

Cambridge IGCSE · Accounting 0452 · Notes

Inter-firm comparison

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Last checked 1 October 2026

Read first: [Calculation and understanding of accounting ratios](#), [Interpretation of accounting ratios](#)

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What you need to know

By the end of this topic you should be able to:

1. **Use accounting ratios to compare two businesses.** Take the same ratios for your business and a similar business (a rival, a relative's shop, the "average" for the trade), say which business is doing better on each one, and suggest why the figures differ.
2. **Understand the problems of inter-firm comparison.** Explain why two businesses' ratios may not be comparable (different accounting policies, different year-ends, a year that wasn't typical, different kinds of business and ways of working, things the accounts don't record) and so why any conclusion must be drawn with care.

Calculating the eight ratios is in the topic calculation and understanding of accounting ratios, and comparing one business's ratios over the years is in interpretation of accounting ratios. Read both first: this note builds on them and doesn't repeat the formulas.

Understand it

Why compare with another business?

Comparing a business with its own past shows whether it is getting better or worse. It doesn't show whether it is doing **well**. A trader whose profit margin rose from 6% to 7% may be pleased, until she learns that similar shops earn 12%.

Inter-firm comparison means setting the ratios of one business beside those of another business **in the same line of trade**. It helps the owner to:

- see whether the business is doing better or worse than its rivals;
- find its weak spots (prices, buying, expenses, credit control, liquidity) so that it can act on them;
- set realistic targets, such as collecting debts as fast as a rival does.

Why ratios, not amounts

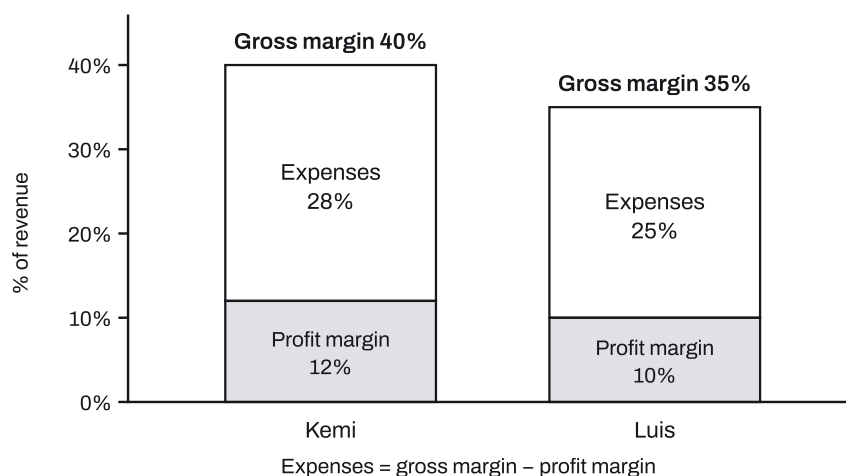
Businesses differ in size, so their amounts can't be compared directly. Take two clothing shops:

	Kemi	Luis
Revenue	\$200 000	\$80 000
Cost of sales	\$120 000	\$52 000
Gross profit	\$80 000	\$28 000
Expenses	\$56 000	\$20 000
Profit for the year	\$24 000	\$8 000
Capital employed	\$160 000	\$40 000

Kemi's profit is three times Luis's, but only because her shop is bigger. The ratios tell a different story:

Ratio	Kemi	Luis	Better
Gross margin	40.00%	35.00%	Kemi
Profit margin	12.00%	10.00%	Kemi
Expenses as % of revenue	28.00%	25.00%	Luis
Return on capital employed	15.00%	20.00%	Luis

- Kemi earns more gross profit on each \$1 of sales: she may charge higher prices, buy more cheaply (bigger orders can earn more trade discount) or sell a different mix of goods.
- Luis controls his expenses better: they take 25 cents of each \$1 of revenue, against Kemi's 28 cents.
- Luis earns 20 cents of profit a year for every \$1 invested in his shop, against Kemi's 15 cents. Measured against the money tied up, his shop is the better investment.



Because ratios are percentages, times or days, a big business and a small one **can** be compared, and a difference in selling prices is something a ratio **shows**, not something that spoils the comparison.

Reading two sets of ratios

Say which business is **better** on each ratio, then why. The direction that counts as "better" is the same as when comparing years:

- **Gross margin, profit margin, ROCE, rate of inventory turnover:** higher is better.
- **Trade receivables turnover** (days): fewer days is better; compare each with the credit terms it allows.
- **Current and liquid ratios:** the one nearer a comfortable level (roughly 2 : 1 and 1 : 1) is better; a ratio below 1 : 1 means current (or liquid) assets don't cover current liabilities.

Then **link** the ratios:

- **Same profit margin, different gross margins:** the business with the higher gross margin spends a bigger share of its revenue on expenses (gross margin — profit margin).
- **Higher gross margin, slower inventory turnover:** typical of a shop that charges higher prices and sells fewer items.
- **Current ratio higher but liquid ratio lower:** that business holds much more inventory compared with its current liabilities. With current liabilities of \$10 000, a current ratio of 2.5 : 1 and a liquid ratio of 0.9 : 1 means inventory of \$16 000.

A ratio compares two figures **inside one business**. A higher current ratio says one business covers its current liabilities more easily; it does **not** say it has fewer liabilities or more current assets in dollars.

Problems of inter-firm comparison

Two sets of ratios can only be compared fairly if they were worked out in the same way from similar businesses in similar years. Often they weren't:

Problem	Why it spoils the comparison
Different accounting policies	One business uses straight-line depreciation and the other reducing balance, or they value inventory differently. The same trading gives different profits, asset values and ratios.
Different year-ends	Figures at 31 December and at 30 June catch different seasons. A toy shop's inventory, receivables and bank balance are very different just before and just after a busy season.
One year only, or not a typical year	A rival may have had a flood, a big one-off order or a strike. Trends over several years say more than one year's figures.
Different kinds of business	A different mix of goods, a trader against a manufacturer, cash sales against credit sales, different credit terms for customers.
Different ways of running it	One owns its premises and the other pays rent; one is financed by a loan and the other by the owner's capital; one is in a busy city and the other in a small town.

Problem	Why it spoils the comparison
Things not in the accounts	The skill and loyalty of the workforce, reputation, the quality of the goods and the location aren't recorded in money, so ratios can't show them.
The information itself	A rival's detailed figures may not be available, may be out of date, or may be only summary figures.

Why do these matter? Two shops with the same trading can still show different ratios:

- **Renting against owning.** The shop that pays rent has higher expenses and a lower profit margin, but the owner of the other shop has more capital tied up in the building, which lowers his ROCE.
- **A different depreciation method** gives different depreciation, so different expenses, profit, profit margin, ROCE and net book values.
- **A different year-end** can make one shop's current ratio look far better, simply because the date falls after its busy season when its bank balance is high.

Different **selling prices, suppliers** or **sizes** are **not** problems of comparison: they are real differences in how the businesses trade, and the ratios are designed to show them. Presenting the ledger accounts in a different layout doesn't change any figures either.

Key facts and formulas

There is no formula list in the IGCSE Accounting exam, so every relationship must be learnt. The eight ratio formulas are in the topic calculation and understanding of accounting ratios.

Formula	Status
Expenses (less other income) as a % of revenue = gross margin – profit margin	Learn it
$\text{ROCE} = \frac{\text{profit before interest}}{\text{capital employed}} \times 100$, where capital employed = owner's capital + non-current liabilities	Learn it
Inventory = (current ratio – liquid ratio) × current liabilities	Learn it
Better when higher : gross margin, profit margin, ROCE, rate of inventory turnover	Learn it
Better when fewer days : trade receivables turnover (compare each business with its own credit terms)	Learn it
Ratios compare businesses of different sizes; amounts in dollars don't	Learn it
Main problems: different policies, year-ends, a non-typical year, different kinds of business or ways of working, items not recorded in money, poor information	Learn it

How to do it

We have 18 tagged questions for this topic from 2021 to 2025 (11 different, as many appear on two or three paper variants): 15 one-mark multiple-choice questions from Paper 1 and 3 twenty-mark Paper 2 questions, where one or two parts are about this topic. One Paper 2 question (0452/22/F/M/21 Q4) mixes two types, so the counts add up to 19.

Question type	Questions
Interpret two businesses' ratios (multiple choice)	9
Problems of inter-firm comparison	6
Compare with a rival and give reasons (written)	3
Calculate a ratio for two businesses (multiple choice)	1

1. Interpret two businesses' ratios (multiple choice) (9 questions)

You get a small table of ratios for two businesses and several statements; you pick the true one (or the true combination).

1. **For each ratio, decide which business is better**, using the direction rules above.
2. **Work out anything hidden**: expenses as a % of revenue = gross margin – profit margin; inventory from the gap between current and liquid ratios.
3. **Test each statement against one ratio**. Cross out any statement that the table can't prove (it talks about amounts, or a figure no ratio shows).

Variations you will meet:

- **Gross margin and inventory turnover** (for example 40% and 10 times against 25% and 16 times). A higher gross margin means higher prices or cheaper cost of sales, so "sold at lower prices" is false for that business. Fewer times a year means it sells its goods **more slowly**. Gross margin says nothing about expenses.
- **Four ratios, one true statement**. Business P: gross margin 26%, profit margin 15%; Business Q: 32% and 13%. Q's expenses are $32 - 13 = 19\%$ of revenue, P's are $26 - 15 = 11\%$, so "Q's expenses are a higher proportion of its sales" is true. A gross margin alone can't prove who has higher selling prices, since cost of sales also matters.
- **Same profit margin, different gross margins**: the one with the higher gross margin has the larger proportion of expenses. It says nothing about who made more profit in dollars.
- **Current and liquid ratios**. "Meets current liabilities from current assets more easily" means the higher current ratio; "from liquid assets" means the higher liquid ratio. A liquid ratio of 1.0 : 1 is exactly enough: liquid assets cover current liabilities. A current ratio above 1 : 1 means current assets are **sufficient**.
- **"What does comparing the current ratios show?"** Only who is more liquid. Not who has fewer liabilities, fewer current assets or more inventory.

2. Problems of inter-firm comparison (6 questions)

1. **Multiple choice:** pick the option that makes the figures **not comparable** (different accounting policies; a year that may not be typical; the skills of the workforce aren't recorded). Reject options that are simply differences in trading (different suppliers, different selling prices, different sizes) or in layout (ledger accounts presented differently). Watch the wording: "Accounting records **include** a value for the workforce's skills" is false, so it isn't a limitation; "**do not include**" is one. "Businesses **may have the same** accounting policies" isn't a problem either.
2. **"What is not a limitation?":** the odd one out is usually a trading difference, such as different selling prices.
3. **Written, "State two problems with this comparison"** (2 marks, one each): choose problems that fit the ratio in the question.

Ratio compared	Problems that fit
Trade receivables turnover	They allow different credit periods; different year-ends (receivables are higher after a busy season); one year's figures only; one sells more on credit than the other
Gross margin	Different mix of goods; different inventory valuation policies; a manufacturer against a trader
Profit margin	Different depreciation methods; one rents and the other owns its premises; one pays loan interest
ROCE	Different financing (loan against capital); owned premises raise capital employed; different depreciation changes profit
Current and liquid ratios	Different year-ends; different credit terms; one holds more inventory for its kind of trade

3. Compare with a rival and give reasons (written) (3 questions)

These are parts of a 20-mark Paper 2 question, usually after you have calculated the ratio.

"Compare ... with ..." (about 3 marks):

1. **Say which is better, in words:** "Chen's trade receivables turnover (41 days) is slower than Dara's (30 days)." Stating the two figures, or "higher", on its own earns nothing.
2. **Give reasons or effects** that fit: longer credit allowed, customers not paying on time, weak credit control; so more cash flow problems and more risk of irrecoverable debts than the rival.
3. Keep naming the business each point is about.

"State one reason why A's gross margin (or expenses) is higher" (1 mark): give a reason the scenario supports.

- **Higher gross margin:** higher selling prices; lower cost of sales (cheaper purchases for a trader, cheaper production for a farmer or manufacturer); selling different goods.

- **Lower expenses:** the other business pays rent and this one doesn't; better control of expenses; different accounting methods, such as a different depreciation method.
- "Higher sales" or "higher gross profit" does **not** explain a higher **margin**, which is a percentage.

4. Calculate a ratio for two businesses (multiple choice) (1 question)

1. **Work out the ratio for each business** with the usual formula. For ROCE, capital employed includes any long-term loan, and profit is **before** interest.
2. **Divide one by the other** to answer "double", "half", "one-third".

For example, Azra: profit before interest \$18 000, capital \$120 000, no loan: ROCE 15%. Bo: profit before interest \$10 500, capital \$25 000, long-term loan \$10 000: $\text{ROCE } 10\,500 \div 35\,000 \times 100 = 30\%$. Azra's ROCE is **half** Bo's, even though her profit is bigger.

Worked examples

Example 1

Two traders provided the following ratios.

	Nadia	Omar
gross margin	30%	38%
profit margin	8%	9%
rate of inventory turnover	12 times	8 times
liquid (acid test) ratio	0.7 : 1	1.1 : 1

Which statement is correct? [1]

A Nadia's expenses are a smaller proportion of her revenue than Omar's. B Nadia sells her goods at higher prices than Omar. C Omar sells his inventory more quickly than Nadia. D Nadia can meet her current liabilities from her liquid assets more easily than Omar.

Expenses: Nadia $30 - 8 = 22\%$ of revenue, Omar $38 - 9 = 29\%$, so A is true. B: a lower gross margin suggests **lower** prices (or dearer purchases), so it can't be shown. C: 8 times is slower than 12. D: 0.7 : 1 is weaker than 1.1 : 1. **A (1)**

Example 2

Pia and Quinn are sole traders. They provided the following information.

	Pia	Quinn
profit for the year before interest	\$18 000	\$12 000

	Pia	Quinn
long-term loan	\$30 000	–
capital	\$90 000	\$40 000

What was Pia's return on capital employed? **[1]**

A one-third of Quinn's B half of Quinn's C the same as Quinn's D double Quinn's

Pia: $18\,000 \div (90\,000 + 30\,000) \times 100 = 15\%$. Quinn: $12\,000 \div 40\,000 \times 100 = 30\%$. $15 \div 30 = \frac{1}{2}$. **B (1)**

Leaving out Pia's loan gives $18\,000 \div 90\,000 = 20\%$, which matches no option; that is the trap.

Example 3

Tariq owns a hardware shop. All his sales are on credit, and he allows customers 30 days to pay. For the year ended 31 December 2025:

	\$
Credit sales	73 000
Gross profit	29 200
Trade receivables at 31 December 2025	9 000

(a) Calculate Tariq's gross margin and his trade receivables turnover in days (round up to the next whole day). **[4]**

Tariq compares his results with those of Uma, who owns a hardware shop in another town. Uma's gross margin is 32% and her trade receivables turnover is 30 days.

(b) Compare Tariq's trade receivables turnover with Uma's. **[3]**

(c) State **two** problems with comparing Tariq's trade receivables turnover with Uma's. **[2]**

(d) State **one** reason why Tariq's gross margin is higher than Uma's. **[1]**

(a) Gross margin = $\frac{29\,200}{73\,000} \times 100$ **(1)** = 40% **(1)**.

Trade receivables turnover = $\frac{9\,000}{73\,000} \times 365$ **(1)** = 45 days **(1)**.

(b)

- Tariq's trade receivables turnover (45 days) is slower than Uma's (30 days) **(1)**.
- His customers are taking 15 days longer than the 30 days he allows, so his credit control may not be efficient **(1)**.
- He is more likely than Uma to have cash flow problems and irrecoverable debts **(1)**.

(c) Any two **(1)** each:

- Uma may allow her customers a different credit period.
- Uma may have a different year-end, when her receivables are at a different level.
- The figures are for one year only; trends over several years would be more reliable.
- Uma may sell partly for cash, so her figures are not worked out on the same basis.

(d) Tariq may charge higher selling prices, or buy his goods more cheaply, for example with more trade discount (1).

"Tariq has higher sales" earns nothing: a margin is a percentage, and Tariq's revenue could be the smaller one.

Common mistakes

- **Repeating the figures instead of comparing them.** "Tariq's is 45 days and Uma's is 30 days" earns nothing on its own. Say which business is **better**, then why the difference may have happened.
- **Giving problems of comparison that don't fit the ratio.** Examiners found many answers listing general problems, or using depreciation methods as the example of different policies when the ratio compared was trade receivables turnover (which depreciation doesn't touch). Choose problems that affect the ratio in the question.
- **Explaining a higher margin with "higher sales" or "higher gross profit".** A margin is a percentage of revenue; more sales at the same prices leaves it unchanged. Give selling prices, cost of sales or the mix of goods.
- **Reasons the scenario doesn't support.** "Lower purchase price" doesn't fit a farmer who grows his produce; "the other farmer paid higher wages" can't be seen from the data. Use what the question tells you, such as one business paying rent.
- **Calling different selling prices a limitation.** They are a real difference in trading, and ratios are designed to show it.
- **Reading amounts from ratios.** A higher current ratio doesn't mean fewer liabilities or more current assets in dollars; the same profit margin doesn't mean the same profit.
- **Thinking consistency makes two businesses comparable.** Consistency means one business uses the same methods year after year, so its **own** years can be compared. It does not make its figures match another business's.
- **Leaving the loan out of capital employed** when working out ROCE for two businesses.

How to get the marks

- **"Compare"**: which business is better (or worse), in words, then a reason or an effect. About 1 mark for the comparison and 1 for each valid point, up to the total.
- **"State"**: one short, precise point each; no explanation needed. "State two problems" wants two **different** problems.
- **Fit the scenario.** Answers that name the businesses and use their figures and circumstances earn the marks; general lists often don't.

- **Show the formula** in a calculation: the working earns a mark even if the arithmetic slips, and later parts are marked on your own figures.
- **Rounding**: follow the question, such as "round up to the next whole day" or "to two decimal places".
- **Multiple choice**: turn each statement into a claim about one ratio, and check the direction (higher, lower, more days, fewer times) before you choose.

Quick check

1. State **three** problems of comparing the ratios of two businesses.
2. Firm V has a current ratio of 1.8 : 1 and a liquid ratio of 0.6 : 1. Firm W has a current ratio of 1.5 : 1 and a liquid ratio of 1.1 : 1. Each has current liabilities of \$20 000. Which firm can more easily pay its current liabilities from its liquid assets? Calculate each firm's inventory.
3. Xavi's profit before interest was \$21 000 and his capital \$140 000, with no loans. Yara's profit before interest was \$9 000; her capital was \$50 000 and she has a long-term loan of \$10 000. Calculate each ROCE and compare them.
4. Two cafés each have revenue of \$120 000 and a gross margin of 35%. Café A's profit margin is 15% and Café B's is 9%. Calculate each café's expenses. Café B rents its building; Café A's owner owns hers. Why might the comparison be unfair?
5. Explain why "the two businesses have different selling prices" is not a limitation of inter-firm comparison.

Answers

- Any three: they may use different accounting policies (such as depreciation methods or inventory valuation); they may have different year-ends; the figures may be for one year that wasn't typical; they may sell different goods or trade differently (credit terms, owned or rented premises, loans or capital); things like workforce skills and reputation aren't recorded in the accounts; a rival's figures may be unavailable or out of date.
- W:** 1.1 : 1 is stronger than 0.6 : 1; W's liquid assets more than cover its current liabilities, V's cover only 60% of them. Inventory = (current ratio – liquid ratio) × current liabilities: V $1.2 \times 20\,000 = \$24\,000$; W $0.4 \times 20\,000 = \$8\,000$.
- Xavi: $21\,000 \div 140\,000 \times 100 = 15.00\%$. Yara: $9\,000 \div (50\,000 + 10\,000) \times 100 = 15.00\%$. They earn the same return on the money invested, although Xavi's profit is more than twice Yara's.
- Gross profit is $0.35 \times 120\,000 = \$42\,000$ for each. Expenses: A $42\,000 - 18\,000 = \$24\,000$ (20% of revenue); B $42\,000 - 10\,800 = \$31\,200$ (26%). B's expenses include rent, which A doesn't pay, so B may control its costs just as well; A's owner instead has more capital tied up in the building.
- Ratios are percentages, times or days, not amounts, so different prices don't stop the two being compared. A price difference is a real difference in trading, which the gross margin is meant to reveal.

Past questions to try

- 0452/22/F/M/21 Q4:** calculate trade receivables turnover, compare it with a rival's and state two problems with the comparison.
- 0452/12/F/M/22 Q34:** return on capital employed for two sole traders, one with a loan.
- 0452/12/O/N/21 Q32:** which statement about two traders' four ratios is correct.
- 0452/13/M/J/21 Q33:** two companies with the same profit margin but different gross margins.