Definition: maintain their prior views by inadequately incorporating new information     Common forms: anchoring and adjustment	<ul> <li>review regularly</li> <li>creating flexible models with fewer variables</li> </ul>
Representativeness bias	<ul> <li>Definition: classify information based on past experiences and known classifications.</li> <li>Common forms: Base-rate Neglect</li> </ul>	<ul> <li>Consider both outside view and inside view</li> <li>starting with the base rate</li> </ul>
Confirmation bias	Definition: look for what confirms prior beliefs and undervalue whatever contradicts them.     Common forms: conduct only cursory research on	<ul> <li>speak to analysts with a negative opinion</li> <li>seek perspectives from colleagues</li> </ul>

Mitigating Actions

who are not invested in the subject

security.

**Definition/Common forms** 

its competitors, or speak only to company's

management

Force	High Degree(Limited Pricing power/Downward pressure on profit
Threat of substitutes	Numerous substitutes exist and Swite

Impact of Competitive Factors \*\*

ward pressure on profit<u>ability)</u> Numerous substitutes exist and Switching costs are low

Industries are fragmented and have limited growth, high exit barriers, high fixed costs, and basically identical product offerings

Bargaining power of suppliers

Intensity of rivalry

among incumbent

products

companies

buyers

entrants

Note: Suppliers' bargaining power is generally a function of relative size, the relative importance the supplier places on a particular product, and the availability of alternatives.

of inputs.

Bargaining power of

Customers have greater ability to demand lower prices and/or control the quality and quantity of end products

Suppliers have greater ability to increase

prices and/or limit the quality and quantity

Note: Buyer power is the reverse of supplier power

suppliers .

hiah.

costs for the customer.

dominates the market

Markets with a fragmented customer base, a non-standardized product, and high switching

Low Degree(Greater pricing power/a favorable

profitability profile)

Few substitutes exist and/or switching costs are

The primary inputs are basically commodities.

The market is *consolidated*, the company

There are large number of independent

Barriers to entry are high. It could be costly for new competitors to enter a market.

Threat of new Barriers to entry are low.

预	测项目	具体方法
Sales Projections	Industry Sales	Higher ability to pass on higher input costs:  • The market is consolidated, the company dominates the market  • demand is relatively price inelastic, a fragmented customer base  • Low availability of substitutes
	Company Sales	• understanding of the <i>price elasticity of the product <del>- inelastic: benefit from inflation.</del></i>

Inflation and deflation

Sales		Low availability of substitutes
Projections	Company Sales	<ul> <li>understanding of the price elasticity of the product →inelastic: benefit from inflation.</li> <li>Identifying a company's major input costs → 预测公司会不会提价</li> <li>considering company strategy</li> </ul>
Cost Projections	Industry Costs	<ul> <li>Long-term price-fixed forward contracts and hedges →降低价格上升的影响</li> <li>If competition makes it difficult to increase prices, the company will look for alternatives to keep margin stable, such as reducing A&amp;P spending</li> </ul>
	Company Costs	Segmenting the cost structure by category and geography

# The Forecast Horizon and Long-term Forecasting

Choice of the forecast time horizon (为了得到**normalized earning**)

Investment strategy → average holding period = 1/average annual turnover Cyclicality of the industry → reach an expected mid-cycle level or "normalized" Various company specific factors → 例如近期并购或重组活动 Emplover's preferences

## **Long-term Projections**

- Provide a better representation of the normalized earnings potential of a company than a short-term forecast.
  - Normalized Earnings and Cash Flow(expected mid-cycle level) → by extending the forecast period
  - Estimating Normalized Revenue
     Calculating Trend Line
    - "growth relative to GDP growth" and "market growth and market share" methods

### Challenges: Anticipating inflection points

· Regulation and technology

- using a boom year as the starting point for the perpetuity could result in a grossly overstated valuation.
  - Economic disruption: such as the 2008 global financial crisis or COVID-19 pandemic.
- Long-term growth is a key input in the perpetuity calculation.

