

Charta Learning

Financial Ratios and DuPont, Inventory Accounting and Long-Term Assets

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Inventory Accounting

FSA.2.a · Contrast FIFO with the weighted average cost method

How do FIFO and weighted average cost differ in assigning cost?	FIFO assumes the oldest units are sold first; weighted average pools all units and applies an average cost.
With rising prices, what does FIFO do to COGS, net income and ending inventory?	Lower COGS (older, cheaper units are charged), higher net income, and ending inventory closer to current cost.
Where does weighted average land when prices rise, and what happens when prices fall?	Between FIFO and the outcome of charging newest costs first. The effects reverse when prices fall.
Why must analysts check each company's inventory method?	The choice changes reported profit without changing the underlying business, so comparison needs like-for-like methods.
Inventory and cost of goods sold	ending inventory = beginning inventory + purchases – cost of goods sold where beginning inventory = what was on hand at the start; purchases = stock bought or produced during the period; cost of goods sold = the cost of what was sold The identity behind every cost flow method. FIFO and weighted average do not change the total, only how it splits between the balance sheet and the income statement - so whatever one gains the other loses.

FSA.2.b · Contrast cost flow methods for inventory and explain the LIFO reserve

How do FIFO and LIFO assign costs?	FIFO assigns the oldest costs to COGS, leaving recent costs on the balance sheet. LIFO does the reverse and is permitted under some standards but not others.
With rising prices, what does LIFO do to COGS, profit, tax and inventory?	Higher COGS, lower reported profit, lower tax, and an understated inventory balance.
What is the LIFO reserve?	The difference between the two valuations, disclosed in the accompanying disclosures.
How do you make a LIFO reporter comparable with a FIFO one?	Add the LIFO reserve to LIFO inventory to convert the balance to a FIFO basis.

LIFO reserve	FIFO inventory = LIFO inventory + LIFO reserve where LIFO inventory = inventory as reported by a company using LIFO; LIFO reserve = the difference, disclosed in the notes How to compare a US company reporting under LIFO with one reporting under IFRS, where LIFO is not permitted. Adjusting inventory this way also requires adjusting equity, by the reserve after tax.
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FSA.2.c · Explain how inventory is carried at cost or net realisable value, whichever is lower

How is net realisable value defined for an inventory write-down?	The estimated selling price less the costs to complete and sell.
Under US GAAP, when is inventory measured at market value within a collar rather than at net realisable value?	For LIFO and the retail method, where market value is within a collar derived from net realisable value. IFRS and most other US GAAP use net realisable value.
How is an inventory write-down recognised in the income statement?	As an expense in the period, usually within cost of goods sold.
Why can a recovery in inventory value show in one company's earnings and not another's?	IFRS permits reversal of a write-down up to the original cost; US GAAP prohibits reversals.

FSA.2.d · Analyse how the choice of inventory method changes financial ratios

In a rising-price environment, how does LIFO compare with FIFO on inventory, gross profit, net income and total assets?	LIFO gives lower reported inventory, gross profit, net income and total assets, and higher cost of goods sold.
Why does inventory turnover appear higher under LIFO?	The numerator (cost of goods sold) is raised and the denominator (inventory) is lowered.
Which ratios are depressed under LIFO in a rising-price environment, and why?	The current ratio and return on assets, because of the lower inventory and lower income.
Why does return on equity fall by less than profit alone would suggest under LIFO?	Retained earnings are also lower, so equity falls too.
What must be done before comparing companies that use different inventory methods?	Convert them to a common basis first.

Financial Ratios

FSA.5.a · Work out liquidity, solvency and activity ratios and explain what they mean

What question do liquidity ratios answer, and which are examples?	Whether short-term obligations can be met: the current ratio, and the quick ratio, which strips out inventory as the least certain current asset.
What do solvency ratios address, and which are examples?	The longer term: debt-to-equity and interest coverage.
What do activity ratios measure?	How hard assets are working: inventory turnover, receivables turnover and the days figures derived from them.
Why can a rising current ratio mislead?	It is as easily a sign of unsold inventory as of improving health. Ratios must be read against the firm's history, a peer or an industry norm.
Total asset turnover	total asset turnover = revenue ÷ average total assets where revenue = sales for the period; average total assets = opening and closing total assets averaged Sales generated per unit of assets, and the middle term of the DuPont decomposition. It is only comparable within an industry: a retailer and a utility have no reason to be near each other.
Cash ratio	cash ratio = (cash + short-term investments) ÷ current liabilities where cash = cash and equivalents; short-term investments = marketable securities saleable at once; current liabilities = obligations due within a year The strictest liquidity measure: it assumes neither receivables nor inventory can be turned into cash. That is the assumption worth making in a crisis, which is when the ratio is read.

FSA.5.b · Break return on equity into its parts with DuPont analysis

What is the three-part DuPont decomposition of return on equity?	Net profit margin × asset turnover × equity multiplier, separating profitability, efficiency and leverage.
How does the five-part DuPont version extend the three-part one?	It splits the margin into a tax burden, an interest burden and an operating margin, isolating operating performance from financing and tax.
Why is the DuPont decomposition diagnostic?	Two companies with the same return on equity can get there by different routes, and leverage-driven returns differ from margin-driven ones.

DuPont decomposition of return on equity	ROE = (net income ÷ revenue) × (revenue ÷ average assets) × (average assets ÷ average equity) where net income = profit after tax; revenue = sales for the period; average assets = opening and closing total assets averaged; average equity = opening and closing shareholders' equity averaged Profitability, then efficiency, then leverage. The middle terms cancel, so it is the same ROE - the point is to say which of the three moved. A rise driven by the last term is a rise bought with debt.
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FSA.5.c · Explain where ratio analysis falls short and how segment data can be used

Why do ratios have no meaning in isolation?	They need comparison with the company's own history, peers or an industry benchmark.
Why must adjustment precede comparison across companies?	Accounting choices differ between companies.
Why can consolidated ratios mislead for a diversified company?	They can average two businesses with opposite characteristics into a figure describing neither, and there is no clean peer group.
How do segment disclosures help, and what is their limit?	They give revenue, profit and assets by business line, but segments are defined by management and can be redefined.

FSA.5.d · Work out coverage and solvency ratios and explain what they mean

What do solvency ratios measure?	The ability to meet long-term obligations.
How is interest coverage calculated?	Earnings before interest and tax ÷ interest expense.
Why is coverage usually more informative than debt to equity or debt to capital?	It relates the obligation to the cash flow that must meet it, while structural ratios compare two stock figures whose measurement bases may be decades apart.
Why must commitments and guarantees be read alongside solvency ratios?	Material obligations outside reported debt distort both coverage and structural ratios.
Interest coverage	interest coverage = EBIT ÷ interest payments where EBIT = earnings before interest and tax; interest payments = the interest due in the period How many times over the company can pay its interest out of operating profit. A solvency measure that uses the income statement rather than the balance sheet, which is why it is quoted alongside debt-to-equity rather than instead of it.

Debt-to-equity	debt-to-equity = total debt ÷ total shareholders' equity where total debt = interest-bearing debt, short and long term; total shareholders' equity = book equity, including retained earnings Book values on both sides, which is the limitation: a company whose shares trade far above book looks more leveraged here than it is. Definitions of debt differ between sources, so two published figures for the same company often disagree.
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FSA.5.e · Work out liquidity and activity ratios and explain what they mean

How do the current, quick and cash ratios differ?	Current ratio: current assets vs current liabilities. Quick ratio excludes inventory, the least reliably realisable item. Cash ratio keeps only cash and marketable securities.
What are the activity ratios that combine into the cash conversion cycle?	Days of inventory, days of receivables and days of payables.
What does the cash conversion cycle measure?	The number of days between paying for inputs and collecting from customers.
What does a negative cash conversion cycle mean?	Suppliers finance the business, a structural advantage rather than a ratio curiosity.
Current ratio	current ratio = current assets ÷ current liabilities where current assets = cash, receivables and inventory; current liabilities = obligations due within a year The broadest liquidity measure, and the least demanding: it counts inventory, which is the current asset least likely to become cash when it is needed.
Quick ratio	quick ratio = (cash + short-term investments + receivables) ÷ current liabilities where cash = cash and equivalents; short-term investments = marketable securities that can be sold at once; receivables = amounts owed by customers; current liabilities = obligations due within a year The current ratio with inventory and prepaid expenses taken out. The gap between the two ratios is the company's inventory, which is the point of computing both.
Inventory turnover	inventory turnover = cost of goods sold ÷ average inventory where cost of goods sold = the cost of what was actually sold in the period; average inventory = opening and closing inventory averaged Cost against cost: revenue in the numerator would mix a selling price with a cost and inflate the ratio. High turnover reads as efficient until it reads as stockouts.

Days of inventory on hand	DOH = $365 \div \text{inventory turnover}$ where inventory turnover = cost of goods sold $\div$ average inventory The same fact as turnover, in days, which is the form that goes into the cash conversion cycle. Every activity ratio has this pair: a number of times and a number of days.
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Financial Analysis Techniques

FSA.5.f · Explain ratios specific to particular industries and how ratios help forecast earnings

Why do industry-specific ratios exist?	General ratios travel badly between industries, so each sector has its own measures of what drives results.
Give the key ratios for retailers and hotels.	Retailers: same-store sales growth and sales per square metre. Hotels: occupancy and revenue per available room (occupancy $\times$ average daily rate).
Give the key ratios for airlines and banks.	Airlines: load factor and revenue per available seat mile. Banks: net interest margin and capital ratios such as common equity Tier 1 $\div$ risk-weighted assets.
How are ratios used to forecast earnings?	Project the operating driver (e.g. store count or room nights), apply sales per unit to reach revenue, then apply margin and expense ratios down to earnings.
What is the main risk in ratio-based forecasts?	They assume the ratios are stable, so test them against history and the company's plans.

Long-Term Assets

FSA.7.a · Explain how capitalising a cost differs in effect from expensing it

How does capitalising a cost differ from expensing it in the financial statements?	Capitalising places it on the balance sheet and releases it to income over later periods as depreciation or amortisation; expensing charges it immediately.
Does the capitalise-or-expense choice change total cash flow or cumulative profit?	No. It changes their timing and classification.
What does capitalising do to first-year profit, assets, equity and later profit?	It raises first-year profit, assets and equity, and lowers later profit.
Why does capitalising inflate reported operating cash flow?	The cash outflow moves from operating to investing activities.

FSA.7.b · Contrast depreciation methods and analyse how estimates change the results

How do straight-line, accelerated and units-of-production depreciation differ?	Straight-line charges an equal amount each year; accelerated methods such as declining balance charge more early and less later; units-of-production charges in proportion to use.
Which two management estimates matter as much as the depreciation method?	The useful life and the residual value.
What does a longer assumed useful life do to the annual charge and reported profit?	It lowers the annual depreciation charge and raises reported profit.
What is the quickest test of whether a company's depreciation estimates are conservative or generous?	Compare its average depreciation rate with its peers'.
Straight-line depreciation	depreciation each year = (cost – salvage value) ÷ useful life where cost = what the asset cost to acquire and make ready for use; salvage value = what it is expected to be worth at the end; useful life = the years it is expected to be used for Two estimates management makes, and both flatter earnings when set generously: a longer life or a higher salvage value lowers this year's expense. That is why a change in either is disclosed.
Double declining balance depreciation	depreciation = (2 ÷ useful life) × beginning book value where useful life = the years the asset is expected to be used for; beginning book value = cost less the depreciation taken so far, at the start of the year Accelerated, so early years carry more expense and later years less - the total over the asset's life is the same. Salvage value does not enter the calculation but does stop it: depreciation ceases once book value reaches it.

FSA.7.c · Explain how intangibles are amortised and how assets are impaired

Which intangibles are amortised and which are tested for impairment instead?	Finite-life intangibles are amortised over their lives. Indefinite-life intangibles and goodwill are not amortised but tested for impairment at least annually.
Which impairment loss is never reversed under IFRS or US GAAP?	A goodwill impairment loss. Impairments of other assets can be reversed under IFRS.
To what amount is an impaired asset written down under IFRS and under US GAAP?	Recoverable amount under IFRS; fair value under US GAAP. The difference is charged to income.
Why does a non-cash impairment charge still convey real information?	It is management conceding that an acquisition or asset will not deliver what was assumed.

How is a large goodwill impairment best read?	As evidence about the price paid in a past acquisition, not about the current period's operations.
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FSA.7.d · Explain the revaluation model and how assets are derecognised

Where is a revaluation increase on a long-lived asset normally recognised?	In other comprehensive income, accumulated in a revaluation surplus.
When does a revaluation increase go to income instead?	To the extent it reverses a previous decrease that was charged to income.
How is a revaluation decrease treated?	Charged to income, except to the extent it reverses a previous surplus.
How is a gain or loss on disposal of an asset measured?	The asset and its accumulated depreciation are removed; proceeds less carrying amount is the gain or loss in income.

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