Currency translation methods

Financial Statement Analysis

1 A parent with factories abroad

- Marlowe Industries: a US parent that reports in dollars
- Two factories in the Czech Republic keep local books
- One set of group accounts, in one currency
- The method decides whether rate moves hit profit

IN THE LESSON

- Picture a family firm in Ohio called Marlowe Industries.
- It makes garden tools, and it owns two small factories in the Czech Republic.
- Every month the factories send back figures in Czech koruna.
- Yet the head office must publish one set of accounts, and it must do so in dollars.
- So somebody has to decide how koruna figures become dollar figures.
- That choice is not just arithmetic.
- Depending on the method, an exchange rate move can reach the profit line, or it can skip past it and sit quietly in equity.
- As an investor you need to know which has happened, because it changes the earnings you are paying for.
- Let us name the currencies involved.

2 Three currencies, three questions

Which currency answers which question

Currency	Set by
Local: where is the entity?	Location
Functional: where is the cash?	Economics
Presentation: group accounts	Parent
Any other currency used	Foreign

IN THE LESSON

- Three currencies matter, and it helps to attach a question to each.
- The local currency is simply the money of the country where the entity is located.
- For a factory in the Czech Republic, that is the koruna.
- The functional currency is the money of the entity's primary economic environment, the one in which it mostly earns and spends cash.
- The presentation currency, sometimes called the reporting currency, is the one the parent uses for its group accounts.
- For Marlowe that is the dollar.
- Any other currency an entity deals in is a foreign currency, and dealing in one is a foreign currency transaction.
- Local is about geography.
- Functional is about economics.
- Presentation is the parent's choice.

3 How to judge the functional currency

- Currency of sales prices and of competition
- Currency of costs: wages, rent, materials
- Currency of financing, and of cash kept on hand
- How much it depends on the parent day to day
- Weigh them all: a judgement, not an address

IN THE LESSON

- How do you decide the functional currency?
- Ask where the business really lives.
- If its customers pay in one currency and its competitors set prices in it, that is a strong sign.
- If its wages, rent and materials are paid in a currency, that is another sign.
- If it borrowed in a currency and keeps its spare cash there, that is a third.
- Last, ask how closely it works with the parent.
- A subsidiary that simply passes along the parent's products, funded by the parent, behaves like a branch of the parent.
- Management weighs all of these signs, and the answer is a judgement, not a rule that follows from the address.
- It can easily differ from the local currency.

4 Example 1: two subsidiaries, one country

Both sit in the Czech Republic; the parent reports in dollars

Local currency of both	where they are located	**koruna**
Brno sells, pays, borrows in	Czech customers and banks	**koruna**
Brno functional currency	same as local	**koruna**
Plzen prices, parts, loan in	dollars, from the parent	**dollars**
Plzen functional currency	not the local one	**dollar**

IN THE LESSON

- Here is the case.
- Marlowe has two subsidiaries, and both sit in the Czech Republic, so the local currency for both is the koruna.
- The first, Marlowe Brno, sells to Czech customers in koruna, pays its staff and suppliers in koruna, and borrows from Czech banks.
- Its functional currency is the koruna, the same as its local currency.
- The second, Marlowe Plzen, is quite different.
- It prices its sales in dollars, buys its parts from the parent, and is funded by a dollar loan from the parent.
- Its books are kept in koruna because local law says so, but its functional currency is the dollar.
- Same country, same local currency, different functional currencies.
- That is the trap in this outcome.

5 The functional currency picks the method

Functional currency is the local one (Brno)

Books kept in koruna → Translate: current rate method → Difference to OCI, in equity

Functional currency is the parent's (Plzen)

Books kept in koruna → Remeasure: temporal method → Gain or loss in profit

IN THE LESSON

- Why does it matter?
- Because the functional currency decides the accounting.
- Look at the top row.
- When the functional currency is the local currency, the books stay in that currency, and at reporting time the statements are translated into the presentation currency using the current rate method.
- The exchange difference that results goes to other comprehensive income, which we will call O C I, and builds up in equity.
- Now the bottom row.
- When the functional currency is the parent's, the local currency figures are remeasured into it using the temporal method, and the exchange difference goes straight through profit or loss.
- We will work through both methods in detail near the end.
- For now, remember the order: judge the functional currency first, then pick the method.

6 Selling in a currency that is not yours

- Invoice in euros; the dollar is the functional currency
- A fixed number of euros, a changing dollar value
- Exposure runs from transaction date to settlement
- Receivables, payables and loans all count

IN THE LESSON

- Now a different question.
- Marlowe sells goods to a customer in Germany and sends an invoice in euros, with payment due in ninety days.
- Marlowe's functional currency is the dollar.
- From the day it sends the invoice until the day cash arrives, Marlowe holds a promise of a fixed number of euros.
- The number of euros cannot change.
- But what they are worth in dollars can change every single day.
- That is foreign currency transaction exposure.
- It arises whenever a company sells, buys or borrows on credit in a currency that is not its functional currency.
- The exposure lasts from the transaction date until settlement.
- Let us see how the accounts treat it.

7 The transaction gain or loss

Receivable: gain = amount × (new − old)
Payable: gain = −amount × (new − old)

Foreign currency amount	Fixed number of foreign units
Old rate	Rate at the last booking
New rate	Rate at year end or settlement
Gain or loss	Recognised in profit or loss

IN THE LESSON

- The calculation is simple once you hold on to one rule: rates are stated as functional currency per unit of foreign currency.
- Take the amount in foreign currency and compare its value at the new rate with its value at the old rate.
- For a receivable, which is an asset, the gain equals the foreign amount times the new rate minus the old rate.
- A higher rate means more dollars, which is a gain.
- For a payable, which is a liability, the sign flips.
- A higher rate means you owe more dollars, which is a loss.
- At every balance sheet date, and again at settlement, the item is restated at the current rate, and the difference goes to profit or loss.

8 Example 2: an exporter with a receivable

Sale of 2.0m euros on 1 Nov; dollars per euro 1.10, 1.16, 1.13

1 Nov: sale and receivable	2.0m × 1.10	**$2,200,000**
31 Dec: restated	2.0m × 1.16	**$2,320,000**
Gain in this year's profit	2,320,000 − 2,200,000	**+$120,000**
31 Jan: cash received	2.0m × 1.13	**$2,260,000**
Loss in next year's profit	2,260,000 − 2,320,000	**−$60,000**

Whole deal: +$60,000, split across two years

IN THE LESSON

- First example, an exporter.
- On the first of November Marlowe sells goods for two million euros on credit.
- The rate is one dollar ten per euro, so Marlowe records revenue and a receivable of two million, two hundred thousand dollars.
- Its year ends on the thirty first of December, when the rate is one dollar sixteen.
- The receivable is restated to two million, three hundred and twenty thousand dollars.
- The difference, one hundred and twenty thousand dollars, is a gain, and it goes into this year's profit, even though no cash has moved.
- On the thirty first of January the customer pays, when the rate is one dollar thirteen.
- Marlowe receives two million, two hundred and sixty thousand dollars, so next year shows a loss of sixty thousand.

9 The same receivable at three dates

Value of the receivable ($ thousand)

1 Nov	**$2.20m**
31 Dec	**$2.32m**
31 Jan	**$2.26m**

The euro amount never changed: two million

IN THE LESSON

- Here is the same story as bars.
- Three dates run along the bottom, and the height is the dollar value of the same two million euros.
- On the first of November the receivable is worth two point two million dollars.
- By the year end it has grown to two point three two million, because the euro strengthened.
- By the day the customer pays, the euro has slipped back, and the cash received is two point two six million.
- The revenue was booked at the first bar.
- Everything after that is a currency gain or loss.
- Over the whole deal Marlowe gains sixty thousand dollars, but that gain is split across two reporting years, a big gain first and a smaller loss later.

10 Who gains when the foreign currency moves

Measured in the company's functional currency

Position held	If it rises
Receivable (exporter)	Gain
Payable (importer)	Loss
Loan in foreign currency	Loss
Foreign currency cash	Gain

IN THE LESSON

- Here is a quick way to remember the signs.
- Everything is measured in the company's own functional currency.
- If you are owed foreign currency, you are happier when it rises.
- So an exporter with a receivable gains when the foreign currency strengthens, and loses when it weakens.
- If you owe foreign currency, you are unhappier when it rises.
- So an importer with a payable loses when the foreign currency strengthens, and gains when it weakens.
- Borrowing in a foreign currency works just like a payable.
- Holding foreign currency cash works like a receivable.
- The pattern crosses over diagonally.
- Exam questions often give you the rate move and ask only for the sign, so practise saying it out loud.

11 Example 3: an importer with a payable

Purchase of 500,000 francs on 1 Dec; dollars per franc 1.10, 1.14, 1.12

1 Dec: purchase and payable	500,000 × 1.10	**$550,000**
31 Dec: restated	500,000 × 1.14	**$570,000**
Loss in this year's profit	570,000 − 550,000	**−$20,000**
Payment: cash paid	500,000 × 1.12	**$560,000**
Gain in next year's profit	570,000 − 560,000	**+$10,000**

Whole deal: a $10,000 loss

IN THE LESSON

- Second example, an importer.
- On the first of December Marlowe buys parts from a Swiss supplier for five hundred thousand Swiss francs, payable in February.
- The rate is one dollar ten per franc, so Marlowe records a payable of five hundred and fifty thousand dollars.
- At the year end the franc has risen to one dollar fourteen, so the payable is restated to five hundred and seventy thousand dollars.
- That is a loss of twenty thousand dollars in this year's profit.
- In February Marlowe pays when the rate is one dollar twelve, which costs five hundred and sixty thousand dollars.
- The franc has eased, so next year records a gain of ten thousand.
- Over the whole deal the importer is ten thousand dollars worse off.

12 Where the gain sits changes the margin

Sales $10.0m; operating profit $1.0m before a $120,000 gain

Margin with no gain counted	1.00m ÷ 10.0m	**10.0%**
Firm A: gain inside operating	1.12m ÷ 10.0m	**11.2%**
Firm B: gain below the line	1.00m ÷ 10.0m	**10.0%**
Gap caused by placement alone	11.2% − 10.0%	**1.2 points**

IN THE LESSON

- Now a point that matters when you compare companies.
- Neither I F R S nor U S G A A P says in which line of the income statement the transaction gain or loss must appear.
- Some companies put it in operating profit, others put it below, with finance costs.
- Take sales of ten million dollars and an operating profit of one million before the one hundred and twenty thousand dollar currency gain from our exporter.
- The first company puts the gain inside operating profit, so its margin is eleven point two per cent.
- The second puts it below the line and shows ten per cent.
- The business is identical.
- Only the placement differs.
- So when you compare operating margins, check where each company shows currency items, and adjust.

13 Disclosure, and the timing trap

- Differences go to profit or loss as the rate moves
- The amount is disclosed; the line it sits in varies
- Adjust margins before comparing companies
- Trap: waiting for cash to settle before booking

IN THE LESSON

- To sum up this part.
- Both frameworks require the exchange differences recognised in profit or loss to be disclosed, so you can find the amount in the notes, though the line they sit in varies by company.
- They are mostly unrealised until the cash moves, so a good analyst asks whether such gains will repeat.
- The big trap is timing.
- Candidates assume the gain is booked when the customer pays.
- It is not.
- It is booked at each balance sheet date, as the rate moves, before any cash moves, and then the final difference is booked at settlement.
- In our example, a gain of one hundred and twenty thousand dollars appeared in the year of the sale, and a loss of sixty thousand the year after.

14 Growth that is not the business

- Growth in local currency: the business itself
- Currency move: the translation, not the business
- Reported growth is a blend of the two
- A strong subsidiary can still look weak

IN THE LESSON

- Imagine you work for a company in Sweden, and your salary rises ten per cent.
- That sounds good.
- But suppose you measure your wealth in dollars, and the krona has dropped fifteen per cent against the dollar.
- In dollars, you are worse off.
- The same thing happens to a parent when it reports a foreign subsidiary's sales.
- Reported sales growth is a mixture of two things: how much the business grew in its own currency, and how much that currency moved against the presentation currency.
- A subsidiary can be doing very well and still look like it is shrinking in the parent's accounts.
- Analysts need to separate the two.

15 Translated growth and constant currency

Translated growth = (1 + local growth) × (1 + currency change) − 1

Local growth	Growth in own currency
Currency change	Change in parent per foreign rate
Translated growth	Growth the parent reports
Constant currency growth	This year at last year's rate

IN THE LESSON

- Here is the formula.
- Translated sales growth equals one plus local currency growth, times one plus the change in the value of the foreign currency, minus one.
- We multiply rather than add, because the currency change applies to sales that have already grown.
- The change in the currency is measured using the rate quoted as presentation currency per unit of foreign currency.
- So for a dollar parent and a krona subsidiary, use dollars per krona.
- A rise in that number means the krona strengthened.
- If we want to strip out the currency, we restate this year's sales at last year's rate.
- That gives constant currency growth, which equals local currency growth.

16 Example 4: a weaker krona

Sales 800m then 880m kronor; dollars per krona 0.100 then 0.085

Last year, in dollars	800 × 0.100	**$80.0m**
This year, in dollars	880 × 0.085	**$74.8m**
Local growth	880 ÷ 800 − 1	**+10.0%**
Currency change	0.085 ÷ 0.100 − 1	**−15.0%**
Translated growth	1.10 × 0.85 − 1	**−6.5%**

IN THE LESSON

- Marlowe also owns a Swedish subsidiary.
- Its sales were eight hundred million kronor last year and eight hundred and eighty million this year, which is ten per cent growth in local currency.
- The average rate was ten cents per krona last year, and eight and a half cents this year.
- Last year's sales in dollars were eighty million.
- This year's are eight hundred and eighty million times zero point zero eight five, which is seventy-four point eight million.
- The krona's value changed by minus fifteen per cent.
- Multiply one point one zero by zero point eight five and you get zero point nine three five.
- Translated growth is minus six point five per cent, though the business grew ten per cent.

17 Stripping the currency out

Subsidiary sales ($m)

Last year	**$80.0m**
Constant currency	**$88.0m**
As reported	**$74.8m**

Currency effect: 74.8 − 88.0 = −$13.2m

IN THE LESSON

- Here is the same case as bars, in millions of dollars.
- The first bar is last year's Swedish sales, eighty million.
- The middle bar is this year's sales restated at last year's rate: eight hundred and eighty million kronor times ten cents is eighty-eight million.
- That is constant currency, and the business grew ten per cent.
- The third bar is what the parent actually reports, seventy-four point eight million.
- The gap between the second and third bars is the currency effect, minus thirteen point two million.
- Analysts often quote the constant currency figure to show how the business is doing, and the reported figure to show what the parent actually booked.
- You should know how to move from one to the other.

18 Example 5: the effect on the parent

Dollar sales of the rest of the group grew 3%; all in $m

Other sales, up 3%	520 × 1.03	**$535.6m**
Group sales, last year	520 + 80.0	**$600.0m**
Group sales, reported	535.6 + 74.8	**$610.4m**
Group growth, reported	610.4 ÷ 600 − 1	**+1.7%**
Group growth, constant currency	(535.6 + 88.0) ÷ 600 − 1	**+3.9%**

IN THE LESSON

- Now the parent's view.
- Marlowe's other sales, all in dollars, were five hundred and twenty million last year and grew three per cent, to five hundred and thirty-five point six million.
- Group sales last year were six hundred million, which is five hundred and twenty plus eighty.
- This year, adding the Swedish sales translated at seventy-four point eight, they are six hundred and ten point four million.
- Reported group growth is one point seven per cent.
- Now restate the Swedish sales at last year's rate, eighty-eight million.
- Group sales become six hundred and twenty-three point six, and constant currency growth is three point nine per cent.
- The weak krona cost the group about two point two points of growth.

19 Example 6: the quote the wrong way round

The same move, quoted two ways

Dollars per krona, last year		**0.100**
Dollars per krona, this year		**0.085**
Kronor per dollar, last year	1 ÷ 0.100	**10.00**
Kronor per dollar, this year	1 ÷ 0.085	**11.76**
Wrong use: 1.10 × 1.176 − 1	krona seems to rise	**+29.4%**

The right answer is −6.5%: flip the quote first

IN THE LESSON

- Here is where candidates lose marks: quoting the rate the wrong way round.
- Our krona rate was zero point one zero zero dollars per krona last year, and zero point zero eight five this year.
- Invert both to get kronor per dollar: ten kronor last year and eleven point seven six this year.
- Look at that quote.
- The number went up by seventeen point six per cent.
- If you carelessly put this into the formula, you would multiply one point one zero by one point one seven six and conclude that sales grew twenty-nine point four per cent.
- In fact the krona fell.
- The formula needs presentation currency per unit of foreign currency.
- If you are given the other quote, flip it first.
- Always ask: is this dollars per krona, or kronor per dollar?

20 Four mistakes so far

- 1. Booking the gain only when the cash is settled
- 2. Calling the local currency the functional one
- 3. Adding growth and currency effects, not multiplying
- 4. Quoting the rate the wrong way round
- Bonus: the wrong sign for a payable

IN THE LESSON

- Pause for the mistakes so far.
- One, booking the transaction gain only when cash is settled.
- It is booked at every balance sheet date.
- Two, assuming the local currency is the functional currency.
- A subsidiary that prices and finances in the parent's currency may have the parent's currency as its functional currency.
- Three, adding growth rates.
- Ten per cent growth and a fifteen per cent currency fall do not give minus five.
- You multiply, and get minus six point five.
- Four, quoting the rate the wrong way round, which flips the sign of the effect.
- And a bonus: mixing up the sign for a payable.
- A stronger foreign currency hurts anyone who owes it.
- Keep these in mind as we move to the main event.

21 Two ways of looking at a foreign branch

- Separate business abroad: current rate method
- Extension of the parent: temporal method
- The functional currency decides which view applies
- Difference goes to OCI, or to profit or loss

IN THE LESSON

- Now the main event.
- A parent has to turn a subsidiary's whole set of statements into its own currency.
- Think of two ways of looking at a foreign branch.
- In the first, the branch is a separate business living in its own country, and the parent simply holds an investment in it.
- Then you convert everything at today's prices and treat the shift as a change in the value of that investment.
- In the second, the branch is just part of the parent, doing its selling and buying abroad.
- Then you ask what each item cost in the parent's money when it was acquired.
- The first view is the current rate method.
- The second is the temporal method.
- Each follows from the functional currency.

22 The current rate method: the rules

Functional currency is the subsidiary's own

Item	Translated at
All assets and liabilities	Closing
Income and expenses	Average
Share capital	Historical
Difference, in equity	To OCI

IN THE LESSON

- Take the current rate method first.
- It applies when the subsidiary's functional currency is its own.
- All assets and liabilities are translated at the closing rate, the rate on the balance sheet date.
- Income and expenses are translated at the average rate for the year, which stands in for the rate on each day.
- Share capital and other equity put in at the start are kept at the historical rate, the rate when they were issued.
- Because the rates differ, the balance sheet will not balance on its own.
- The balancing figure is the translation adjustment.
- It goes to other comprehensive income and builds up in equity, so it never touches net income.
- The exposure is the whole of net assets.

23 The temporal method: the rules

Functional currency is the parent's

Item	Remeasured at
Monetary items	Closing
Non-monetary items, their costs	Historical
Sales, other expenses	Average
Difference, in profit	To P&L

IN THE LESSON

- Now the temporal method.
- It applies when the functional currency is the parent's, and under U S G A A P also when the subsidiary is in a highly inflationary economy.
- It starts with a split.
- Monetary items, such as cash, receivables, payables and debt, are fixed amounts of money, so they are remeasured at the closing rate.
- Non-monetary items, such as inventory and fixed assets, are kept at the historical rates when they were bought.
- Their related expenses, cost of goods sold and depreciation, follow them at those historical rates.
- Sales and most other expenses are at the average rate.
- The balancing figure here is a remeasurement gain or loss, and it goes through profit or loss.
- The exposure is only the net monetary items.

24 Example 7: the rates (set-up)

Dollars per unit of the subsidiary's currency (FC)

Start of year: capital, plant	**1.00**
Average for the year	**0.95**
Closing rate	**0.90**
Inventory was bought at	**0.94**
Cost of goods sold at	**0.97**

IN THE LESSON

- Time for the full example, so that the two methods can be compared on the same numbers.
- A subsidiary reports in units of foreign currency, and the parent reports in dollars.
- All rates are in dollars per unit of foreign currency.
- The subsidiary was set up on the first day of the year, when the rate was one dollar.
- Its share capital was issued then, and its plant was bought then.
- The average rate for the year is ninety-five cents, and the closing rate is ninety cents, so the foreign currency has weakened.
- The closing inventory was bought when the rate was ninety-four cents, and the goods sold during the year are translated at a historical rate of ninety-seven cents.
- Keep these five rates handy.

25 Example 7: the balance sheet in FC

Closing balance sheet, in FC

Cash and receivables	monetary	**FC 500**
Inventory	not monetary	**FC 400**
Fixed assets	not monetary	**FC 600**
Payables and debt	monetary	**FC 800**
Equity	capital 500 + profit 200	**FC 700**

IN THE LESSON

- Here is the closing balance sheet in units of foreign currency.
- Cash and receivables, which are monetary, come to five hundred.
- Inventory is four hundred and fixed assets six hundred, and neither is monetary.
- Total assets are fifteen hundred.
- On the other side, payables and debt, all monetary, are eight hundred.
- That leaves equity of seven hundred, made up of share capital of five hundred, issued at the start, and retained profit of two hundred.
- No dividend was paid.
- Notice that the monetary assets of five hundred are smaller than the monetary liabilities of eight hundred.
- So the subsidiary has net monetary liabilities of three hundred, and we will see why that matters.

26 Example 7: the income statement in FC

Income statement for the year, in FC

Item	FC
Sales	2,000
Cost of goods sold	1,200
Depreciation 100 + other 500	600
Net income	200

IN THE LESSON

- And now the income statement for the year, still in units of foreign currency.
- Sales were two thousand.
- Cost of goods sold was twelve hundred.
- Depreciation was one hundred and other expenses were five hundred, together six hundred.
- Net income is therefore two hundred, which is the retained profit we just saw.
- Check it: two thousand, less twelve hundred, less one hundred, less five hundred, leaves two hundred.
- Nothing about these figures changes with the method.
- Only the rates applied to them change.
- Now we are ready to translate, first by the current rate method and then by the temporal method, and compare the answers.

27 Example 7: current rate method

Current rate method, in dollars

Assets	1,500 × 0.90	**$1,350**
Liabilities	800 × 0.90	**$720**
Share capital	500 × 1.00	**$500**
Retained profit	200 × 0.95	**$190**
Translation adjustment, OCI	balancing figure	**−$60**

Net income $190; net assets $630

IN THE LESSON

- Current rate method first.
- Total assets of fifteen hundred at the closing rate of ninety cents give thirteen hundred and fifty dollars.
- Liabilities of eight hundred give seven hundred and twenty.
- Share capital stays at its historical rate of one dollar, so five hundred.
- On the income statement, everything goes at the average rate of ninety-five cents.
- Net income of two hundred becomes one hundred and ninety dollars, and with no dividend that is the retained profit.
- Now see whether it balances.
- Assets less liabilities leave six hundred and thirty.
- Capital plus profit is six hundred and ninety.
- The gap is minus sixty, the translation adjustment, which goes to O C I.
- A check: opening net assets of five hundred times the ten cent fall is minus fifty, and the five cent rate difference on the profit of two hundred adds minus ten.

28 Example 7: temporal, the income statement

Temporal method, income statement, in dollars

Sales	2,000 × 0.95	**$1,900**
Cost of goods sold	1,200 × 0.97	**$1,164**
Depreciation	100 × 1.00	**$100**
Other expenses	500 × 0.95	**$475**
Net income before the gain	1,900 − 1,164 − 100 − 475	**$161**

IN THE LESSON

- Now the temporal method, income statement first.
- Sales of two thousand at the average rate give nineteen hundred dollars.
- Cost of goods sold uses the historical rate of ninety-seven cents, so twelve hundred becomes eleven hundred and sixty-four.
- Depreciation follows the fixed assets and uses one dollar, so one hundred.
- Other expenses of five hundred at the average rate are four hundred and seventy-five.
- Net income before any remeasurement is nineteen hundred, less eleven sixty-four, less one hundred, less four seventy-five, which is one hundred and sixty-one dollars.
- Compare that with one hundred and ninety under the current rate method.
- The gross profit is smaller, because the cost of goods sold carries a higher historical rate than the average.

29 Example 7: temporal, the balance sheet

Temporal method, balance sheet, in dollars

Monetary assets	500 × 0.90	**$450**
Inventory	400 × 0.94	**$376**
Fixed assets	600 × 1.00	**$600**
Liabilities, all monetary	800 × 0.90	**$720**
Remeasurement gain, to profit	balancing figure	**+$45**

Net income 161 + 45 = $206; equity $706

IN THE LESSON

- Now the balance sheet.
- Monetary assets of five hundred at the closing rate are four hundred and fifty dollars.
- Inventory of four hundred at ninety-four cents is three hundred and seventy-six.
- Fixed assets stay at one dollar, so six hundred.
- Total assets are fourteen hundred and twenty-six.
- Liabilities, all monetary, are eight hundred at ninety cents, seven hundred and twenty.
- Share capital is five hundred.
- So retained profit must be fourteen twenty-six, less seven twenty, less five hundred, which is two hundred and six.
- We only earned one sixty-one, so the other forty-five is the remeasurement gain, and it goes into profit.
- It makes sense: the subsidiary owes three hundred more than it holds in money, and the currency fell, so its net debt became cheaper in dollars.

30 Reported profit under each method

Net income ($)

Current rate	**$190**
Temporal, no gain	**$161**
Temporal, total	**$206**

Current rate: the $60 fall goes to OCI, not profit

IN THE LESSON

- Let us compare the profit the parent reports from this one subsidiary.
- Under the current rate method it is one hundred and ninety dollars, and the currency fall of sixty sits in equity, outside profit.
- Under the temporal method the operating result is lower, at one hundred and sixty-one, but the remeasurement gain of forty-five lifts reported profit to two hundred and six.
- Same subsidiary, same underlying business, same exchange rates.
- Two different answers, and the temporal result is exposed to every swing of the exchange rate.
- If the currency had risen instead, the same exposure would have produced a loss in profit.
- That is why analysts say the temporal method makes earnings more volatile.

31 Ratios under the two methods

Same subsidiary, same rates: current rate vs temporal

Ratio	Current vs temporal
Gross margin	40.0% vs 38.7%
Net margin	10.0% vs 10.8%
Debt to equity	1.14 vs 1.02
Equity, dollars	630 vs 706

IN THE LESSON

- Now the effect on ratios.
- Under the current rate method, assets and liabilities move together, so the balance sheet keeps its shape.
- Gross margin is forty per cent, the same as in foreign currency units.
- Under the temporal method, the higher historical rate on cost of goods sold squeezes the gross margin to thirty-eight point seven per cent.
- Net margin goes the other way, ten per cent against ten point eight, because of the gain.
- Debt to equity is one point one four in foreign currency units and under the current rate method, since liabilities and equity are both at the closing rate.
- Under the temporal method it falls to one point oh two, because equity is higher.
- Equity itself is six hundred and thirty dollars against seven hundred and six.

32 Which method fits which situation

Judge by the functional currency, not the address

Situation	Method
Sells, costs, loans in local money	Current rate
Prices and funding from parent	Temporal
US GAAP, highly inflationary	Temporal
Judged by location alone	Wrong test

IN THE LESSON

- So which method applies?
- Always start from the functional currency, never from the address.
- If the subsidiary sells, buys and borrows in its own currency, operating on its own, the functional currency is the local one, so use the current rate method.
- If it prices and finances in the parent's currency and acts as an extension of the parent, the parent's currency is functional, so use the temporal method.
- Under U S G A A P, a subsidiary in a highly inflationary economy, usually one with cumulative inflation around one hundred per cent over three years, is also remeasured with the temporal method.
- Back to Marlowe: Brno gets the current rate method.
- Plzen gets the temporal method.
- The wrong test is where the subsidiary is located.

33 Recap: the ideas to remember

Gain = amount × (new − old)
Growth = (1 + local) × (1 + currency) − 1

Gain or loss	Booked at each date, to profit
Translated growth	Rate: parent per foreign unit
Current rate method	Net assets exposed; to OCI
Temporal method	Net monetary exposed; to profit

IN THE LESSON

- Let us pull the lesson together.
- A transaction gain or loss equals the foreign amount times the change in the rate, with the sign flipped for a payable, and it goes to profit as the rate moves, not when cash is settled.
- Translated growth equals one plus local growth, times one plus the currency change, minus one, using presentation currency per unit of foreign currency.
- Under the current rate method, net assets are exposed, assets and liabilities go at the closing rate, income at the average, and the difference goes to O C I.
- Under the temporal method, only net monetary items are exposed, non-monetary items stay at historical rates, and the remeasurement gain or loss goes through profit.

34 Try three quick questions

1. A £ firm owes $400,000; £ per $ was 0.80, now 0.76. Gain or loss?
   Answer: Payable 320,000 → 304,000: a gain of £16,000.
2. Local sales up 5%; the currency falls 8% against the parent's. Translated growth?
   Answer: 1.05 × 0.92 − 1 = −3.4%
3. Net monetary liabilities FC 200; FC falls from $2.00 to $1.80. Temporal result?
   Answer: 200 × 0.20 = a $40 gain, in profit.

IN THE LESSON

- Now three quick questions.
- Question one.
- A firm with sterling as its functional currency owes four hundred thousand dollars.
- Pounds per dollar was zero point eight zero at purchase and is now zero point seven six.
- Gain or loss?
- The payable falls from three hundred and twenty thousand pounds to three hundred and four thousand, so a gain of sixteen thousand pounds.
- Question two.
- Local sales rise five per cent while the currency falls eight per cent against the parent's.
- One point zero five times zero point nine two is zero point nine six six, so translated sales fall three point four per cent.
- Question three.
- Net monetary liabilities of two hundred units, and the foreign currency falls from two dollars to one dollar eighty.
- Under the temporal method, two hundred times twenty cents is a gain of forty dollars, in profit.
- Well done.