Company analysis: past, present and future

Equity Investments

1 A story: two shops, one street

- Shop one wins on the lowest price
- Shop two wins with a brand people pay extra for
- A strategy is a plan for winning customers
- The analyst checks the numbers, not the slogan

IN THE LESSON

- Picture two bike shops facing each other.
- The first shop sells plain bikes at the lowest price in town.
- It buys in huge batches, keeps its premises simple, and is happy with a thin profit on each bike.
- The second shop sells its own brand of handbuilt bikes at a high price, and its customers happily pay.
- Both can succeed, but in completely different ways.
- A firm's plan for winning is called its strategy.
- The analyst's job is not to admire the plan.
- It is to check whether the numbers prove the plan is working, and whether rivals can copy it.
- That is what company analysis begins with.

2 Meet Calder Cycles

Calder Cycles, year two, $ millions (made-up figures)

Revenue, year one	**190**
Revenue, year two	220
Gross profit, year two	88
Operating profit, year two	30
Capital spending, year two	30

IN THE LESSON

- Throughout this lesson we follow one made-up company, Calder Cycles.
- It makes road bikes and electric bikes.
- All the figures are round numbers for teaching, in millions of dollars.
- Year one is the past, year two is the present, and year three will be our forecast.
- Look at the table.
- Revenue was one hundred and ninety in year one and two hundred and twenty in year two.
- Gross profit in year two was eighty-eight, which is forty per cent of revenue.
- Operating profit, the profit left after running costs, was thirty.
- Capital spending, the money spent on factories and equipment, was thirty.
- We will take every one of these apart.

3 How a firm can compete

- Cost leadership: the lowest cost base
- Differentiation: a premium for brand or quality
- Either one broad, or focused on a niche
- Each leaves a footprint in the numbers

IN THE LESSON

- There are two broad ways to win.
- The first is cost leadership: becoming the producer with the lowest cost, so the firm can undercut rivals on price or still earn a healthy margin at the same price.
- The second is differentiation: being different in a way customers value, such as brand, quality or features, so they pay a higher price.
- Either can be applied across the whole market, or to a focused niche, such as bikes only for mountain racers.
- The point is that each strategy leaves a footprint.
- A cost leader should show lower unit costs than its rivals.
- A differentiator should show higher prices actually paid, and usually higher gross margins.

4 Moats: can the advantage last?

- Scale: fixed costs spread over many units
- Network effects: more users, more value
- Switching costs, patents and licences
- Brand: trust that lets the firm charge more

IN THE LESSON

- A strategy is only valuable if it lasts.
- Investors call a lasting advantage a moat, like the water around a castle.
- There are five common ones.
- Scale: a big firm spreads its fixed costs over more units, so its cost per unit is lower.
- Network effects: the product becomes more valuable as more people use it.
- Switching costs: it is painful or expensive for customers to leave.
- Patents and licences: the law keeps rivals out.
- And brands: customers trust the name and pay for it.
- When you forecast, ask which moat protects the profit, and how fast it could wear away.
- A moat you cannot name is probably not there.

5 Where the firm stands in its industry

- Rivalry, new entrants and substitutes
- Bargaining power of buyers and of suppliers
- Plus market share and customer base
- Position links the industry view to the forecast

IN THE LESSON

- Position means how strong the firm is among its rivals, customers and suppliers.
- Analysts often use five forces.
- First, rivalry: how fiercely existing competitors fight, often on price.
- Second, new entrants: how easily newcomers can arrive.
- Third, substitutes: other products that meet the same need.
- Fourth, the bargaining power of buyers: can customers push prices down?
- And fifth, the bargaining power of suppliers: can they push our costs up?
- Add the firm's market share, its customer base and its relative strength against suppliers and buyers, and you have its position.
- That position links the industry analysis to the company's own forecasts.

6 Example 1: test the claim

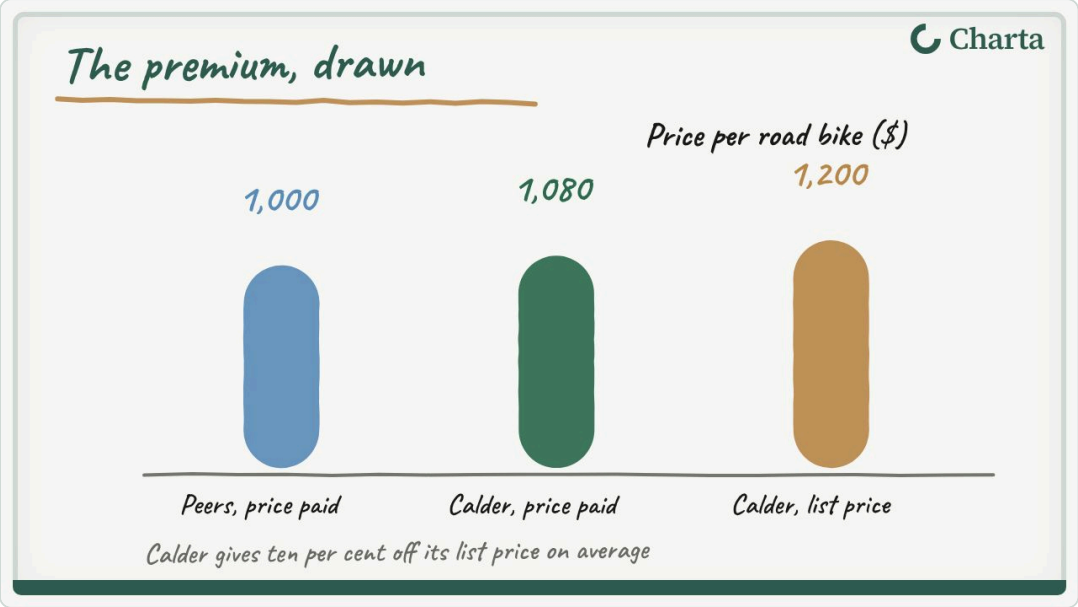
Road bikes: Calder against its peers

List price premium	1,200 vs 1,000	**+20%**
Premium after discounts	1,080 vs 1,000	**+8%**
Gross margin, last year	Calder 40%, Ridge 35%	**+5 pts**
Share of the market	10% to 11%	**Rising**

IN THE LESSON

- Example one.
- Calder says it is differentiated: a premium bike brand.
- Test it.
- Calder's list price for a road bike is twelve hundred dollars, against a thousand for its peers, twenty per cent higher.
- But the average Calder buyer gets ten per cent off, so the price actually paid is one thousand and eighty.
- That is eight per cent above the peers' thousand.
- The premium survived, though it shrank.
- Check the margin.
- Last year Calder's gross margin was forty per cent, against thirty-five for its closest rival, Ridge.
- And Calder's share of the market rose.
- Three checks, three passed: the differentiation claim is visible in the numbers.

7 The premium, drawn



IN THE LESSON

- Here is the premium as a picture.
- Price runs up the side, in dollars for one road bike.
- The first bar is the price the peers actually get, one thousand dollars.
- The second bar is what Calder actually collects after discounts, one thousand and eighty, taller by eight per cent.
- The last bar is Calder's list price, twelve hundred, the number on the sticker.
- The gap between the second and third bars is the discounts given away.
- A common error is to read the sticker price as the premium.
- The real premium is the price customers actually pay.
- If the second bar sank down to the first, the differentiation story would be hollow, whatever the brochure says.

8 Example 2: share and growth

Industry sales and Calder revenue, $ millions

Industry growth	2,000 ÷ 1,900 − 1	**5.3%**
Calder growth	220 ÷ 190 − 1	**15.8%**
Share, year one	190 ÷ 1,900	**10.0%**
Share, year two	220 ÷ 2,000	**11.0%**

IN THE LESSON

- Example two is market share, a company's sales as a share of its industry's sales.
- Industry sales grew from nineteen hundred to two thousand, which is five point three per cent.
- Calder grew from one hundred and ninety to two hundred and twenty, fifteen point eight per cent, almost three times faster.
- Share is Calder's sales divided by the industry's.
- In year one that is ten per cent.
- In year two it is eleven per cent.
- So Calder's growth has two sources: the market growing, and Calder taking a bigger slice.
- Share gains are worth more than market growth, because they show customers choosing the firm over rivals.
- Gains that come only from discounting, though, can vanish.

9 A story: the same sales, taken apart

- Same revenue, very different businesses
- Split revenue into volume and price
- Or customers times spend per customer
- Forecast each driver from its own evidence

IN THE LESSON

- Two cafes each take in one hundred dollars a day.
- The first sells fifty cups at two dollars.
- The second sells twenty-five cups at four dollars.
- Same revenue, but very different businesses.
- The first needs a busy street and long queues.
- The second depends on people agreeing to pay more.
- If a competitor opens next door, the second cafe must fight on price, while the first must fight for footfall.
- So revenue forecasting starts by splitting sales into drivers: how many units are sold and at what price, or how many customers there are and how much each spends.
- Then each driver can be forecast from its own evidence, by product and by region.

10 Revenue from its drivers

Revenue = volume × price
Total = sum over products and regions

Volume sold	Units sold, from demand and share
Price per unit	Average price actually received
Revenue	Add up product by product

IN THE LESSON

- The basic revenue identity is simple.
- Revenue equals volume times price.
- Volume is the number of units sold, price is the average price actually received per unit.
- For a firm with several products, you do this product by product, then add up.
- Why bother?
- Because the two drivers behave differently.
- Volume depends on demand, market growth, share and capacity.
- Price depends on competition, costs and brand strength.
- A price rise that merely passes on higher costs is a different kind of growth from selling many more bikes.
- Volume growth tends to be the more reliable of the two over many years.

11 Example 3: Calder's revenue by segment

Volume in thousands, price in dollars, revenue in $ millions

Road bikes, year one	100 × 1,000	**100.0**
E-bikes, year one	60 × 1,500	**90.0**
Road bikes, year two	108 × 1,080	**116.64**
E-bikes, year two	68 × 1,520	**103.36**
Total, year two	116.64 + 103.36	**220.0**

IN THE LESSON

- Example three.
- Calder sells two products.
- In year one it sold one hundred thousand road bikes at a thousand dollars, which is revenue of one hundred million.
- It also sold sixty thousand electric bikes at fifteen hundred dollars, which is ninety million.
- Total revenue, one hundred and ninety.
- In year two, road bikes rose to one hundred and eight thousand units at one thousand and eighty dollars.
- That is one hundred and sixteen point six four million.
- Electric bikes rose to sixty-eight thousand units at fifteen hundred and twenty dollars, a hundred and three point three six million.
- Add them, and revenue is exactly two hundred and twenty.

12 Example 4: price or volume?

Year one to year two, by driver

Road bike volume	108 ÷ 100 − 1	**8.0%**
Road bike price	1,080 ÷ 1,000 − 1	**8.0%**
E-bike volume	68 ÷ 60 − 1	**13.3%**
E-bike price	1,520 ÷ 1,500 − 1	**1.3%**
Road bike revenue	1.08 × 1.08 − 1	**16.6%**

IN THE LESSON

- Example four asks where the growth came from.
- Road bike volume rose from one hundred to one hundred and eight thousand, up eight per cent.
- The price rose from a thousand to one thousand and eighty, also up eight per cent.
- Multiply the two growth factors, one point zero eight times one point zero eight, and you get one point one six six four, which is growth of sixteen point six per cent.
- For electric bikes, volume rose thirteen point three per cent, but price only one point three per cent.
- So half of road bike growth came from price.
- That raises a question for the forecast: was that price rise just passing on cost inflation, or does Calder truly have pricing power?
- We will test that shortly.

13 Margins: how profitable are the sales?

Gross margin = (revenue − COGS) ÷ revenue
Operating margin = operating profit ÷ revenue

Revenue	Sales for the year
Cost of goods sold	Direct cost of what was sold
Gross profit	Revenue minus COGS
Operating profit	Gross profit minus running costs

IN THE LESSON

- Revenue is only the start.
- Margins tell us how much of each dollar of sales becomes profit.
- Gross profit is revenue minus cost of goods sold, the direct cost of making what was sold.
- Gross margin is gross profit divided by revenue.
- Next come running costs, such as marketing, research and head office.
- Subtract them from gross profit and you reach operating profit, which analysts also call E B I T, earnings before interest and tax.
- Operating margin is operating profit divided by revenue.
- Gross margin shows how well the product itself earns.
- Operating margin shows how well the whole business turns sales into profit before financing and tax.

14 Example 5: Calder's margins

Calder year two, $ millions

Gross profit	220 − 132	**88**
Operating profit	88 − 58	**30**
Gross margin	88 ÷ 220	**40.0%**
Operating margin, year two	30 ÷ 220	**13.6%**
Operating margin, year one	20 ÷ 190	**10.5%**

IN THE LESSON

- Example five.
- Calder's year two revenue is two hundred and twenty.
- Cost of goods sold is one hundred and thirty-two, so gross profit is eighty-eight and the gross margin is forty per cent.
- Running costs are fifty-eight, so operating profit is thirty.
- Divide thirty by two hundred and twenty and the operating margin is thirteen point six per cent.
- Now look back.
- In year one, gross profit was seventy-six on revenue of one hundred and ninety, also forty per cent.
- Running costs were fifty-six, so operating profit was twenty, an operating margin of ten point five per cent.
- The gross margin did not change, yet the operating margin rose by three points.
- Why?
- The running costs hardly grew while sales jumped.

15 Operating leverage

Operating leverage = % change in operating profit ÷ % change in revenue

% change in profit	How much profit moved
% change in revenue	How much sales moved
Operating leverage	The magnifier on profit

IN THE LESSON

- Why did profit jump?
- Think of a cinema.
- The building, the lights and the staff cost the same whether the hall is empty or full.
- Those are fixed costs.
- Popcorn and tickets cost more as more people come.
- Those are variable costs.
- A firm with a lot of fixed costs has high operating leverage: once sales cover the fixed costs, each extra dollar drops almost entirely into profit.
- We measure it as the percentage change in operating profit divided by the percentage change in revenue.
- The number is the multiple by which profit is magnified.
- The effect works in both directions, so high leverage widens margins in good times and crushes them in bad times.

16 Example 6: Calder's leverage, up and down

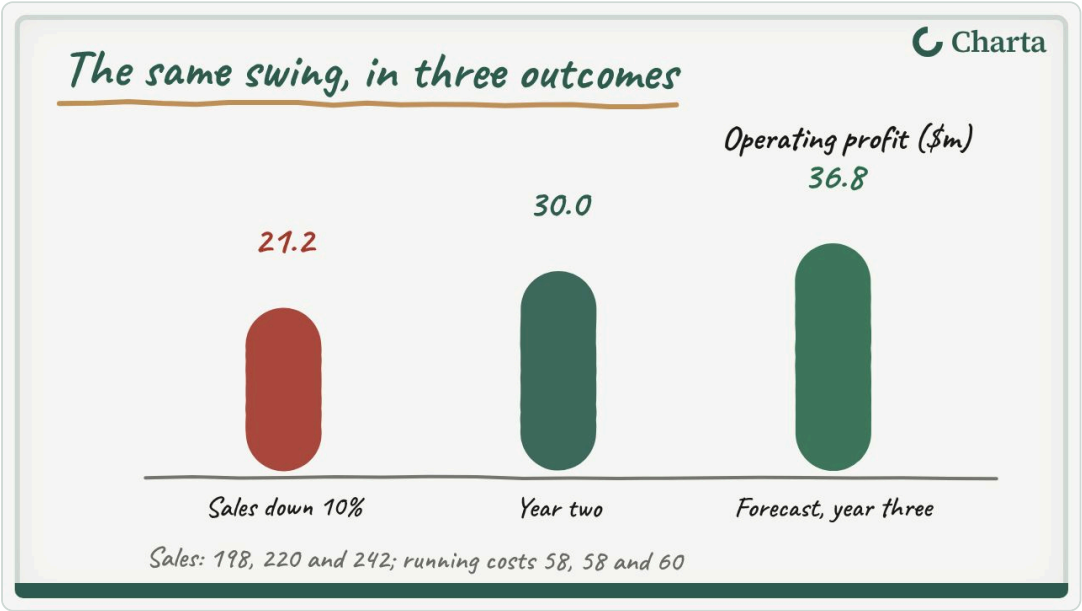
Operating leverage at Calder

Revenue change	220 ÷ 190 − 1	**15.8%**
Operating profit change	30 ÷ 20 − 1	**50.0%**
Operating leverage	50.0 ÷ 15.8	**3.17**
If sales fall 10%: profit	198 × 40% − 58	**21.2**
Fall in operating profit	21.2 ÷ 30 − 1	**−29.3%**

IN THE LESSON

- Example six.
- Calder's revenue rose fifteen point eight per cent from year one to year two.
- Its operating profit rose from twenty to thirty, which is fifty per cent.
- Divide fifty by fifteen point eight and operating leverage is three point one seven.
- Profit moved over three times as much as sales.
- Now run it backward.
- Suppose year-two sales had fallen ten per cent, to one hundred and ninety-eight, with the gross margin still forty per cent and running costs still fifty-eight.
- Gross profit would be seventy-nine point two, and operating profit twenty-one point two, down twenty-nine point three per cent.
- A ten per cent sales fall wiped out nearly a third of the profit.

17 The same swing, in three outcomes



IN THE LESSON

- Here is operating leverage as a picture.
- Operating profit runs up the side, in millions of dollars.
- The first bar is the bad case: sales down ten per cent, profit twenty-one point two.
- The middle bar is year two, profit thirty.
- The last bar is our forecast for year three, with sales up ten per cent to two hundred and forty-two, gross margin still forty per cent, and running costs stepping up to sixty.
- That gives profit of thirty-six point eight, up twenty-two point seven per cent.
- Sales moved ten per cent each way, but the profit bars move by much more.
- A forecaster who ignores fixed costs would simply scale profit with sales, and be badly wrong in both directions.

18 Pricing power

- Power to raise prices and keep the customers
- Comes from brand, switching costs, patents
- Test it: does gross margin hold when costs rise?
- Compare with peers and across a full cycle

IN THE LESSON

- Pricing power is the ability to raise prices without losing much volume.
- Think of the only pharmacy in a small town, against the fiftieth coffee stand at a station.
- When costs rise, the pharmacy passes it on and customers still come.
- The coffee stand cannot, because customers walk three steps to the next one.
- Pricing power comes from the moats we met earlier: brand, switching costs, patents, scarce supply.
- How do we spot it?
- Look at gross margin through a period of rising input costs.
- A firm with pricing power keeps its margin roughly stable while costs climb.
- A firm without it watches the margin shrink.
- Always compare with peers and over a full cycle, to separate a real advantage from one good year.

19 Example 7: a cost shock, two firms

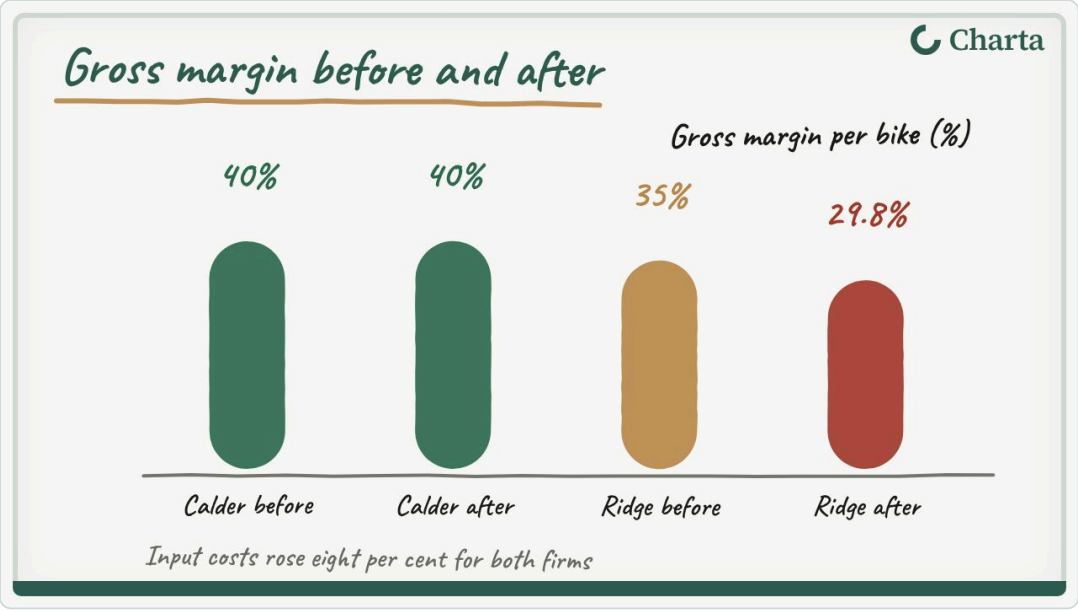
Road bike margins after an 8% cost rise

Calder cost per bike	600 × 1.08	**648**
Calder gross margin	(1,080 − 648) ÷ 1,080	**40.0%**
Ridge cost per bike	650 × 1.08	**702**
Ridge gross margin	(1,000 − 702) ÷ 1,000	**29.8%**
Ridge margin before	(1,000 − 650) ÷ 1,000	**35.0%**

IN THE LESSON

- Example seven.
- Input costs rise eight per cent for everyone.
- Calder's cost per road bike goes from six hundred to six hundred and forty-eight.
- It raises its price from a thousand to one thousand and eighty, and, as we saw, still sells more.
- Its margin per bike is one thousand and eighty minus six hundred and forty-eight, over one thousand and eighty: forty per cent, unchanged.
- Now Ridge.
- Its cost per bike goes from six hundred and fifty to seven hundred and two, but its customers would leave if it raised prices, so it holds at a thousand.
- Its margin per bike falls from thirty-five per cent to twenty-nine point eight.
- Same shock, opposite results.
- The difference is pricing power.

20 Gross margin before and after



IN THE LESSON

- Now the picture.
- Gross margin per road bike runs up the side, in per cent.
- The first two bars are Calder: forty per cent before the cost shock, forty per cent after.
- Flat.
- The next two bars are Ridge: thirty-five per cent before, and twenty-nine point eight after, a drop of five point two points.
- Flat bars through inflation are the footprint of pricing power.
- A falling bar is the footprint of a firm that has to absorb its costs.
- Notice the careful wording, though.
- We have only one shock and one rival.
- Before drawing a firm conclusion, an analyst would check several years and several peers, in case Calder simply got lucky with its costs.

21 Mistakes to avoid so far

- Believing the label, not the numbers
- Sticker price instead of price actually paid
- One good year mistaken for a moat
- Scaling profit with sales, ignoring fixed costs
- Every price rise counted as pricing power

IN THE LESSON

- Let us pause on the traps.
- First, believing the label.
- A firm that says premium but whose discounts erase the premium, with an average margin and falling share, is competing on price.
- Second, reading the sticker price as the premium.
- Use the price actually paid.
- Third, confusing a high margin with a moat.
- A good year can be luck, so compare with peers and across a cycle.
- Fourth, forecasting profit by simply scaling revenue, ignoring fixed costs.
- High operating leverage means profit swings more than sales.
- Fifth, counting every price rise as pricing power.
- A rise that loses customers is not power, and one that only passes on costs deserves a closer look.

22 A story: growth costs cash

- Growth needs ovens, flour and patient credit
- Working capital: receivables, inventory, payables
- Capital spending: factories and equipment
- Funding: debt or shareholders' money

IN THE LESSON

- A baker wins a big supermarket contract.
- Sales double.
- But to bake twice as much she needs a second oven, more flour on the shelves, and the supermarket pays in sixty days, while her flour supplier wants paying in thirty.
- Her profit looks wonderful on paper, yet her bank account is draining.
- Growth has to be paid for.
- Three things take the cash: working capital, which is money tied up in receivables and inventory, net of what suppliers have not yet been paid; capital spending on equipment and buildings; and the way those needs are funded, with debt or with shareholders' money.
- This is where profit and cash come apart.

23 Example 8: Calder's working capital

Year-two balances from the days, $ millions

Receivables	220 × 45 ÷ 365	**27.1**
Inventory	132 × 60 ÷ 365	**21.7**
Payables	132 × 40 ÷ 365	**14.5**
Working capital	27.1 + 21.7 − 14.5	**34.4**

IN THE LESSON

- Example eight.
- We want Calder's working capital at the end of year two, so we build each balance from its number of days.
- Calder collects from customers in forty-five days, holds inventory for sixty days, and pays suppliers in forty days.
- Receivables are two hundred and twenty times forty-five over three hundred and sixty-five: twenty-seven point one.
- Inventory is cost of goods sold, one hundred and thirty-two, times sixty over three hundred and sixty-five: twenty-one point seven.
- Payables are one hundred and thirty-two times forty over three hundred and sixty-five: fourteen point five.
- Working capital in operations is receivables plus inventory minus payables: thirty-four point four.
- Receivables and payables use revenue and cost days as before.

24 Example 9: year three, two ways

Forecast: revenue +10%, $ millions

Revenue, year three	220 × 1.10	**242**
Working capital, year two	from example 8	**34.4**
Year three, same days	37.8 − 34.4	**+3.4**
Year three, 60 days to collect	47.7 − 34.4	**+13.4**
One extra day of receivables	242 ÷ 365	**0.66**

IN THE LESSON

- Example nine is the forecast.
- Our forecast is that revenue grows ten per cent, from two hundred and twenty to two hundred and forty-two, so cost of goods sold is one hundred and forty-five point two.
- Keep the same days.
- Receivables become twenty-nine point eight, inventory twenty-three point nine, payables fifteen point nine, so working capital is thirty-seven point eight.
- It rose by three point four: cash that growth tied up.
- Now suppose Calder offers customers sixty days to win sales.
- Receivables jump to thirty-nine point eight, and working capital to forty-seven point seven, an increase of thirteen point four.
- Each extra day of receivables ties up point six six of cash.
- Compare the two cases: the same sales growth, but far more cash tied up.
- Looser credit can lift sales and profit while draining cash.

25 Capital intensity and reinvestment

Capex ÷ depreciation: expanding or maintaining?
Capex ÷ revenue: capital intensity

Capital spending	Spent on new long-lived assets
Depreciation	Cost of assets worn out this year
Revenue	Sales for the year

IN THE LESSON

- Capital spending, or capex, is money spent on long-lived assets.
- Depreciation spreads the cost of those assets over their lives, so it is a rough measure of the spending needed just to stand still.
- Comparing the two is revealing.
- Capex divided by depreciation above one means the firm is spending more than its assets are wearing out, so it is expanding.
- Near one, it is only maintaining.
- Below one, it may be letting assets age.
- Capex divided by revenue shows capital intensity: how many cents of every sales dollar go into new assets.
- A capital-hungry business, like a steelmaker, needs a lot of capital to grow.
- A software firm needs very little.

26 Example 10: is Calder expanding?

Capital spending against depreciation, $ millions

Year two: capex ÷ depreciation	30 ÷ 18	**1.67**
Year two: capex ÷ revenue	30 ÷ 220	**13.6%**
Year three: capex ÷ depreciation	35 ÷ 20	**1.75**
Year three: capex ÷ revenue	35 ÷ 242	**14.5%**

IN THE LESSON

- Example ten.
- In year two Calder spent thirty on capital equipment and booked eighteen of depreciation.
- Thirty divided by eighteen is one point six seven, so it is adding capacity, not just replacing.
- Capex divided by revenue: thirty over two hundred and twenty, thirteen point six per cent.
- For year three the forecast capex is thirty-five and depreciation twenty.
- That ratio is one point seven five, and capex is fourteen point five per cent of the larger revenue.
- So Calder is steadily investing at nearly double its depreciation, a capital-heavy plan.
- The analyst's follow-up questions: will this new capacity be filled, and what return will it earn?
- Spending that outruns demand destroys value.

27 From profit to free cash flow

Free cash flow = net profit + depreciation − capex − rise in working capital

Net profit	Profit after interest and tax
Depreciation	Added back, no cash left
Capital spending	Cash spent on assets
Rise in working capital	Cash tied up in operations
Free cash flow	Cash left for investors

IN THE LESSON

- Now bring it together.
- Free cash flow is the cash left for investors after the business has paid for its own growth.
- A simple form starts with net profit.
- Add back depreciation, because it reduced profit but no cash left the firm.
- Subtract capital spending, because it took cash but is not a cost in the profit figure.
- And subtract the rise in working capital, since cash is tied up in receivables and inventory.
- If the answer is positive, the firm funded itself and has cash to repay debt, pay dividends or invest further.
- If negative, the shortfall must be funded from outside, or from cash already held.

28 Example 11: Calder's year-three cash

Year three, $ millions

Net profit	(36.8 − 4.8) × 75%	**24.0**
Depreciation less capex	20 − 35	**−15.0**
Free cash flow, rise 3.4	24 − 15 − 3.4	**5.6**
Free cash flow, rise 13.4	24 − 15 − 13.4	**−4.4**

IN THE LESSON

- Example eleven.
- First, net profit.
- Year three operating profit is thirty-six point eight.
- Calder has debt of sixty at eight per cent, so interest is four point eight, leaving thirty-two before tax.
- At twenty-five per cent tax, net profit is twenty-four.
- Now free cash flow.
- Add depreciation of twenty and subtract capex of thirty-five, which nets to minus fifteen.
- In the base case, the working capital rise is three point four.
- Twenty-four minus fifteen minus three point four leaves five point six.
- Positive, but small beside a profit of twenty-four.
- Now the sixty-day credit case.
- The working capital rise is thirteen point four.
- Twenty-four minus fifteen minus thirteen point four leaves negative four point four.
- Profit is still twenty-four, yet Calder must find outside money.

29 How growth is financed

- Debt: fixed interest, must be repaid
- Equity: new shares or retained profit
- More debt lifts returns in good years, hurts in bad
- Watch interest cover and debt to equity

IN THE LESSON

- Where does the money come from when cash falls short?
- From two places.
- Debt: borrowing, which must be repaid with interest.
- And equity: shareholders' money, either new shares or retained profit.
- The mix is the capital structure.
- More debt raises the return on equity in good years, since lenders accept a fixed interest rate and shareholders keep the rest.
- But the interest is owed in bad years too.
- We watch interest cover, operating profit divided by interest expense, and the ratio of debt to equity.
- We also ask how a company funds its assets: long-term assets from long-term money, and working capital from short-term borrowing that renews easily.
- A mismatch can trigger a crisis.

30 Example 12: the debt gamble

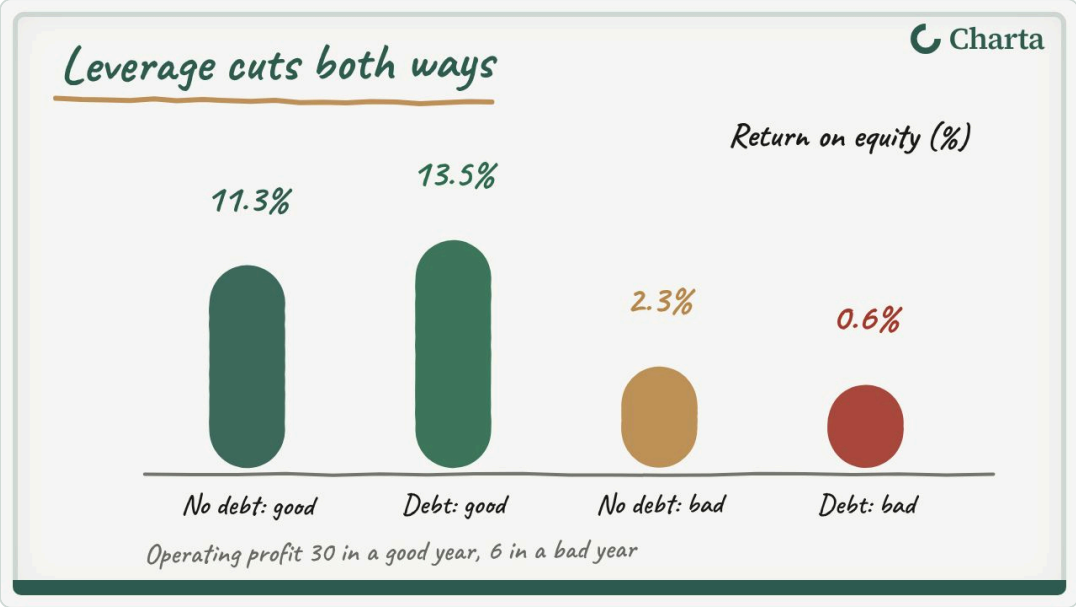
Assets 200: debt 60 at 8%, equity 140, tax 25%

Good year: return on equity	18.9 ÷ 140	**13.5%**
Good year, no debt	22.5 ÷ 200	**11.25%**
Interest cover, bad year	6 ÷ 4.8	**1.25**
Bad year: return on equity	0.9 ÷ 140	**0.64%**
Bad year, no debt	4.5 ÷ 200	**2.25%**

IN THE LESSON

- Example twelve.
- Calder has assets of two hundred, funded by debt of sixty and equity of one hundred and forty.
- Interest is four point eight.
- In a good year, operating profit is thirty.
- After interest and tax, net profit is eighteen point nine, a return on equity of thirteen point five per cent.
- Had Calder used equity only, two hundred, profit would be twenty-two point five, a return of eleven point two five per cent.
- Debt helped.
- Now a bad year, with operating profit of only six.
- Interest cover is just one point two five.
- With debt, net profit is point nine, a return of point six per cent.
- With equity only, it is four point five, or two point two five per cent.
- Debt hurt.

31 Leverage cuts both ways



IN THE LESSON

- Here are the four outcomes side by side.
- Return on equity runs up the side, in per cent.
- In the good year, the first two bars: with no debt, eleven point two five per cent, and with debt, thirteen point five.
- Debt lifts the return.
- In the bad year, the last two bars: with no debt, two point two five per cent, and with debt, only point six four.
- Debt lowers it, and in a worse year still, interest cover below one would mean the firm cannot pay its interest from operating profit at all, which risks distress.
- Leverage multiplies both the upside and the downside.
- This is why operating leverage and financial leverage together make profit so volatile.

32 The cash and funding traps

- Profit is not cash: check free cash flow
- Watch receivable, inventory and payable days
- Compare capex with depreciation and revenue
- Debt adds risk as well as return
- Past ratios guide; the forecast must fit

IN THE LESSON

- Now the traps in this part.
- First, equating profit with cash.
- Calder earned twenty-four yet generated five point six, and could have burned cash with looser credit.
- Second, ignoring working capital days: a firm that collects late and pays early ties up cash as it grows.
- Third, reading high capex as good or bad on its own.
- Compare it with depreciation and revenue, and ask what return the new assets will earn.
- Fourth, treating debt as free because it is cheaper than equity.
- It raises financial risk and the chance of distress.
- And fifth, forgetting the future.
- Past ratios are only a guide.
- The forecast must reflect strategy, drivers, margins, cash needs and funding together.

33 The lesson in five lines

Revenue = volume × price
Operating leverage = %Δ profit ÷ %Δ revenue
FCF = NI + depreciation − capex − ΔWC

Volume sold	Units sold
Price per unit	Price actually received
Operating leverage	Profit swing per sales swing
Capital spending	Compare with depreciation
Free cash flow	Cash left after growth

IN THE LESSON

- Let us tie it together.
- To analyse a company, start with revenue as volume times price, product by product.
- Check the margins, gross and operating, against peers and through a cycle.
- Measure operating leverage as the percentage change in operating profit over the percentage change in revenue, because fixed costs magnify swings.
- Test pricing power by watching gross margin through cost inflation.
- Then turn profit into cash: net profit plus depreciation minus capital spending minus the rise in working capital gives free cash flow.
- And ask whether debt or equity funds any gap, since debt adds risk.
- Past, present and future all hang together in that chain.

34 Try three quick questions

1. List price 20% above peers (100), 15% discount. Premium actually paid?
   Answer: 120 × 0.85 = 102, so only 2% above peers.
2. Revenue +10%, operating profit +30%. Operating leverage?
   Answer: 30 ÷ 10 = 3.0.
3. Net profit 50, depreciation 10, capex 30, working capital up 15. Free cash flow?
   Answer: 50 + 10 − 30 − 15 = 15.

IN THE LESSON

- Now try three quick questions.
- Pause after each one.
- Question one.
- A firm lists its bikes twenty per cent above peers but gives fifteen per cent off.
- Is the premium real?
- List price one hundred and twenty, less fifteen per cent, is one hundred and two, so the premium actually paid is just two per cent.
- Question two.
- Revenue rises ten per cent and operating profit rises thirty per cent.
- What is operating leverage?
- Thirty divided by ten is three.
- Question three.
- Net profit is fifty, depreciation ten, capex thirty, and working capital rises by fifteen.
- What is free cash flow?
- Fifty plus ten minus thirty minus fifteen is fifteen.
- Well done.