The cash flow statement and free cash flow

Financial Statement Analysis

1 A story: the shop with a record profit and no cash

- Record profit, nearly empty bank account
- Profit counts a sale when it is made
- Cash counts only when money really moves
- The cash flow statement tracks the fact: cash

IN THE LESSON

- Imagine a small furniture maker.
- This year it sold a great deal and the books show a record profit.
- But its customers are slow to pay, and it spent heavily on stock and on a new workshop.
- When the wage bill arrives on Friday, the bank account is nearly empty.
- The owner is puzzled.
- The answer is that profit is an opinion about timing.
- A sale is counted when it is made, even if the money comes later.
- Cash is a fact.
- It is either in the bank or it is not.
- The cash flow statement is the report that tracks that fact, and it sorts every movement of cash into three buckets.

2 The three buckets

- Operating: customers, suppliers, staff, tax
- Investing: buy or sell machines, buildings, investments
- Financing: loans, share issues, buybacks, dividends
- Deals with no cash move are disclosed separately

IN THE LESSON

- Here are the three buckets.
- Operating activities are the day to day business: cash coming in from customers, cash going out to suppliers, to staff and to the tax office.
- They are the cash effects of the things that produce net income.
- Investing activities are the buying and selling of long term assets, such as machines, buildings and shares in other companies.
- Financing activities are dealings with the people who supply the company's money: borrowing and repaying loans, issuing and buying back shares, and paying dividends.
- Two more points.
- Some deals use no cash at all, such as buying a building by taking on a loan.
- These are disclosed separately and left out of the three totals.

3 Where does each cash item go?

Common cash items and their section

Cash item	Section
Cash from customers	Operating
Pay suppliers, staff, tax	Operating
Buy or sell equipment, shares	Investing
Loans, shares, dividends paid	Financing

IN THE LESSON

- Let us sort some common items.
- Cash received from customers is operating.
- Cash paid to suppliers, staff and the tax office is operating.
- Buying or selling equipment, and buying or selling investments in other companies, is investing.
- Taking out a loan, repaying it, issuing shares, buying shares back and paying dividends to owners are all financing.
- A handy test is to ask who is on the other side of the payment.
- A customer or supplier means operating.
- Someone selling or buying an asset means investing.
- A lender or an owner means financing.
- Notice that dividends paid go to owners, so they are financing, not an expense.

4 IFRS and US GAAP: where the rules differ

- US GAAP: interest paid is operating, no choice
- IFRS: interest paid is operating or financing
- IFRS: interest, dividends received: operating or investing
- Dividends paid: financing (US GAAP), IFRS has a choice

IN THE LESSON

- Now the accounting rules.
- Two sets are used around the world, I F R S and U S G A A P.
- They agree on most of the sorting, but they differ on a few items, and questions like those.
- Under U S G A A P, interest paid, interest received and dividends received are all operating.
- Dividends paid are financing.
- Under I F R S, interest paid can be shown as operating or as financing, the company chooses.
- Interest and dividends received can be operating or investing.
- Dividends paid can be operating or financing.
- Taxes paid are operating under both, unless they clearly belong to an investing or financing deal.
- So two firms can report different operating cash flow for the same events.

5 Example 1: sorting Tidewell's year

Tidewell Foods, events of the year, $ millions (made up)

Bought new ovens	Investing	**− 100**
Borrowed from the bank	Financing	**+ 100**
Repaid part of a loan	Financing	**− 40**
Paid dividends to owners	Financing	**− 50**
Net financing	100 − 40 − 50	**+ 10**

IN THE LESSON

- Example one.
- We meet our running company for the whole lesson, a food maker called Tidewell Foods.
- All the figures are made up, in millions of dollars.
- Look at some of its events this year.
- It bought new ovens for one hundred, which is investing.
- It borrowed one hundred from the bank, which is financing, an inflow.
- It repaid forty of an older loan, a financing outflow.
- It paid fifty in dividends to its owners, also financing.
- Add the financing items: one hundred in, minus forty, minus fifty, gives net financing cash flow of plus ten.
- Investing is minus one hundred.
- The operating section is still to come, and we will build it two different ways.

6 The three sections make the change in cash

Change in cash = operating + investing + financing cash flow

Operating cash flow	Cash from the day to day business
Investing cash flow	Buying or selling long term assets
Financing cash flow	Dealing with lenders and owners

IN THE LESSON

- Here is the idea that holds the whole statement together.
- Every dollar that moves in or out of the company lands in exactly one of the three sections.
- So if you add the three section totals, you get the change in cash over the period.
- Add that change to the cash at the start of the year and you get the cash at the end.
- An inflow is positive and an outflow is negative.
- A section can be negative, and that is not automatically bad.
- A growing firm often has a negative investing section because it is building for the future.
- What matters is the pattern of the three together, which we come back to at the end.

7 A story: two ways to count what you saved

- Road 1: list every cash receipt and payment
- Road 2: start from profit and correct it
- Same destination: the same operating cash flow
- Direct method and indirect method

IN THE LESSON

- Suppose you want to know how much you saved this month.
- One way is to open your bank statement and list every deposit and every payment.
- Pay in, pay out, and the difference is your saving.
- That is clear, but it takes a long list.
- A second way is to start with what you earned on paper, then correct it for things that were not cash, such as a bill you have received but not yet paid.
- You reach the same number by a different road.
- The cash flow statement offers the same two roads for operating cash flow.
- The first is the direct method.
- The second is the indirect method.

8 Meet Tidewell's income statement

Tidewell Foods income statement, $ millions (made up)

Revenue		**1,000**
Cost of goods sold		**− 600**
Operating expenses + depreciation	150 + 50	**− 200**
Interest 40 and tax 40	tax rate 25%	**− 80**
Net income		**120**

IN THE LESSON

- Both roads start from the same company, so here is Tidewell's income statement for the year.
- Revenue is one thousand.
- Cost of goods sold, the cost of the food it sold, is six hundred.
- Operating expenses, such as wages and rent, are one hundred and fifty, and depreciation, the slice of the ovens' cost charged this year, is fifty.
- Together those costs are eight hundred.
- Interest is forty, and so profit before tax is one hundred and sixty.
- Tax at twenty five per cent is forty.
- Net income is one hundred and twenty.
- Keep that number in mind, because the cash the firm made from operating is not going to be one hundred and twenty.

9 What changed on the balance sheet

Working capital accounts, start to end of year, $ millions

Receivables	customers owe more	**100 to 130**
Inventory	more stock	**120 to 150**
Prepaid expenses	paid in advance	**10 to 14**
Payables	owed to suppliers	**90 to 110**
Accrued liabilities	costs owed, unpaid	**20 to 30**

IN THE LESSON

- The second ingredient is how the balance sheet accounts moved.
- These are the working capital accounts, the ones tied to day to day trading.
- Receivables, money customers owe, went from one hundred to one hundred and thirty, so customers owe thirty more.
- Inventory, stock waiting to be sold, rose from one hundred and twenty to one hundred and fifty.
- Prepaid expenses, bills paid before the cost is used, rose from ten to fourteen.
- On the other side, payables, what Tidewell owes its suppliers, rose from ninety to one hundred and ten.
- And accrued liabilities, costs owed but not yet paid, such as wages, rose from twenty to thirty.

10 The indirect method

Operating cash flow = net income + depreciation ± working capital changes

Net income	Where the indirect method starts
Depreciation	Non cash charge, added back
Working capital changes	Asset rise −, liability rise +

IN THE LESSON

- The indirect method starts from net income and corrects it.
- There are two kinds of correction.
- First, add back non cash charges.
- Depreciation was subtracted to reach net income, but no cash left the building when it was recorded, so we add it back.
- Second, adjust for changes in working capital.
- The rule is simple.
- When an asset account rises, cash has been used, so subtract the rise.
- When a liability account rises, cash has been kept, so add the rise.
- A rise in receivables means customers owe more, and we have not been paid.
- A rise in payables means we owe suppliers more, and we still hold the cash.
- Reverse the signs when the accounts fall.

11 Example 2: Tidewell by the indirect method

Tidewell Foods, indirect method, $ millions

Net income		**120**
Add back depreciation	no cash left	**+ 50**
Assets up, cash used	30 + 30 + 4	**− 64**
Liabilities up, cash kept	20 + 10	**+ 30**
Operating cash flow	120 + 50 − 64 + 30	**136**

IN THE LESSON

- Example two.
- Start with net income of one hundred and twenty.
- Add back depreciation of fifty, because no cash left.
- Now the working capital.
- Receivables rose thirty, inventory rose thirty, and prepaid expenses rose four.
- That is sixty four of cash used, so subtract it.
- Payables rose twenty and accrued liabilities rose ten.
- That is thirty of cash kept, so add it.
- The total is one hundred and twenty plus fifty, minus sixty four, plus thirty, which is one hundred and thirty six.
- Operating cash flow is one hundred and thirty six, higher than profit, mostly because of the large depreciation charge that used no cash.

12 Direct or indirect: what to remember

- Direct: real receipts and payments, best to forecast
- Indirect: from net income, explains profit versus cash
- Both give the same operating cash flow total
- Most firms use indirect; US GAAP wants a reconciliation

IN THE LESSON

- So which is better?
- The direct method shows the real receipts and payments: cash collected from customers, cash paid to suppliers, cash paid to staff.
- That is more useful for forecasting, because an analyst can project each line from its own driver, such as sales or headcount.
- The indirect method is easier for the company to prepare, because it starts from the net income it already has, and it shows why profit and cash differ.
- Both give exactly the same operating cash flow total.
- In practice almost every company uses the indirect method.
- Under both I F R S and U S G A A P either method is allowed.
- Under U S G A A P, a firm using the direct method must also give the reconciliation from net income.

13 A story: the shopkeeper's two notebooks

- Sales book says one thing, the cash tin another
- Go line by line: how much became cash?
- Income statement line, corrected for its account
- Result: the direct method, line by line

IN THE LESSON

- Picture a shopkeeper with two notebooks.
- One is the sales book, where every sale is written down on the day it happens.
- The other is the cash tin.
- At the end of the month the two do not agree.
- The sales book says one thousand, but the tin holds less.
- Why?
- Some customers have not paid yet.
- The way to reconcile is to go line by line.
- For each item in the sales book, ask how much of it has become cash.
- Restating the indirect statement in direct form is exactly this.
- We take each income statement line, correct it for the change in the matching balance sheet account, and the cash line appears.

14 Cash collected and cash paid to suppliers

Cash collected = revenue − rise in receivables
Paid to suppliers = COGS + rise in inventory − rise in payables

Revenue	Sales for the year
Rise in receivables	Customers owe more, no cash yet
Cost of goods sold	Cost of what was sold
Rise in inventory	Extra stock bought, cash out
Rise in payables	Suppliers not yet paid, cash kept

IN THE LESSON

- Here are the first two conversions.
- Cash collected from customers equals revenue minus the rise in receivables.
- If receivables rose, some of this year's sales are still unpaid, so less cash arrived than revenue shows.
- Cash paid to suppliers is a two step idea.
- First work out what was bought.
- Purchases equal cost of goods sold plus the rise in inventory, because if stock grew, we bought more than we sold.
- Then subtract the rise in payables, because if we owe suppliers more, we have not paid for all of it yet.
- So cash paid to suppliers equals cost of goods sold, plus the rise in inventory, minus the rise in payables.

15 Cash paid for operating expenses

Cash paid for operating expenses = expense − rise in accrued liabilities + rise in prepaid

Operating expenses	Wages, rent; not depreciation
Rise in accrued liabilities	Owed, not yet paid: cash kept
Rise in prepaid expenses	Paid in advance: cash out first

IN THE LESSON

- The third conversion is for operating expenses such as wages and rent.
- The income statement records an expense when it is incurred.
- Cash may move earlier or later.
- Cash paid for operating expenses equals the expense, minus the rise in accrued liabilities, plus the rise in prepaid expenses.
- Why minus the accrued rise?
- Accrued liabilities are costs incurred but not yet paid, such as wages owed.
- If they rose, part of the expense is still unpaid, so less cash left.
- Why plus the prepaid rise?
- Prepaid expenses are bills paid in advance.
- If they rose, more cash left than the expense shows.
- Interest and tax usually need no change here, and we treat them as paid in full.

16 Example 3: convert Tidewell's lines

Tidewell Foods, income statement line to cash line, $ millions

Cash collected from customers	1,000 − 30	**970**
Purchases from suppliers	600 + 30	**630**
Cash paid to suppliers	630 − 20	**610**
Cash paid for operating expenses	150 − 10 + 4	**144**
Interest and tax paid in cash	40 + 40	**80**

IN THE LESSON

- Example three.
- Cash collected from customers is revenue of one thousand minus the thirty rise in receivables, which is nine hundred and seventy.
- For suppliers, first purchases.
- Cost of goods sold of six hundred plus the thirty rise in inventory is six hundred and thirty.
- Then subtract the twenty rise in payables, so cash paid to suppliers is six hundred and ten.
- For operating expenses, take one hundred and fifty, subtract the ten rise in accrued liabilities, and add the four rise in prepaid expenses, which gives one hundred and forty four.
- Depreciation does not appear at all, because it is not cash.
- Interest of forty and tax of forty were paid in cash.

17 Example 4: the direct statement

Tidewell Foods, direct method, $ millions

Cash collected from customers		**970**
Cash paid to suppliers		**− 610**
Cash paid for operating expenses		**− 144**
Interest and tax paid	40 + 40	**− 80**
Operating cash flow	same as indirect	**136**

IN THE LESSON

- Example four.
- Put the pieces together as a direct method statement.
- Cash collected from customers is nine hundred and seventy.
- Subtract cash paid to suppliers, six hundred and ten, and cash paid for operating expenses, one hundred and forty four.
- Subtract interest and tax paid, eighty.
- Nine hundred and seventy minus six hundred and ten is three hundred and sixty.
- Minus one hundred and forty four is two hundred and sixteen.
- Minus eighty is one hundred and thirty six.
- That is the same one hundred and thirty six that the indirect method gave.
- This is a good check: if your two answers differ, a sign has slipped.
- The direct form also shows what drives the gap between profit and cash.

18 Mistakes to avoid so far

- 1. Dividends paid are financing under US GAAP
- 2. Depreciation is added back; no cash left
- 3. Asset up lowers cash. Liability up raises it
- 4. Purchases = COGS + rise in inventory, then payables

IN THE LESSON

- Before we move on, mistakes that cost marks.
- One.
- Putting dividends paid in operating.
- Under U S G A A P they are financing.
- Two.
- Adding back depreciation as though it were cash.
- It is added back because no cash left, not because it brings cash in.
- Three.
- Getting the working capital signs backwards.
- A rise in an asset such as receivables lowers cash.
- A rise in a liability such as payables raises it.
- Four.
- In the direct method, forgetting the inventory step.
- Purchases are cost of goods sold plus the rise in inventory, not cost of goods sold alone.
- And remember, the two methods always give the same total.

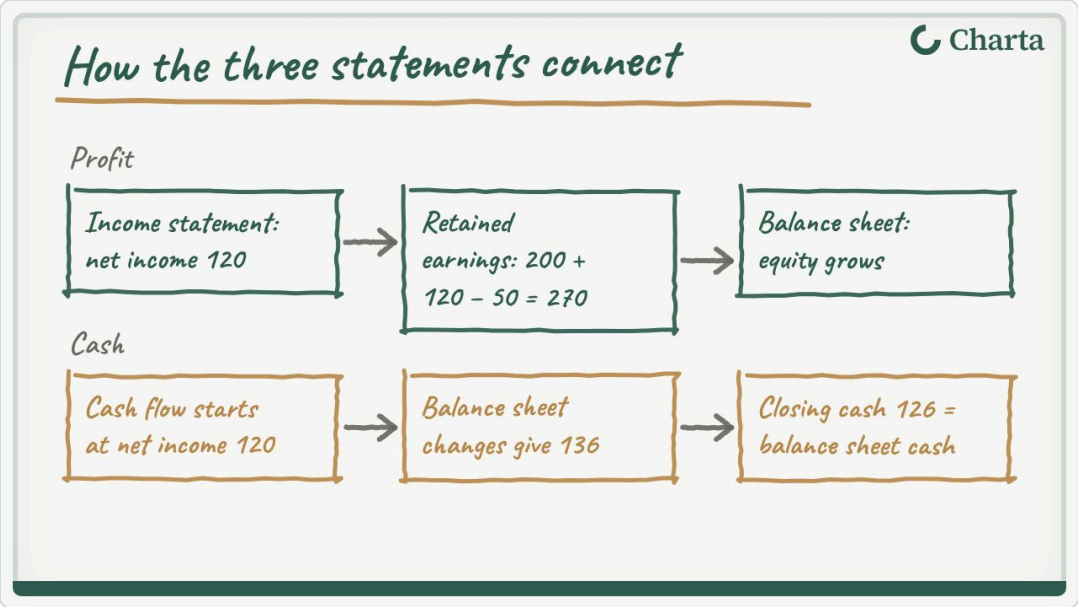
19 A story: three cameras on one event

- Income statement: profit over a period
- Balance sheet: what is owned and owed on one day
- Cash flow statement: how cash moved
- Same events, so the three must agree

IN THE LESSON

- Think of three cameras filming the same football match.
- One camera shows the score, one shows the positions of the players, and one shows the money taken at the gate.
- The pictures are different, but they describe the same match, so they must agree.
- The three financial statements are like that.
- The income statement shows the profit earned over a period.
- The balance sheet shows what the company owns and owes at a moment in time.
- The cash flow statement shows how cash moved.
- Every event, such as a sale or a loan, shows up in them together.
- If the pictures do not agree, someone has made a mistake.

20 How the three statements connect



IN THE LESSON

- Here is the connection as a picture, in two rows.
- The top row follows profit.
- Net income of one hundred and twenty comes from the income statement.
- It goes into retained earnings on the balance sheet, the profit the firm has kept.
- Retained earnings start at two hundred, add the one hundred and twenty, subtract the fifty paid out as dividends, and end at two hundred and seventy.
- The bottom row follows cash.
- The cash flow statement starts from the same net income.
- Working capital changes, which come from the balance sheet, turn it into operating cash flow.
- After investing and financing, the closing cash of one hundred and twenty six is the cash line on the balance sheet.

21 Example 5: opening cash to closing cash

Tidewell Foods, cash reconciliation, $ millions

Opening cash		**80**
Operating cash flow		**+ 136**
Investing cash flow		**− 100**
Financing cash flow		**+ 10**
Closing cash	80 + 136 − 100 + 10	**126**

IN THE LESSON

- Example five.
- Cash at the start of the year was eighty.
- Operating cash flow was plus one hundred and thirty six.
- Investing was minus one hundred for the ovens.
- Financing was plus ten.
- The change in cash is one hundred and thirty six minus one hundred plus ten, which is forty six.
- Closing cash is eighty plus forty six, which is one hundred and twenty six.
- Now the test: the balance sheet at the end of the year must show cash of exactly one hundred and twenty six.
- If it does, the cash flow statement ties to the balance sheet.
- If it shows another number, something has been missed.
- This is the check an analyst runs when building a model.

22 The balance sheet balances

Year-end balance sheet, $ millions

Assets 1,070 = 700 + 370	**$ millions**
Current assets (126 + 294)	420
Equipment, net	650
Liabilities	700
Equity (100 + 270)	370

IN THE LESSON

- Now check the balance sheet itself, because every change we found must leave it balanced.
- At year end, cash is one hundred and twenty six.
- Receivables, inventory and prepaid expenses add to one hundred and thirty, plus one hundred and fifty, plus fourteen, which is two hundred and ninety four.
- Equipment started at six hundred, grew by the hundred spent and shrank by fifty of depreciation, so it is six hundred and fifty.
- Total assets are one thousand and seventy.
- On the other side, payables and accruals are one hundred and forty and debt is five hundred and sixty, so liabilities are seven hundred.
- Equity is capital of one hundred plus retained earnings of two hundred and seventy, three hundred and seventy.
- Seven hundred plus three hundred and seventy equals one thousand and seventy.
- It balances.
- A forecast that raises revenue but leaves receivables and inventory unchanged is a model that has not been thought through.

23 A story: what is left in the till for the owners

- Not all operating cash can be taken out
- Capital expenditure keeps the business going
- FCFF: free cash for lenders and owners together
- FCFE: free cash for the owners alone

IN THE LESSON

- Imagine you own a bakery and want to know how much cash you could really take out.
- You cannot take everything the ovens earn.
- Some of it must go back into the business, to replace worn out ovens and to buy new ones.
- That spending is called capital expenditure.
- What is left after you have kept the shop going is called free cash flow.
- It is free in the sense that it is available to the people who funded the business.
- There are two versions.
- Free cash flow to the firm, written F C F F, is the cash available to lenders and owners together.
- Free cash flow to equity, written F C F E, is what is left for the owners alone.

24 Free cash flow to the firm

FCFF = operating cash flow + interest × (1 − tax rate) − capital expenditure

Operating cash flow	Start from the cash flow statement
Interest, after tax	Add back only if deducted
Capital expenditure	Spent on long term assets

IN THE LESSON

- Here is the first formula.
- F C F F starts from operating cash flow, adds back interest after tax, and subtracts capital expenditure.
- Why add back interest?
- Free cash flow to the firm is measured before paying any capital provider, lenders included.
- If interest has already been deducted in operating cash flow, we must put it back.
- We use after tax interest, which is interest times one minus the tax rate, because interest saves tax and operating cash flow only bore the cost after that saving.
- Capital expenditure is subtracted because that cash went into the long term assets the business needs.
- The key condition is that the add back is made only if interest was deducted in operating cash flow.

25 Free cash flow to equity

FCFE = operating cash flow − capital expenditure + net borrowing

Operating cash flow	Already after interest paid
Capital expenditure	Spent on long term assets
Net borrowing	New borrowing less repayments

IN THE LESSON

- The second formula is for the owners.
- F C F E equals operating cash flow, minus capital expenditure, plus net borrowing.
- Net borrowing is new borrowing minus repayments.
- Here we do not add back interest.
- Why not?
- The owners are paid after the lenders, so interest rightly stays deducted.
- We do add net borrowing, because cash from lenders is available to the business, and repayments reduce it.
- The two measures connect.
- F C F E equals F C F F, minus after tax interest, plus net borrowing.
- Free cash flow to equity can even be positive in a year with an accounting loss, because it starts from cash, and non cash charges such as depreciation have already been added back.

26 Example 6: Tidewell's FCFF

Tidewell Foods, US GAAP, interest in operating, $ millions

Operating cash flow		**136**
Add back interest after tax	40 × (1 − 0.25)	**+ 30**
Capital expenditure	ovens	**− 100**
FCFF	136 + 30 − 100	**66**

IN THE LESSON

- Example six, under U S G A A P.
- Interest paid is operating, so it was deducted in the one hundred and thirty six.
- Start there.
- Add back interest after tax.
- Interest was forty and the tax rate is twenty five per cent, so after tax interest is forty times zero point seven five, which is thirty.
- Subtract capital expenditure of one hundred.
- The result is one hundred and thirty six, plus thirty, minus one hundred, which is sixty six.
- So Tidewell generated sixty six million dollars of free cash flow for its lenders and owners together, before paying either of them anything.

27 Example 7: Tidewell's FCFE

Tidewell Foods, $ millions

Operating cash flow		**136**
Capital expenditure		**− 100**
Net borrowing	100 − 40	**+ 60**
FCFE	136 − 100 + 60	**96**
Check from FCFF	66 − 30 + 60	**96**

IN THE LESSON

- Example seven, the owners' share.
- Start again from operating cash flow of one hundred and thirty six.
- Subtract capital expenditure of one hundred.
- Add net borrowing.
- Tidewell borrowed one hundred and repaid forty, so net borrowing is sixty.
- The result is one hundred and thirty six minus one hundred plus sixty, which is ninety six.
- Here is the check using the link between the two measures.
- Start from the sixty six of free cash flow to the firm.
- Subtract thirty of after tax interest, because lenders get that first.
- Add sixty of net borrowing.
- Sixty six minus thirty plus sixty is ninety six.
- Both roads agree.
- Note that the fifty of dividends is not deducted.
- FCFE is what could be paid out.

28 Example 8: the interest trap under IFRS

Tidewell Foods, IFRS, interest of 40 shown in financing, $ millions

Operating cash flow, no interest	136 + 40	**176**
Capital expenditure		**− 100**
FCFF = CFO − FCInv	176 − 100	**76**
Wrong: add back again	176 + 30 − 100	**106**

IN THE LESSON

- Example eight is the trap.
- Suppose Tidewell reported under I F R S and chose to show the forty of interest paid as financing.
- Then operating cash flow was never reduced by interest.
- It is one hundred and thirty six plus forty, which is one hundred and seventy six.
- The add back exists only to undo a deduction.
- None was made, so we do not add.
- F C F F is simply operating cash flow minus fixed capital investment: one hundred and seventy six minus one hundred, which is seventy six.
- Adding the thirty back again would give one hundred and six, which double counts the interest.
- Notice that seventy six is ten above our earlier sixty six.
- The gap is the tax saving on the interest.
- The usual rule keeps it simple: add back only if interest was deducted.

29 A story: reading the cash flow signs

- Read the signs of the three sections first
- Mature: earns, invests some, pays out the rest
- Growing: invests more than it earns, raises funds
- Danger: operating cash negative, funded by borrowing

IN THE LESSON

- Before computing a single ratio, you can read a cash flow statement like a story, just from the plus and minus signs of the three sections.
- Think of a person at three stages of life.
- A mature person earns steadily, spends some on the home, and pays back debts or gives money away.
- A young person starting out spends more than they earn and relies on loans and family.
- The same is true of companies.
- A mature company has positive operating cash flow, spends part on investing, and returns the rest through financing outflows.
- A growing company invests more than it earns and raises financing to fill the gap.
- The worst case is negative operating cash flow funded by borrowing.

30 Four patterns of the three signs

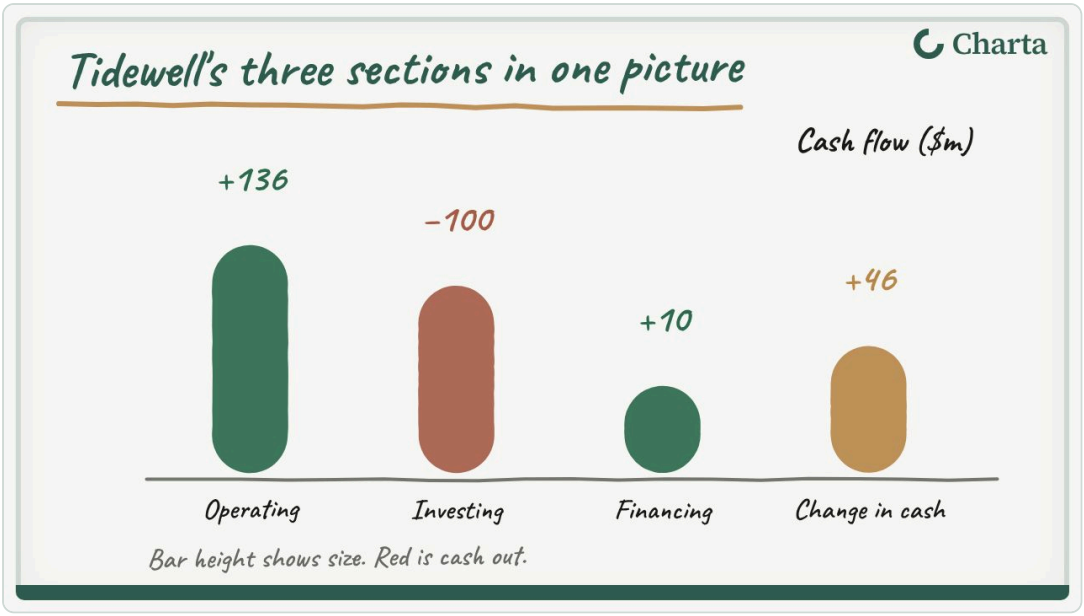
Signs of operating / investing / financing cash flow

Pattern of the signs	Reading
Mature: + / − / −	Pays out
Growing: + / − / +	Raises funds
Struggling: − / − / +	Burns cash
Shrinking: + / + / −	Repays debt

IN THE LESSON

- Here are four patterns, written as the sign of operating, investing and financing in that order.
- A mature company is plus, minus, minus.
- It earns cash, invests part of it, and pays out the rest in dividends or debt repayment.
- A growing company is plus, minus, plus.
- Its operations earn cash but not enough for its plans, so it borrows or issues shares.
- A struggling company is minus, minus, plus.
- The core business loses cash, it still invests, and lenders or owners cover everything.
- That cannot go on for long.
- A shrinking company is plus, plus, minus.
- It earns cash, sells assets, and uses the money to repay debt.
- Use these as a first reading, not a verdict.

31 Tidewell's three sections in one picture



IN THE LESSON

- Here is Tidewell's year as bars.
- The first bar is operating cash flow, plus one hundred and thirty six, cash in.
- The second is investing, minus one hundred, cash out for the new ovens.
- The third is financing, plus ten, a small net inflow, made of one hundred borrowed, less forty repaid, less fifty paid in dividends.
- The fourth bar is the result: cash rose by forty six, from eighty to one hundred and twenty six.
- The pattern is plus, minus, plus, which is a growing company.
- Its operations paid for most of its expansion, and borrowing covered the rest.
- That is a healthy story, much better than a firm whose growth is paid for entirely by lenders.

32 Example 9: how good is the operating cash?

Tidewell Foods, $ millions

Cash conversion	136 ÷ 120	**113%**
Cash absorbed by working capital	− 64 + 30	**− 34**
Capex cover	136 ÷ 100	**1.36 times**
One-off gain, payables 15 days	600 ÷ 365 × 15	**$24.7m**

IN THE LESSON

- Example nine, the quality of operating cash flow.
- The first test compares cash with profit.
- Operating cash flow of one hundred and thirty six over net income of one hundred and twenty is one point one three, so cash is one hundred and thirteen per cent of profit.
- Good.
- But look inside.
- Before working capital, operating cash flow is net income plus depreciation, one hundred and seventy.
- Working capital absorbed thirty four of it, minus sixty four plus thirty.
- The capital expenditure cover is one hundred and thirty six over one hundred, one point three six times.
- Now a warning.
- If Tidewell stretched its suppliers by fifteen days, it would keep six hundred over three hundred and sixty five times fifteen, twenty four point seven.
- That is a one off gain that cannot be repeated.

33 Recap: the formulas to remember

CFO = NI + dep ± WC
FCFF = CFO + int × (1 − t) − capex
FCFE = CFO − capex + net borrowing

Net income	Start of the indirect method
Operating cash flow	Start of both free cash flows
Interest, after tax	Only if deducted in operating
Capital expenditure	Spent on long term assets
Net borrowing	New borrowing less repayments

IN THE LESSON

- Let us pull the lesson together.
- There are three sections, operating, investing and financing, and together they make the change in cash.
- The indirect method starts from net income, adds back depreciation, subtracts rises in assets and adds rises in liabilities.
- The direct method lists receipts and payments, and both give the same total.
- Free cash flow to the firm is operating cash flow, plus interest after tax if it was deducted there, minus capital expenditure.
- Free cash flow to equity is operating cash flow, minus capital expenditure, plus net borrowing.
- Link them to the other statements: net income feeds retained earnings, and closing cash on the cash flow statement is the balance sheet cash.
- Then read the signs and the quality of operating cash.

34 Try three quick questions

1. Net income 90, depreciation 20, receivables up 15, payables up 5. Operating cash flow?
   Answer: 90 + 20 − 15 + 5 = 100.
2. Revenue 500, receivables up 40. Cash collected from customers?
   Answer: 500 − 40 = 460.
3. US GAAP: operating cash 200, interest 20, capex 80, tax 25%. FCFF?
   Answer: 200 + 20 × 0.75 − 80 = 135.

IN THE LESSON

- Now try three quick questions yourself.
- Pause after each one.
- Question one.
- Net income is ninety, depreciation twenty, receivables rose fifteen and payables rose five.
- What is operating cash flow by the indirect method?
- Ninety plus twenty, minus fifteen, plus five, is one hundred.
- Question two.
- Revenue is five hundred and receivables rose forty.
- What is cash collected from customers?
- Five hundred minus forty is four hundred and sixty.
- Question three.
- Under U S G A A P, operating cash flow is two hundred, interest paid twenty, capital expenditure eighty, tax rate twenty five per cent.
- What is free cash flow to the firm?
- Two hundred plus fifteen minus eighty is one hundred and thirty five.
- Well done.