Tax

- **Tax Return**
  - **Taxable Income**: income subject to tax return
  - **Tax Payable** (**current tax expense**): tax liability caused by taxable income
  - **Income Tax paid**: actual cash flow for income taxes (payment or refund)
  - **Tax loss carry forward**: current or past loss that can be used to reduce future **income**. Result in deferred tax asset.
  - **Tax base**: net amount of asset or liability
- **Financial Reporting**
  - **Accounting Profit/earning before tax/income before tax**
    - Pre-tax financial income
  - **Income tax expense**
    - Expense recognized in the income
    - Income tax expense = tax payable + ΔDTL - ΔDTA
  - **Deferred Tax Liabilities (DTL)**
    - Income tax expense > tax payable, future cash outflow
    - Balance sheet amount
  - **Deferred Tax Asset (DTA)**
    - Income tax expense < tax payable, future tax saving, tax loss carry forward
    - Balance sheet amount
  - **Valuation Allowance**
    - Reduction of deferred **tax assets** based on the likelihood that assets will be not realized.
  - **Carrying Value**
    - Net balance sheet value of an asset or liability
  - **Permanent difference**
    - Difference in **taxable income** and **pre-tax income** that will not reverse in the future
  - **Temporary difference**
    - Difference in **tax base** and **carrying value** of an asset or liability that will result in taxable amount or deductible amounts in the future.

Tax Terms

Term	Tax Return	Financial Reporting
Income	**Taxable Income**	Income/earning before tax/accounting profit
Expense	Taxable **payable** (Current tax expense)	Income tax **expense**
Tax Loss	Tax loss carry forward	Deferred tax asset
Tax gain		Deferred tax liability
Value	Tax base	Carrying value
		Valuation allowance (reduce DTA)

Deferred Tax Liabilities (owe government) 政府少收

- DTL is created when Income tax expense is **larger** than tax payable due to temporary differences.
- DTL are expected to **reverse** and result future cash **outflows** when taxes are paid.

- Occur When
  - **Revenue or gains** are **recognized** in the income statement **before** they are included in tax return due to temporary differences. 先算或者多算盈利
  - **Expenses or losses** are **deductible** before they are recognized in the income statement. 先低税或者多抵税
- **Examples**
  - **accelerated** depreciation used on the tax return, and **straight**-line depreciation is used on the income statement

Deferred Tax Assets 政府多收

- DTL is created when Income tax expense is **smaller** than tax payable due to temporary differences.
- DTA are expected to **reverse** through future operations and provide future tax **savings**.
- Occur when
  - **Revenue or gains** are **taxable** in the tax return **before** they are recognized in the income statement due to temporary differences.
  - **Expenses or losses** are recognized in the income statement before they are **deductible**.
  - **Tax loss carry** forwards are available to reduce future taxable income.
- Typical causes
  - Post-employment benefits, warranty expenses, tax loss carry forwards

Tax Base of Assets

- **Tax base**
  - The amount that will be **deducted** on the tax return in the future as the economic benefits of the asset are realized
- **Carrying value**
  - The **value** of assets reported on the financial statement, net of **depreciation** and amortization
- DTL
  - Carrying value > tax base -> DTL (carrying value 之后交税的参考)
- **Depreciable equipment**
  - Cost of equipment is 100k
    - Income statement: depreciation expense 10k for 10 years
    - Tax return: depreciated 20k per year for five years
  - At the first year
    - Tax base is 80k, carrying value is 90k
    - Deferred tax liability is 10k * tax rate
      - (carrying value – tax base) * tax rate
      - =(tax depreciation – asset depreciation) * tax rate
  - Sales of the machine for 100k
    - Income a gain is 10k, tax is 20k, this will reverse the DTL
- **Research and development (expense – capitalized -> DTA)**
  - At the beginning of this year, 75k of R&D was **expensed** in the income statement 财务报表费用化

- Tax return, the R&D was **capitalized** and is amortized over **straight-line** basis over three years, depreciation 25k 税收资本化
- At the end of first year, the tax base is 50k (75k-25k), and the asset has no carrying value (does not appear on the balance sheet)
  - Carrying value - tax base = 0 – 20k = -20k -> DTA
- Earning before tax (expense -75k) is less than taxable income (-25k) -> tax asset

- **Accounts receivable (bad debt – no -> DTA)**
  - Gross receivable is 20k outstanding at the year-end
  - Firm recognize bad debt expense 1.5k in the income statement
  - Tax, bad debt expense cannot be deducted until the receivables are deemed worthless
  - At the end of year
    - Tax base is 20k, carrying value is 18.5k
    - A deferred tax asset=-(18.5-20) =1.5k*tax rate

Tax Base of liabilities

- **Tax base**
  - Carrying value of the **liability** minus any amounts that will be **deductible** on the tax return in the future
    - 负债：面值 – 减免的 （延迟减免）
  - Revenue received that in advance is the **carrying** value minus the amount of **revenue** that will **not be taxed** in the future
    - 资产：面值 - 不被收税 （因为先被收税了）
- DTA
  - Carrying value > tax base -> DTA (carrying value 是之后扣税的参考)
- **Customer advance (DTA) 先收税**
  - At year end, received 10k from customer for goods that will be shipped next year.
  - Tax return 先收税
    - revenue received in advance is taxable when collected
  - carrying value
    - 10k, it will be deducted when goods are shipped next year
    - It is included in the COGS
  - Tax base
    - Carrying value 10k – any amounts that will **not be taxed** in the future
    - Liability has a tax base of zero (10k-10k)
    - 今年已经收税，因此不减免
  - Income statement
    - No revenue and it is a liability
  - DTA
- **Warranty liability (DTA) 延迟确认支出**
  - income statement 减税
    - Firm estimate 5k warranty expense will be required on COGS
  - Tax return 不减税

        - Warranty expense is not deductible until warranty work is actually performed
    - Carrying value is 5k
    - Tax base: carrying value – deductible（明年被减免）= 0
        - 今年不减少，因为以后要减少
- Note payable (no DTA or DTL)
    - Outstanding promissory note with a balance is 30k. interest accrues at 10% and is paid at the end of each quarter
    - Treated the same in both tax return and financial statements
    - Carrying value and tax base is 30k
    - Interest paid is included in both pre-tax income on the income statement and in taxable income on the tax return

Tax Rate Change

- A decrease in the tax rate will result in a decrease in the previously reported amounts of **deferred** tax assets. That is, the value of the future tax assets, based on the new lower rate, is reduced for offsetting future tax payments.

Permanent Difference

- Difference between **taxable income** and **pre-tax income** that will **not** reverse in the future.
- Do not create DTL or DTA.
- Cause
    - Revenue/expenses not taxable
    - Tax credits that results in a direct **reduction** of tax
- Rate
    - **Statutory rate**: rate of jurisdiction where the firm operates
    - **Effective tax rate**: income tax expense / pre-tax income

Temporary Difference

- Difference between **tax base** and **carrying value** of **asset** or **liability** that will result in taxable amount or deductible amount.
- If difference is expected to **reverse** in the future and the balance sheet item is expected to provide **future** economic benefits, a DTL or DTA is created
- Type
    - **Taxable** temporary differences -> expected future **taxable** income
        - **DTL**
    - **Deductible** temporary differences -> expected future tax **deduction**
        - **DTA**

Valuation Allowance - DTA

- DTA may be not realized
    - **insufficient** future taxable amount to **recover** the tax
    - DTA is reduced by a **valuation allowance**, a contra account that reduces the net balance sheet value of DTA.
- Valuation allowance

- DTA can be increased or decreased by valuation allowance.
- Increase => DTA decrease => expense increase => earning decrease

Q. A company that prepares its financial statements using IFRS wrote down its inventory value by €20,000 at the end of year 1. In year 2, prices increased and the same inventory at the end of the year was worth €30,000 more than its value at the end of the prior year. Which of the following statements is most accurate? In year 2, the company's cost of sales:

was unaffected.
decreased by €30,000.
decreased by €20,000.

Solution
C is correct. Under IFRS, the recovery of a previous write-down is limited to the amount of the original write-down (€20,000) and is reported as a decrease in the cost of sales.