1. Unqualified (clean) opinion 无保留意见：statements are free from material omissions and errors;

Qualified opinion 保留意见：是指有些地方不对，改过就可以了；

Adverse opinion 否定意见：statements are not presented fairly in the auditor’s opinion;

Disclaimer of opinion无法发表意见：auditor is unable to express an opinion;

1. The total depreciation expense of accelerated depreciation is the same as straight-line depreciation.

Income = revenues + gains

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

**在权责发生制的方法下，Matching principle来确认费用**: expense recognition is the same as expense generated revenue；比如存货，在上一年第四季度购买，下一年第一季度卖出，则both the revenue and expense 都在下一年第一季度确认----以卖出时点为准；

1. Installment sales 分期付款销货：前提是 U.S. GAAP可回收程度不确定的情况下，用installment method，如果高度不确定，用cost recovery method

Installment method：profit = sale price – cost， 每一期按照比例分配；

Cost recovery method：当profit > cost之后，才开始确认profit;

详见Note page 45—46例题

Operating items 经营性项目 VS Non-operating items 非经营性项目

经营性项目：

Sales revenue 销售收入

- COGS 销货成本

= Gross profit 毛利润

- 销售综合管理费用 (selling, general and administrative expense 简称 SG&A)

- 折旧和摊销费用 ( depreciation and amortization expense)

=营业利润 (operating profit or operating income)

非经营性项目Non-operating items

营业利润 (operating profit or operating income)

- 利息费用 (interest expense)

=税前利润 (income before tax, or pretax profit)

-所得税费用 (income tax expense)

=持续经营收益(income from continuing operations)

+/- 停止经营项目的损益 (earnings or losses from discontinued operations)

= 净利润(net income, or net profit)

Gross profit =net sales -COGS

Operating profits = earnings before interest and taxes = EBIT

Net income = earnings after taxes but before dividends

Total capital = long-term debt + short-term debt + common and preferred equity

1. **有形资产折旧方法：**

Straight-line depreciation expense = (cost – **residual value**) / useful life

Double-declining balance depreciation = 2 \* [(cost – **accumulated depreciation**) / useful life]

**无形资产折旧方法**：采用直线**摊销**法，具体计算方法和直线折旧法一样；

1. **Non-recurring items**
2. Discontinued operations: 顾名思义，停业的部分不影响其它营业部份的收入，分析师也不会在分析forecasting future earnings的时候涵盖这部分；
3. Unusual or infrequent items包括：
4. 不是公司一般经营情况下所得或损失；
5. Write-offs, write-downs;

Unusual or infrequent items are included from continuing operations are reported before tax; 分析师要去核实和判断是否公司应该把这部分放在forecasting future firm earnings；

|  |  |  |
| --- | --- | --- |
| **会计项目** | **会计处理** | |
| unusual or infrequent items | include in income from continuing operations | before tax |
| discontinued operations | reported separately in the income statement | after tax |
| extraordinary items以后不会允许 | reported separately in the income statement | after tax |

1. **Earnings per share: 每股收益是排除优先股的股利的，专指common shareholders**

* **A simple capital structure: no potentially dilutive securities;**

Basic EPS = (net income – preferred dividends) / weighted average number of common shares outstanding

计算weighted average shares outstanding要注意不同时间issued的stock要转换成average shares，采用的是股数\* 剩余月份refer to note page 58-59

* **A complex capital structure: contains potentially dilutive securities such as options, warrants, or convertible securities;**

**Treasury stock method库存股方法思路：**

1. 先算出假设行权后所有期权/权证转化为普通股的总金额 ；

2. 总金额除以稀释后股价，代表公司最大可以回购的股数；

3. 股数净增长net increase in the number of shares outstanding = 原先有的总期权/权证股数 – 最大可回购的股数；

详见 note page 61例题

Diluted EPS针对dividends/debt/prefer stocks/stock options/options 的计算公式的不同—分子涉及preferred dividends & debt interests要加回上，最终要对比dilutive EPS 是否小于basic EPS, 如果大于，**则为反稀释，不参与计算，其稀释每股收益就是基本每股收益**

股票是用dividend 除以可转换的股票数，债券是用除税后的金额除以可转换股票数refer to note page 62-65

**Note 上列出三种类型的例题：**

1. **Convertible debt: 分子= net income – preferred dividends + convert. Interest \*(1-t); 注意如果是dividend的话就不需要扣除；也只有这个需要算是否存在反稀释；**
2. **Convertible preferred stock: 分子= net inc – pref div + conv pref div**

**注意：通常公式中convertible preferred dividends 等于被减去的preferred dividends, 所以只剩下net inc**

1. **Stock options: 分子 = net inc – pref div，注意分母：因为是公司持有options，所以是按照market price 回购股票，比如持有1000股options，按市场价格回购800股，则common shares增加200股。详见note page 64例题**
2. Comprehensive income = net income + other comprehensive income

Other comprehensive income 不包括在net income, 包含下面四种：

1. Foreign currency translation gains and losses;
2. Adjustments for minimum pension liability;
3. Unrealized gains and losses from cash flow hedging derivatives;
4. Unrealized gains and losses from available-for-sale securities;
5. **UAAP VS IFRS**

|  |  |  |
| --- | --- | --- |
|  | **Under IFRS** | **Under UAAP** |
| Inventory | FIFO | FIFO & LIFO |
| 完工百分比法 (outcome can be reliably measured) | Applicable 计算方法详见手册page 11 | Applicable |
| 完成合同法(outcome can not be reliably measured) | Applicable;  项目完工前各期等额确认收入和成本，但不确认利润 (等额的意思是revenue = cost，最后一年为余额) | Applicable; 项目完工前既不确认收入和成本，也不确认利润 |
| Barter transaction 易货交易 | 必须参照与非关联方的非易货交易的公允价值 | 之前收到过的现金支付，使用公允价值加以确认；否则，参照让渡资产的账面价值 |
| Inventory cost | **取cost 和NPV孰值低** NPV= expected sales price – estimated selling cost – completion cost; | **是取cost 和 market孰值低** Market 通常等于replacement cost； 但market 不大于NPV 或者不小于NPV – normal profit margin；(NPV- normal profit margin是成本) 如果replacement cost > NPV, market = NPV;  如果replacement cost < NPV- normal profit margin，market= NPV- normal profit margin Replacement cost重置成本：用于购买一项相同固定资产的公平市价，在物价不断上涨的情况下，为了保证企业固定资产的更新，必须以重置成本作为计价的基准 |
| Non-Current asset | Cost & revaluation model | Cost model |
| loss recoveries are allowed | Not allowed |
| PP&E (Property, plant, and equipment) | cost model or revaluation model **Under the cost model,**  PP&E other than land is reported at amortized cost (historical cost – accumulated depreciation, amortization, depletion, and impairment losses) **Under the revaluation model**, PP&E is reported at fair value less any accumulated depreciation | Only Cost model is allowed |
| **Investment property主要earn rent** | **amortized cost model or fair value model** Unlike the revaluation model for property, plant, and equipment, all increases and decreases affect net income i**f firm uses the fair value model;** | No specific definition |
| Revaluation | firms can choose revaluation model. Long-lived assets can be reported at its fair value.  Fair value < carrying value, a loss is recorded on the income statement; Fair value > carrying value, the difference is recorded as revaluation surplus, a component of equity, so net income is not affected; | most long-lived assets are reported at depreciated cost using cost model; Revaluing upward is not allowed. One exception is held for sale, for which prior impairment losses can be reversed; |
| interest received | 视为CFO或CFI 流入 | 视为CFO流入 |
| Interest paid | 视为CFO或CFF流入 | 视为CFO流出 |
| Dividends received | 视为CFO或CFI 流入 | 视为CFO流入 |
| Dividends paid to shareholders | 视为CFO或CFF流出 | 视为CFF流出 |
| Taxes paid | CFO, **除非**tax是和investing or financing相关 | CFO, **即使**tax是和investing or financing相关 |
| Payments for interests and taxes disclosed in the cash flow statement | Separately disclosed | Separately disclosed |
| Written Up | allowed but not more than it was previously written down | Not allowed |
| Written Down | Net realizable value < the balance sheet value of inventory, inventory written down to Net realizable value | Cost > Market, inventory written down to market value |
| **Exceptions-research and  development资本化和费用化** | Development cost 可以资本化：前提是设计成一个 **产品并投入应用或卖出--就是meet certain criteria;** research cost要费用化； | both research and development 都费用化; 但是**create software for sale**, **在product’s tech可行性成立后**，可以资本化； |
| 亏损 impairment | 资产的账面价值 > 可回收价值 才做亏损减值 （可回收价值是公允价值减去出售成本与使用价值两者较高者），使用价值是预计未来现金流的贴现值  Impairment loss不影响cash flow  可以在未来reverse 到当初未减值的金额 | 资产的账面价值 > 公允价值 才做价值。实际上是账面价值和未贴现现金流之和比较 （公允价值不等于未贴现现金流） |
| bond issuance cost 例如发行面值10元，其中发行成本1元 | the bond's issuance costs reduce the bond liability reported on the balance sheet. Thus, asset and liabilities increases by 9 元 | asset increases 10元 (9元 cash and 1元 deferred charge); liabilities increases 10元 |

1. **完工百分比法和完成合同法都是把cost 转化成为expense；两种方法的cash flow都是一样的；**
2. Acquisition of debt and equity investment 是在investing activities下；而acquisition of trading securities 在operating activities下
3. Notes payable is financing activities related, 因为是和银行之间的行为

**D. Fair value model 和 revaluation model 区别详见手册page 139**

**E. Tax accounting differences IFRS VS UAAP详见note page 262**

1. **Change in accounting principle:** 是指从GAAP换到 IFRS或者反过来。**要求追溯调整, all prior-period financial statements currently presented are restated to reflect the change**;

**Change in accounting estimate**: 是指管理层决策的改变，比如change the estimated useful life of an asset because new information indicates the asset has a longer or shorter life. **Do not require the restatement of prior financial statements, and report prospectively;**

1. Each classification of securities 计算方法

Unrealized gains & losses是指在证券出售前市场价值的变化；

For all three classifications of securities, dividend and interest income and **realized gains & losses** (actual gains or losses when the securities are sold) are recognized in the income statement.

具体的例题详见note page 89

|  |  |  |
| --- | --- | --- |
| **classification of securities** | **measure method** | **Details** |
| **Held-to-maturity 持有至到期证券** | measured at amortized cost | Subsequent changes in market value are ignored，也就是说unrealized gains & losses不加以确认 |
| **Held-for-trading securities交易性证券** | measured at fair value | unrealized gains & losses and interest recognized in the income statement |
| **available-for-sale securities可供出售金融资产**：持有的目的既不是为了短期内交易也不是预期持有至到期的债券或资产。是投资者有意愿出售却没有积极去出售的资产 | measured at fair value | interest income reported in income statement; unrealized gains & losses recognized in other comprehensive income like stockholders' equity |

1. **CFO: 影响net income的科目；**

**CFI: acquisition or disposal of long-term assets相关的；**

**CFF: debt, stock相关的；**

**Depreciation affects the firm’s taxes, an increase in depreciation changes operating cash flow, not investing cash flow**

**非现金投资/融资活动：对现金流没有影响**

* **股转债**
* **非货币资产置换**
* **非货币资产入股**

1. **计算CFO by using direct & indirect method**

**Indirect method采用权责发生制:**

net income -gains + loss from financing or investing + noncash charges to income (depreciation & amortization) – noncash revenue – use of cash in asset accounts + source of cash in liability account refer to note page 111

**Direct method 采用收付实现制**:

sales开始，sales- cogs- cash operating expense – interest expense -taxes

cash flow的分类，不是影响income statement就是影响balance sheet；asset减小，liability和equity增加是正现金流。asset增加和liability和equity减小，是负现金流。

**Direct method的优势是present clearly the firm’s operating cash receipts and payments;**

**Indirect method的优势是 focus on the differences between net income and operating cash flow. This provides a useful link to the income statement when forecasting future operating cash flow**

1. – **虽然CFO 的计算方式不同（直接法和间接法），但是结果都一样；**

* **在直接法和间接法下，计算CFI和CFF结果都是一样；**
* **Asset 和cash flow呈反向关系：因为asset增加需要用到cash, 所以asset减少会产生新的cash;**
* **负债和cash flow呈正向关系：因为负债要减少得通过cash来实现；**
* **Cash inflow 是正数，cash outflow是负数；**
* **Operating activities related to the firm’s current assets and current liabilities, 计算CFO的步骤**

1. **Begin with net income**
2. **Subtract gains or add losses that resulted from financing or investing cash flows (such as gains from sale of land)**
3. **Add back all noncash charges to income (such as depreciation and amortization) and subtract all noncash components of revenue**
4. **Increases in the operating asset accounts are subtracted, while decreases are added;**

**Increases in the operating liability accounts are added, while decreases are subtracted;**

**也就是说资产类账户中现金支出增加的要减掉，反之加回，成反比；**

**负债类账户中现金收入增加的要加上，反之减掉，成正比；**

* **Investing activities related to the firm’s non current assets, like purchasing or selling long-term asset**
* **Financing activities related to the firm’s non current liabilities and equity, like securities, bonds;**

1. 计算涉及一下5点：refer to note page 117

* Cash collected from customers: 涉及sales, account receivable
* Cash used in the production of goods and services (cash paid to suppliers): 涉及COGS, inventory, account payable
* Cash operating expenses: 涉及wages, wages payable
* Cash paid for interest: 涉及interest expense， interest payable
* Cash paid for taxes: 涉及tax expense， tax payable， deferred tax liability

1. Cash collections from customers:

* Begin with net sales from the income statement;
* 与account receivable 成反比，因为AR少了就代表从客户收回来钱了；
* 与unearned revenue成正比 （比如cash advance就是unearned revenue），钱先收了，所以要加到collection;

Cash payments to suppliers

* Begin with COGS from the income statement;
* Add back depreciation or amortization;
* 与account payable 成反比；
* 与inventory 成正比；

Net income - dividend paid = Retained earnings

1. **FCFF= free cash flow to firm**

公式一：FCFF= NI +NCC + [Int \* (1- tax rate)] -FCInv -WCInv NCC: Non-cash charge FCInv: Fixed capital investment

公式二： FCFF= CFO - FCInv + [Int \* (1- tax rate)] FCInv = fixed capital investment (net capital expenditures)

企业自由现金流统计的是可供所有投资者分配的现金流，所以将已经付给债权人的回报 （即利息）加回到CFO(税后)中

**FCFE= free cash flow equity**

公式：FCFE= CFO – FCInv + net borrowing

净借款是当年新增借款与本金偿付之间的差额，负值代表净偿付 (net payment)

1. 计算activity ratio: 主要是计算周转率
2. 计算turnover相关的 （efficiency ratio），都是相对应的销售成本/相关的平均数，分母与标的项一致；

**Sales 产生receivables，COGS产生inventory，purchase 产生payables;**

1. **Receivables** turnover= annual **sales**/ average receivables 表示一个期间内应收账款可以收回多少次，一般越多越好
2. **Inventory** turnover**= cost of goods sold**/ average inventory 表示一个期间内存货可以卖掉多少次， 一般越多越好
3. **Payables** turnover**= purchases**/ average trade payables

purchases= ending inventory-beginning inventory+ cost of goods sold 表示一个期间应付账款可以偿还多少次，一般越少越好

**Asset & capital 和 revenue绑定在一起， revenue一般是指sales的金额；**

**Working capital= current asset – current liability**

**A. Total asset** turnover= **revenue**/ average total assets

1. **Fixed asset** turnover= **revenue**/ average **net fixed** assets
2. **Working capital** turnover= **revenue**/ average working capital
3. 计算days相关的，都是365/相关的turnover。
4. Days of **sales** outstanding= 365/ **receivables** turnovers 衡量应收账款回收一次需要多少天，一般越短越好
5. Days of **inventory** on hand= 365/ **inventory** turnover衡量存货卖掉一次需要多少天，一般越短越好
6. Days of **payables**= 365/ **payables** turnover ratio 衡量应付账款偿还一次需要多少天，一般越长越好
7. 计算**liquidity ratios: measure the firm’s ability to satisfy its short-term obligations;**
8. Current ratio 流动比率= **current assets**/ current liabilities
9. Quick ratio= **(cash + marketable securities可出售债券 + receivables)**/ current liabilities

速动比率是exclude inventory from current assets，如果速动比率低，可能说明存货量高；

1. Cash ratio 现金比率= **(cash + marketable securities)**/ current liabilities

现金比率是exclude inventory and receivables;

1. 防御区间比率Defensive interval = (cash + marketable securities + receivables)/ average daily expenditures 衡量现金支出可以维持多少天
2. 现金流转周期Cash conversion cycle = days sales outstanding + days of inventory on hand – number of days of payables 衡量从购买存货的现金支出开始，到现金账款回收为止，一共需要多少天，一般越短越好，表示现金转换越快 refer to 手册 page 97
3. 计算 **solvency ratios:** **measure the firm’s ability to satisfy its long-term obligations;**
4. Debt-to-equity= total debt/ total shareholders’ equity

Total debt = short debt + long debt

1. Debt-to-capital = total debt/ (total debt + total shareholders’ equity)
2. Debt-to-assets= total debt/ total assets

**计算Coverage，标的项和分母是一类，分子要么是total asset，要么是EBIT or EBIT+ lease payment**

1. 财务杠杆**Financial** leverage = average total assets/ average total **equity = ROE/ROA**
2. 利息保障比率**Interest** coverage = earnings before interest and taxes/ **interest** payments

是指企业息税前利润与利息费用之比；

衡量在支付利息之前，公司是否有足够的利润满足这项支付

1. 固定费用涵盖比率（租赁费用）Fixed charge coverage = ( earnings before interest and taxes + lease payments )/ interest payments + lease payments
2. Debt coverage ratio= CFO/ Total debt
3. 计算 profitability ratios：分子是和标的项相关的income 分母都是revenue，因为是计算获利能力
4. 销售净利率Net profit margin = net income/ revenue
5. 销售毛利率Gross profit margin = gross profit / revenue

Gross profit = sales – cost of goods sold

1. 营业利润率Operating profit margin = operating income or **EBIT** / revenue

EBIT = gross profit – selling, general, and administrative expenses

1. Pretax margin = EBT/ revenue
2. 计算return, 分子都是income相关的：衡量股票投资者资金的回报率

**分子要么是income要么是EBIT，分母与标的项一致，且为平均值**

1. **资产回报率Return on asset ROA**= net income or [net income + interest expense (1- tax rate)] / average total assets
2. **经营性资产回报率Operating** return on assets = operating income or **EBIT**/ average total assets
3. 总资本回报率Return on total **capital** = **EBIT**/ average total capital

Average total capital = short and long-term debt + equity

1. **权益回报率Return on equity ROE**= net income/ average total equity
2. 普通股回报率 Return on common equity = net income – preferred dividends / average common equity = net income available to common / average common equity

Cash-to-income ratio = CFO / Operating income

1. **Dupont system of analysis 杜邦系统分析法**：是通过分解ROE，来分析是什么因素导致ROE的变化

Three-part approach:

ROE = net profit margin \* asset turnover \* leverage ratio

Five-part approach:

ROE= tax burden \* interest burden \* EBIT margin \* asset turnover \* financial leverage

相对应的公式：

Net profit margin = net income /revenue

Asset turnover = revenue/ average total asset

Financial leverage = average total asset / equity

Tax burden = net income / EBT **也等于1- average tax rate**

Interest burden = EBT/ EBIT

EBIT burden = EBIT / revenue

1. **Sustainable growth rate g= RR \* ROE**，其中RR = (net income available to common – dividends declared) / net income available to common RR:retention rate 保留率

或者RR = 1- dividends declared / net income available to common ，**其中 dividend / net income available to common 是dividend payout ratio**

**具体到每股earnings per share = net income available to common**

1. **Product costs VS period costs**

Product costs includes: 详见2016真题morning 49

* Purchase cost less discounts and rebates;
* Conversion (manufacturing) costs including labor and overhead;
* Other costs necessary to bring the inventory to plant, like freight-in to plant;

Period costs includes:

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

1. **Specific identification method 个别鉴别法**：被用以识别具体的售出存货的价值，并计算余下存货的价值以便今后结转. 比如适用于珠宝类，is also appropriate for special orders or projects outside a firm’s normal course of business.
2. If inventory unit costs decreases (说明价格下降), stable **or increasing** inventory quantities, under FIFO, will have higher COGS, net income decreases;

If inventory unit costs increases (说明价格上升), stable or increasing inventory quantities, under LIFO, will have higher COGS, net income decreases;

Stable **or increasing** inventory quantities, FIFO COGS will be understated compared to current cost, so earnings will be overstated;

Under inflationary environment:

LIFO COGS > FIFO COGS 因为最后买的成本高于先买的成本；

LIFO inventory < FIFO inventory 因为ending inventory is valued using older, lower costs

LIFO ending inventory is less than current cost;

**LIFO** with lower earning, low earning translates to lower income taxes, which **increase cash flow.**

1. **When pricing is rising or falling, FIFO 是最好计算Ending inventory方法，因为其Purchase cost是最接近于current cost的；**

**LIFO COGS 是最接近于current cost of income statement的；current cost现行成本；**

1. 在FIFO & specific identification下，ending inventory & COGS的值是一致的 （不论用periodic or perpetual system）因为即使是上一年的inventory，在FIFO下也是先出货，而不是因为过了一年而不包括在计算内；

在LIFO & weighted average cost下，两者的值不同；

在LIFO清算，存货在价格提高的情况下会减少COGS，因为剩下的都是成本更低的；

Period systems: 是指不管期间有买有卖，买卖数量都在期间最后统一计算；

Perpetual system：买卖实时计算，所以LIFO 和FIFO的COGS还有inventory会不同

1. **Converting ending inventory and COGS from LIFO to FIFO: 只有inventory 和asset转换的时候，计算reserve不是用变化值，而是用当年的reserve 值**

**Inventory: InvF = InvL + LIFO reserve**

**COGS: COGSF = COGSL – (ending LIFO reserve -beginning LIFO reserve)**

**或者理解为以下公式：**

**COGS: COGSF + ending LIFO reserve = COGSL + beginning LIFO reserve**

**注意COGS是卖出成本，Inventory是剩余的成本，呈相反关系**

**Retained earnings: RE (FIFO method) = RE (LIFO method) + LIFO reserve × (1 – Tax rate)**

**Net income: NI (FIFO method) = NI (LIFO method) + Increase in LIFO reserve × (1 – Tax rate)**

**同理Asset: Asset (FIFO method) = Asset (LIFO method) + LIFO Reserve × (1 – Tax rate)**

1. **LIFO liquidation计算思路**：根据beginning inventory + purchase = COGS (actual) + ending inventory 算出COGS (actual)；之后再根据beginning inventory + purchase = COGS (if replaced) + ending inventory 算出COGS (if replaced)，if replaced一般是指由于罢工导致无法继续生产商品，靠以前的inventory卖出货品；

**COGS (actual) 与COGS (if replaced) 的差额就是extra profit，产生的原因是如果不罢工单位成本的差异；**

1. Capitalized inventory costs 是将存货相关的成本计入资产负债表中；

Expensed inventory costs 是将存货相关的成本计入利润表中；

具体相关成本科目详见手册page 108—109

1. LIFO 与FIFO的对比 参见手册page 117—118
2. 重要例题：comparing financial ratios under FIFO & LIFO Note page 195—199

涉及到的步骤：

1. Add the LIFO reserve to LIFO inventory
2. Subtract the change in the LIFO reserve for the period from COGS;
3. Decrease cash by LIFO reserve \* tax rate
4. Increase retained earnings (equity) by LIFO reserve \* (1- tax rate)

LIFO reserve = FIFO inventory – LIFO inventory

FIFO COGS= LIFO COGS – (ending LIFO COGS- beginning LIFO COGS)

**计算current ratio**，**会涉及到current asset由LIFO 转换到FIFO**。题中current asset包括cash 和inventory: inventory的转换=LIFO inventory + LIFO reserve;

Cash的转换= LIFO cash – LIFO reserve \* tax rate = 115- 100 \* 20%= 95.

**计算inventory turnover ratio**，**会涉及到COGS和average inventory的转换**。

FIFO COGS= LIFO COGS – (ending LIFO COGS- beginning LIFO COGS) = 3000- (100-90) =2990

FIFO average inventory = LIFO average inventory + LIFO beginning and ending reserve= (310 + 290) /2 + (100+ 90)/2= 395

**计算long-term debt-to-ratio 会涉及到 stockholders’ equity 的转换**。

题中net of tax from LIFO reserve 会引起equity的变化： 100 \* (1-tax rate)= 80，加到FIFO equity中

**计算gross profit margin，会涉及到 gross profit的转换.**

由于10 change in the LIFO reserve 之前从LIFO COGS中减掉，在转换成FIFO时，应加回到gross profit中

**计算net profit margin，会涉及到net income的转换。**

除了考虑到加上10 change in the LIFO reserve之外，还要减去因此带来的税= 10 \* 20%=2

**计算return on asset， 会涉及到net income和average asset的转换。**

Net income前面已经算过转换了，至于FIFO average asset= LIFO average asset + LIFO average net reserve= (2070 + 1940)/2 + (80 + 72)/2= 2005 + 76= 2081

1. **资本化的前提条件**：expected to provide a future economic benefit over multiple accounting periods;

**费用化的前提条件**：if the future economic benefit is unlikely or highly uncertain;

**利息资本化**：前提是公司自行建造资产，或者购置资产，很长时间筹备才能达到使用要求，**与这段时间直接相关的借贷成本需要进行资本化**，视为长期资本成本的一部分，**视为投资活动现金流CFI 流出**；

Interest cost is allocated to the income statement through depreciation expense (asset is held for use) or COGS (asset is held for sale);

**Capitalized interest** is reported in the cash flow statement as an outflow from **investing activities;**

**Interest expense** is reported as an outflow from **operating activities**;

**Capitalizing results in higher net income in the first year and lower net income in the subsequent years. Similarly, assets, equity, and operating cash flow are all higher when expenditures are capitalized;**

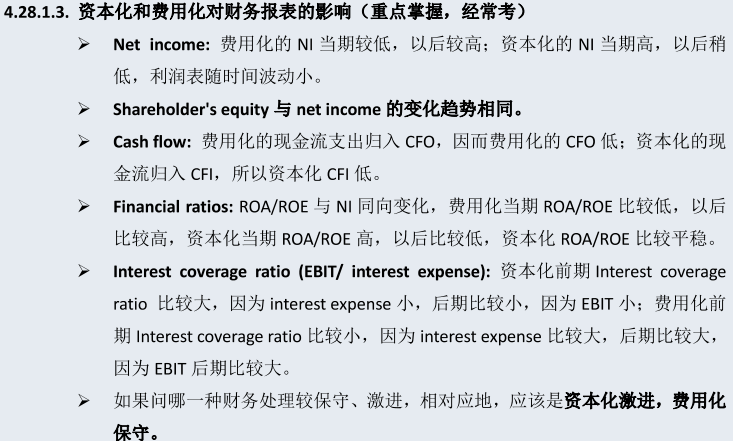
总体上看，asset’s cost无论是资本化还是费用化，total net income最终结果都是一样的。

1. **Capitalizing VS expensing cost 对net income, equity, cash flow, financial ratio的影响**

Net income: 资本化时起初变高，后续变少，费用化则相反；

Equity: 资本化时起初变高因为留存收益变多，后续变少，费用化则相反；

**Cash flow：资本化或者加速折旧时operating cash flow变高，因为tax 变少，而investing cash flow变少，因为资本化支出reported as an outflow from investing activities，费用化则相反；**



1. **Depreciation method:**
2. **Straight-line depreciation:**

**Depreciation expense= (original cost – salvage value) / depreciable life**

1. **Accelerated depreciation:**

**Double-declining balance (DDB) = (2/ depreciable life in years) \* book value at beginning of year X 这个公式和之前的双倍余额递减法的公式是一样的；**

1. **Units-of-production method 单位产量折旧法：基于在给定期限内真实的使用来分摊长期资产成本的一种折旧方法**

**= (original cost – salvage value) \* (output units in the period / life in output units)**

1. Revaluation model: no fair value alternative for asset reporting under UAAP;

IFRS permits asset to be reported at fair value;

Under IFRS，只要有事件表明资产有亏损，每年都要减值测试；

Under UAAP, 只有当事件表明公司不能通过未来的应用复原账面价值，才会减值测试；

**Asset held for use, Under UAAP, loss recoveries are not permitted;**

**Asset held for sale, loss can be reversed under IFRS & UAAP;**

1. **计算asset average age, total useful life and remaining life**

Average age平均已使用年限= accumulated depreciation / annual depreciation expense

Total useful life = historical cost / annual depreciation expense，其中historical cost is gross PP&E before deducting accumulated depreciation

Remaining useful life = ending net PP&E / annual depreciation expense，其中net PP&E is equal to original cost (gross PP&E) minus accumulated depreciation

1. **Finance lease & operating lease的会计处理 (IFRS) 从lessee角度**

Operating lease: rent expense 计入income statement, lease payment 计入cash flow statement;

Finance lease: 起初，present value of future minimum lease payment or fair value的较小值计入as asset 和liability in the balance sheet;

随着租赁的进行，depreciation expense and interest expense 计入利润表, principal payment 计入cash flow statement;

**Under UAAP, interest expense is reported in the cash flow statement as an outflow from operating activities and the principal payment is reported as an outflow from financing activities;**

1. **Impairments under IFRS**

**前提条件：carrying value (original cost -accumulated depreciation) > recoverable amount ( fair value – selling costs & value in use 两者较大值 ) value in use is the present value of future cash flows**

**Impairments under UAAP**

**Step 1: recoverability test: considered impaired if carrying value (original cost -accumulated depreciation) > asset’s future undiscounted cash flow**

**Step 2: loss measurement: if impaired, asset’s value written down to fair value, loss = carrying value – fair value (or the discount value of its future cash flows if the fair value is unknown)**

1. **Derecognition of assets:**

Under cost model, carrying value= historical cost – accumulated depreciation or amortization, adjusted for any impairment charges taken;

Under revaluation model, carrying value= the value of last revaluation date – any subsequent depreciation or amortization;

If the amount is material, gains or losses may be reported in other income or losses or as a separate line item;

When an asset is abandoned, sale price is zero and loss is equal to the carrying value;

Exchanged asset, 价格采用换过来的asset的fair value，如果fair value is not reliable, 就用原先exchanged asset的carrying value，**这时没有gain or loss**;

1. Operating lease: 只是把租金计入income statement;

Finance lease: the lease payment from lessee included interest expense 和本金；

From lessee’s perspective, finance lease causes net income lower in the early years, and cash flow from operations is higher, 因为起初asset & liability increases, tax decreases; operating lease 正相反；

**From lessor’s perspective**, in the cash flow statement, the **interest revenue** of lease payment is reported as **operating activity** and **principal** reduction is reported as **investing activity**;

**From lessor, principal is investing inflow;**

**From lessee, principal is financing outflow;**

**From a lessee’s perspective:**

|  |  |  |
| --- | --- | --- |
|  | Finance Lease | Operate Lease |
| Asset | higher | lower |
| Liabilities | higher | lower |
| Net Income (early years) | Lower | Higher |
| Net Income (later years) | higher | lower |
| Total net income | Same | Same |
| Cash flow from operations | Higher | Lower |
| Cash flow from financing | Lower | Higher |

1. **计算每年租赁的资产和负债：**

第一年年初资产=负债= 现值 （PV），之后每年年末的资产= 年初资产- 折旧费用；

每年年末负债= 年初负债- 本金偿还

本金偿还=每年租赁费用- 利息支付

Operating lease 总费用= 年租金费用 \* 租期

Financing lease 总费用= 折旧费用 + 利息费用

1. **递延税资产和递延税负债**

**源于税法和会计准则的差异，这个差异，就是递延税项。其中实际缴纳的多于利润表上的，就是递延税资产，表示以后可以少交所得税，反之就是递延税负债，表示以后要多交所得税。Tax payable 则是pay in the immediate future**

资产角度：

Taxable income (on the tax return) < pretax income (on the income statement),

Difference expected to reverse in future, **a deferred tax liability is created**;

Taxable income > pretax income,

Difference expected to reverse in future, **a deferred tax asset is created**;

**如果递延税负债以后不能reverse, 就是以后不用补交税了, it will be classified as equity (DTL decreased and equity increased by the same amount); DTL is expected to reverse, should be treated as liabilities;**

另一种角度（包括资产和负债）

资产的账面价值 < 计税基础， 确认递延所得税资产；

资产的账面价值 > 计税基础， 确认递延所得税负债；

负债的账面价值 < 计税基础， 确认递延所得税负债；（不存在）

负债的账面价值 > 计税基础， 确认递延所得税资产；比如预收款

**资产类：Tax base > carrying value，则为DTA；反之则为DTL；**

**负债类：Tax base < carrying value，则为DTA；反之则为DTL；**

**总结：哪类的账面价值 < 计税基础，则确认为属于哪类**

**Income tax expense = taxes payable + DTL – DTA**

**从tax return申报税角度，会涉及到的术语包括taxable income 和 tax payable**

**从income statement 角度，会涉及到的术语包括 pretax income 和 income tax expense**

**Income tax expense: 提到expense, 联想到利润表；**

**Tax payable: 提到payable，联想到资产负债表；**

1. **Tax base for Assets / Liabilities/ revenue received in advance**

**Tax base of asset:** is the amount that will be deducted (expensed) on the tax return in the future as the economic benefits of the asset are realized;

**Carrying value of asset: net of depreciation and amortization;**

**Tax base of liabilities:** carrying value of the liability minus any amounts that will be deductible on the tax return in the future;

**Tax base of revenue received in advance:** carrying value minus the amount of revenue that will **NOT** be taxed in the future

1. **计算DTA & DTL的思路：**
2. **根据题目给出的信息确定income or revenue， 以及expense;**
3. **分别从tax reporting 和 financial reporting角度算出taxable income 和 tax expense做为计税基础；**
4. **两者之差为DTA or DTL;**
5. **Valuation allowance**

**Increasing valuation allowance will decrease DTA, and increasing income tax expense and decrease net income**

如果一家公司过去几年连续亏损或者没有能力使用税收损失递延，则需要使用valuation allowance来反应DTA未来实现不了；

**由于增加valuation allowance会减少earnings，公司管理层可能会通过改变valuation allowance来操纵earning；**对此，analyst 要根据公司业绩核实是否DTA 未来会实现，也要检查公司更改的valuation allowance 是否出于经济合理原因

**Bad debt reserve**: in periods of high earnings, the allowance for bad debt is increased to reduce reported earnings, in effect storing these earnings for later use. In subsequent periods, if earnings are below benchmark values, the bad-debt reserve can be reduced to meet earnings targets;

Valuation allowance 和bad debt reserve 某种程度上很相似，同理，LIFO reserve的增加会降低COGS；

FIFO ending inventory = LIFO inventory + LIFO reserve;

FIFO COGS sold = LIFO COGS - the change of LIFO reserve

1. Temporary changes 的几种情况for deferred tax asset/ liability
2. 导致DTL: Accelerated depreciation for tax purposes and straight-line depreciation for financial statement;
3. 导致DTA: impairment—因为当期立即提减值，但是扣税要等到资产卖掉或处理掉；
4. 导致DTA: 重组---一旦宣布立即确认成本，但是直到卖掉才会付税；
5. 导致DTA: post-employment benefits and deferred compensation—employee已经赚到了但是要慢慢后期pay;
6. No DTL: gains or losses from available-to-sale marketable securities, because direct to equity
7. Permanent difference: 可能是由revenue is not taxable, or expense is not deductible, or tax credits that result in a direct reduction of taxes;

有效税率= 所得税费用/税前会计利润， 法定税率= **应**纳所得税/ **应**纳税所得;

Temporary difference: **DTA或DTL= 暂时性差异 \* 反转年度的法定税率** refer to 手册 page 144

由此表明DTA/DTL变动的方向和幅度是一致的

**Income tax expense = tax payable + DTL – DTA** 表明税率增加，DTL & DTA都增加，反之都降低

**导致DTL产生：Taxable temporary differences results in expected future taxable income；**

**导致DTA产生：deductible temporary differences that result in expected future tax deductions;**

1. Discount bond & premium bond

**Coupon payment是债券发行方定期付给投资方的利息，而interest expense是债券发行方通过市场利率收的利息；**

Face value或叫par value: 到期应付的本金金额

Coupon payment = Par value \* coupon rate （面值税率）, coupon payments are reported as cash **outflows** from **operating activities;**

Interest expense = issuance price \* market rate or yield, interest proceeds are reported as a cash **inflow** from **financing activities**;

market rate or yield = coupon rate, 是par bond

**market rate or yield > coupon rate, 是discount bond interest expense will increase as bond liability increases;**

**market rate or yield < coupon rate, 是premium bond interest expense will decrease as bond liability decreases;**

**premium bond的amortization =** interest payment minus the interest expense, interest payment is also the couple payment, and interest expense is calculated based on market interest rate;

1. 计算债券的账面价值变动：详见手册page 159--160

**溢价债券公式： 期末账面价值= 期初账面价值 – 溢价摊销**

**折价债券公式：期末账面价值=期初账面价值+ 折价摊销**

**计算total interest expense的公式：**

Discount bond’s total interest expense = coupon + (Fair value – PV)

Premium bond’s total interest expense = coupon – (PV - fair value)

票面利息可以代表实际支付给投资者的回报，利息费用可代表应该支付给投资者的回报

1. Issuance costs

Consider 1 million bond issued for 980,000 with issuance costs of 5,000. Under UAAP, the firm increases assets by **980,000** (**975,000 cash and 5,000 deferred charge**) and increase liabilities by 980,000. 也就是说under UAAP, issuance costs are capitalized as an asset and allocated to the income statement as an expense over the term of the bond

**Under IFRS, the bond’s issuance costs reduce the bond liability reported on the balance sheet.** Thus, the firm increases assets and liabilities by **975,000.**

**Summary of financial effects of issuing a bond refer to note page 277**

1. **Calculate the impact of the financial lease on balance sheet and income statement**

详见note 例题 page 283

思路：先计算出PV，之后通过公式 interest expense = leasehold value \* interest rate 来计算出interest expense。

**Lease liability = leasehold value + interest expense – lease payment** 由此算出lease liability

Lease asset = PV -depreciation cost 来计算出结果

**注意：lease payment是在年末付，如果是年初的话，model就要改成BGN**

1. **Finance lease VS operation lease**

**像wording “lease asset”, “lease liability”都是finance lease;**

**像wording “future obligations by maturity” 是指rent expense, 是operation lease;**

1. **Sales-type lease, direct financing lease & operating lease**

Under UAAP: present value of lease payment > carrying value of asset, treated as sales-type lease;

present value of lease payment = carrying value of asset, treated as direct financing lease;

under IFRS, not distinguish a sales-type lease and a direct financing lease;

**Under both sales-type lease & financing lease:**

the interest is reported as an inflow from operating activities;

the interest portion of the lease payment = lease receivable at the beginning of the period multiplied by the lease interest rate 和之前的例题都是一样的算法

Principal reduction (Receivable) is reported as inflow from investing activities;

From lessee’s perspective, principal is a **financing** outflow;

From lessor’s perspective, principal is a return of capital invested in the lease, so it is **investing** inflow;

1. **Calculate leverage and coverage ratios (use solvency ratios to measure a firm’s ability to satisfy long-term obligations 衡量公司长期债务偿还能力)**

计算leverage ratio: 这里的debt是指interest-bearing obligations. Non-interest-bearing liabilities，像**accounts payable, accrued liabilities, and deferred taxes, are not considered debt.**

**具体详见Note page 293--294**

Accrued expense: When an expense is incurred and no cash has been paid, expenses are increased and a liability

Accrued revenue: When cash is to be received after revenue has been recognized but no billing has actually occurred

Accrued 是指实际发生了，但是没有发生金额的变动（如还没有付款或收款）

Deferred 是指金额先发生了变动（如先付款或收款），但是实际上还没有发生

1. **Net pension assets= fair value of plan assets – present value of pension obligation 差额大于0，则为资产，差额小于0则为负债，即net pension liabilities**

**IFRS VS UAAP for net pension asset or liability refer to note page 292 & 手册 page 180**

1. Financial reporting quality是针对decision useful来说的，主要考虑相关性relevance和如实性faithful;

Quality of reported earnings 是针对持续盈利能力和适当的资本回报sustainable and represent an adequate return on invested capital;

**所以当financial reporting quality low, quality of reported earnings is impossible to assess;**

1. Conservative accounting VS aggressive accounting

Conservative accounting 保守会计选择：降低当前期间报告业绩和财务状况，增加以后期间报告业绩和财务状况。通过降低本期收入或盈利或经营现金流的金额，或增加本期费用和债务的金额来实现；

Aggressive accounting 激进会计选择：增加当前期间报告业绩和财务状况，降低以后期间报告业绩和财务状况。通过增加本期收入或盈利或经营现金流的金额，或降低本期费用和债务的金额来实现；

1. Describe accounting methods to manage earnings, cash flow and balance sheet:

**Free-on-board at shipping point** will mean that revenue is recognized earlier compared to FOB at the destination; in periods where high earnings are expected, management would delay recognition of revenue to the next period and hold or delay customer shipments to achieve this.

**Bill-and-hold transaction**: 提前订单但不要求发货---increase earnings in the current period;

**Depreciation methods and estimates**: a greater salvage value will slow depreciation so the carrying value of the asset is greater, depreciation expense is less, and net income is higher. A smaller salvage will have the opposite effects.

**Inventory method**: 考虑到相关性，无论价格是上涨还是下降，FIFO results in more accurate balance sheet inventory values because inventory value is closer to current replacement cost than the weighted average cost method;

**COGS** are closer to current cost under the weighted average cost method;

**Gross profit** under FIFO is distorted in that it includes gains from rising prices (or losses from decreasing prices), so the weighted average cost method produces better information on the income statement.

**Capitalization:** if an expense is capitalized, amount is classified as an investing cash outflow so that operating cash flow is increased; under IFRS, interest and dividends paid as either CFO or CFF, and interest and dividends are received as either CFO or CFI;

**Stretching payables** (拉伸付款) is taking longer to pay to suppliers which increases operating cash flows;

1. **小知识点：**

* 有价证券，现金及现金等价物可用摊余成本或公允价值报告；应收账款可用可变现净值报告；
* **Comprehensive income**: includes net income and other comprehensive income;

**Accumulated other comprehensive income**: does not include net income but is a component of stockholders’ equity at a point of time;

* Disclosure requirement: reconciliation is not required under IFRS. Under IFRS payment for interest and taxes must be disclosed separately in the cash flow statement.
* Inventory 的cost flow method改变：大多数情况下，计算方法改变，需要回溯，把以前的财务报表也相应地改成新的cost flow method，但是有一个exception是change to LIFO，这时候no adjustments are made to prior periods;
* Only goodwill created in a business combination is capitalized on the balance sheet. The costs of any internally generated “goodwill” are expensed in the period incurred;
* Tax depreciation is not effected by choice of method whether straight-line or declining balance or units of production
* Income tax: permanent difference: between taxable income (tax return) and pretax income (income statement) that will not reverse in the future;
* 易错习题：note page 242- 7/11/12; page 267-11/12/17, page 302-10/11/12/14, page 318-1/ 6, page 331-1/6/8
* Channel stuffing 堵塞分销渠道：是一种向未来期间预支收入的恶性促销手段。卖方通过向买方(通常是经销商)提供优厚的商业刺激，**诱使买方提前购货**，从而在短期内实现销售收入的大幅增长，以达到美化其财务业绩的目的。
* Unrealized gains and losses on held-for-trading securities are recorded in income, while those on available-for-sale or held-to-maturity securities are not;

Unrealized gains and losses on held-for-trading and available-for sale securities are reflected in balance sheet asset values, for held-to-maturity securities they are not;

Under IFRS, unrealized gains and losses on available-for-sale debt securities that result from exchange rate fluctuations are recorded on the income statement. Because they are not recorded as income under US GAAP, an analyst should subtract (add) this component of unrealized gains (losses) from the net income of the IFRS firm to improve comparability;