CHARTA LEARNING · LESSON NOTES

Income taxes

CFA Level I · Financial Statement Analysis

You will learn: Split tax expense into current and deferred tax, size deferred tax balances and valuation allowances, read the rate reconciliation, and compare the statutory, effective and cash tax rates.

Running example: Worked examples follow one made-up manufacturer, Cedar Ridge Industries ($ millions, tax rate 25%). A machine costs 300 with a 3 year life; profit before depreciation is 500 a year. Accounts depreciate 100 a year; the tax rules allow 150, 100, 50.

1. Current and deferred tax

- Income tax expense has two parts. Current tax is payable on this period's taxable income. Deferred tax is the tax effect of temporary differences: items recognised in different periods for accounting and tax that will reverse. IFRS and US GAAP use the same balance sheet approach.
- Permanent differences never reverse (a fine the tax office will not allow, tax-exempt interest). They create no deferred tax but change the effective rate.
- Deferred tax can be positive or negative. Less tax paid now than the profit suggests means a positive deferred expense (tax owed later); more tax paid now means a deferred benefit. Over the asset's life both books agree; year by year they do not.

Tax expense = current tax + deferred tax; current tax = taxable income × tax rate

CEDAR RIDGE YEAR ONE, AND A PERMANENT DIFFERENCE

Accounting profit before tax; taxable income	500 − 100; 500 − 150	**400; 350**
Current tax; total tax expense	350 × 25%; 400 × 25%	**87.5; 100**
Deferred tax expense	100 − 87.5	**12.5**
Current tax, years 1 / 2 / 3	expense 100 each year	**87.5 / 100 / 112.5**
Fine of 20 not deductible: taxable income	400 + 20	**420**
Tax expense; effective rate	420 × 25%; 105 ÷ 400	**105; 26.25%, no deferred tax**

Watch out: Creating deferred tax for a permanent difference.

2. Deferred tax assets and liabilities

- A deferred tax liability is a tab: tax to pay later. A deferred tax asset is a voucher: tax relief to use later. Both are measured at the rate expected when they reverse.
- Size each from the carrying amount (value in the accounts) and the tax base (value for the tax authority). For an asset, difference = carrying amount − tax base; for a liability, reverse it. A carrying amount above the tax base gives a deferred tax liability; below gives an asset.
- Liability: tax deducts faster than the books, or income is booked before it is taxed. Asset: a cost is booked before tax allows it (a warranty provision), or an unused tax loss is carried forward.
- A change in the tax rate remeasures the whole balance, and the gain or loss goes through tax expense with no cash.

Deferred tax = temporary difference × tax rate; difference (asset) = carrying amount − tax base

MACHINE BALANCE SHEET, AND A RATE CUT

End of year 1	(200 − 150) × 25%	**12.5 liability**
End of year 2	(100 − 50) × 25%	**12.5**
End of year 3	(0 − 0) × 25%	**0**
Rate cut to 20% at end of year 2	50 × 20% = 10	**falls by 2.5; tax expense −2.5**

Watch out: Getting the direction wrong: fast tax depreciation gives a liability, not an asset.

3. The valuation allowance

- A deferred tax asset is worth something only if the company earns enough taxable profit to use it. US GAAP records the asset in full, then deducts a valuation allowance if it is more likely than not (over 50%) that some will not be realised.
- IFRS has no allowance: it recognises the asset only to the extent future taxable profit is probable, reviewed every period.
- Changes in the allowance run through tax expense. Releasing it lifts net income with no cash and will not repeat. Many analysts treat a deferred tax liability that keeps growing as equity, not debt.

LOSS CARRIED FORWARD OF 120; ONLY 80 EXPECTED TO BE USED

Gross deferred tax asset	120 × 25%	**30**
Valuation allowance (US GAAP)	40 × 25%	**10**
Net asset, US GAAP; IFRS asset	30 − 10; 80 × 25%	**20; 20**
Allowance of 10 released: tax expense	200 × 25% − 10	**40 (net income 160, not 150)**
Liabilities ÷ equity (1,400 incl. DTL 70; 1,000)	1.4; (1,400 − 70) ÷ (1,000 + 70)	**1.4; about 1.24**

Watch out: Treating an allowance release as an operating improvement.

4. The effective tax rate and its reconciliation

- The effective rate is total tax expense (current plus deferred) divided by pre-tax accounting profit. The reconciliation in the notes starts with expected tax (pre-tax profit × statutory rate) and lists each item that moves actual tax away from it, in percentage points. Both standards require it.
- Structural items recur: profit earned in lower-tax countries, expenses never allowed. Check whether an incentive has an expiry date. One-offs will not: an ending tax credit, an allowance release, a prior-year settlement or adjustment, a gain taxed specially.
- A low rate caused by structure is sustainable; one caused by one-offs is not. Forecast from the reconciliation, not last year's headline rate.

> **Effective rate = tax expense ÷ pre-tax profit; expected tax = pre-tax profit × statutory rate**

CEDAR RIDGE: PRE-TAX PROFIT 1,000, TAX 170

Statutory rate (expected tax 250)		**25.0%**
Foreign profit 400 at 15%	400 × (25% − 15%)	**−4.0 points**
Non-deductible expenses 60	60 × 25%	**+1.5**
Credit, allowance release, prior year	2.5 + 2.0 + 1.0	**−5.5**
Effective rate; sustainable rate	170 ÷ 1,000; 25.0 − 4.0 + 1.5	**17.0%; 22.5%**
Forecast profit 1,200: tax at 17.0% vs 22.5%	204 vs 270	**understated by 66**

Watch out: Projecting one-off items forward.

5. Statutory, effective and cash tax rates

- Statutory rate: written in the tax law. Effective rate: tax expense ÷ pre-tax profit, which differs because of foreign income, exempt income, credits and non-deductible items. Cash tax rate: cash taxes paid (from the cash flow statement or its notes) ÷ pre-tax profit.
- The cash rate differs from the effective rate because of deferred tax and because tax can be paid in a different year from the one it relates to. Statutory to effective is explained by the reconciliation; effective to cash by deferral and payment timing.
- For earnings, start from the effective rate adjusted for non-repeating items. For cash flow, ask why the cash rate differs. While investment grows, deferral can persist; if it slows, old differences reverse and the cash rate rises above the effective rate. A low cash rate is borrowed time.

> **Cash tax rate = cash taxes paid ÷ pre-tax profit**

CEDAR RIDGE: PRE-TAX PROFIT 1,000

Statutory / effective / cash rate	25%; 170 ÷ 1,000; 115 ÷ 1,000	**25.0% / 17.0% / 11.5%**
Deferred tax expense	70 DTL increase − 20 allowance release	**50**
Current tax	170 − 50	**120**
Cash taxes paid (payable up 5)	120 − 5	**115**
Slower investment: DTL falls by 40	current tax = 225 + 40	**265**
Cash rate then	265 ÷ 1,000	**26.5%**

Key takeaways

- Tax expense = current tax + deferred tax; only temporary differences create deferred tax.
- Deferred tax = temporary difference × tax rate; fast tax depreciation gives a deferred tax liability.
- US GAAP uses a valuation allowance (more likely than not); IFRS recognises a deferred tax asset only if probable. Releases add profit, not cash.
- A change in the tax rate remeasures the balance through tax expense.
- Read the reconciliation to separate lasting items from one-offs, and forecast with the sustainable rate.
- Statutory, effective and cash rates differ: the reconciliation explains the first gap, deferral and timing the second.

Quick check

1. Tax depreciation exceeds book by 40; rate 25%. Deferred tax effect?
   Answer: DTL rises by 10; current tax is 10 below expense.
2. Pre-tax profit 500, tax expense 90, cash taxes 60. Effective and cash rates?
   Answer: 90 ÷ 500 = 18.0%. 60 ÷ 500 = 12.0%.
3. US GAAP valuation allowance falls from 15 to 5. Effect on net income?
   Answer: Tax expense falls by 10, so net income rises by 10. No cash.