Ten things
you need to know
about breakeven

Ian Marcousé provides a framework of ten concepts to aid your finance revision

1 Breakeven chart

A line graph showing revenue and costs at all possible levels of output.

Example: a breakeven chart for Tottenham Hotspur Football Club could show the possible revenues and variable and fixed costs at the club's soon-to-be-built new stadium

Advantage: shows at a glance the breakeven number of fans needed per game, helping managers know what needs to be done.

Disadvantage: breakeven charts assume linearity, in other words that variables such as revenue and variable costs are constant per unit, e.g. every customer is charged £200 for a flight to Morocco. In reality every passenger may have paid a different price.

2 Breakeven output

Same as breakeven point: the number of units you have to sell to generate the income to cover all fixed and variable costs.

Example: it is said that discount airlines such as Ryanair need to sell 75% of the seats on a flight to break even. So passenger 142 on Ryanair's 189-passenger Boeing aircraft is the breakeven output level.

Advantage: calculating the breakeven point helps a business plan for downside risk. In the recession, Ryanair cut winter flights to avoid planes flying with fewer passengers than the breakeven output level.

Disadvantage: businesses find it hard to distinguish between fixed and variable costs, so breakeven calculations are less certain than you might think.

3 Breakeven revenue

Breakeven point read off the vertical axis (£s) instead of the horizontal axis (output).

Example: a shop such as Ted Baker knows that if its weekly fixed overheads are £30,000 and its gross profit margin is 60%, it needs to generate £30,000/0.6 = £50,000 of revenue to break even.

Advantage: virtually no business sells a single product at a single price. Life is more complicated. Breakeven revenue is therefore more relevant to the real world than the breakeven point.

Disadvantage: breakeven revenue only has meaning if the company's gross profit margins are relatively constant.

4 Changing the price

On a breakeven chart, a price rise keeps the revenue line's starting point at zero, but the line will rise more steeply, i.e. will move progressively further to the left, away from the original line.

Example: if Krispy Kreme increases the price of a dozen doughnuts from £10.95 to £12.95, its revenue line will rise more steeply, as every extra unit of output/sales rises vertically by an extra £2.

Advantage: showing the price change on the graph shows how a price increase lowers the breakeven point.

Disadvantage: good though it is to lower your breakeven point, it gets you nowhere if demand falls sharply.

5 Lowering breakeven point

A factor that lowers the breakeven point can potentially widen the safety margin between breakeven and sales.

Examples: lower fixed costs, lower variable costs per unit and higher prices.

Advantage: a new business can hope to reach breakeven more quickly if the breakeven point is lower.

Disadvantage: cutting costs may undermine the reputation for quality, i.e. damage the long-term future for the sake of the short term.

6 Improving analysis

A breakeven chart is static, i.e. it assumes that the revenue/costs equation is constant over time.

Example: a business with a breakeven level of 400 units may have sales of 440 units and therefore an all-too-slim safety margin of 40. But what if recent monthly sales have gone 380, 390, 400, 420, 440? The upwards trend makes the safety margin look far less of a worry.

Solution: breakeven charts might be better with time on the horizontal axis, allowing revenue growth (or decline) to be plotted alongside the firm's breakeven position.

Advantage: with a sales trend shown on the chart, managers would take this analysis more seriously, using it to anticipate future profits or losses and act accordingly.

Disadvantage: if time is on the horizontal axis, it is not possible to plot all the other cost lines — only revenue and breakeven point.

7 Limitations of breakeven

Labelling the horizontal axis is hard because it's not clear whether it measures sales or output. In effect one has to assume zero stockbuilding, i.e. that output = sales.

Advantage: after identifying the limitations of a model it is easier to interpret the data accurately.

Disadvantage: every limitation of a model or theory undermines its real-world usefulness.

8 Safety margin

The amount by which sales can fall before the business starts to make losses. Formula: Sales – Breakeven point

Example: in June 2015 Ryanair's average capacity utilisation was 92.5%, i.e. 175 seats out of 189. If the breakeven level is 142, the business can afford for customer demand to slip by 175 – 142 = 33 passengers before it needs to worry about making losses.

Advantage: shows the cushion the business has against serious trading problems.

Disadvantage: the safety margin may disappear more quickly than expected if a common factor pushes costs up and sales down, e.g. a sharp rise in interest rates.

9 Rising fixed costs

When growth forces a business to expand to bigger premises, fixed costs step up to a new, higher horizontal level. This forces total costs to step/jump up too.

Example: Scoop ice cream pays £4,000 a month in rent on its Covent Garden shop. If it moved to a bigger site on a busier street, it could cost £10,000 a month. Fixed costs would step up accordingly.

Advantage: showing the stepped rise in fixed costs means breakeven analysis can be dynamic (it's often criticised for being static).

Disadvantage: a graph showing the stepped rise in fixed (and total) costs only works at a time of growth. If things turn bad for the business, it will remain lumbered with the new, higher fixed costs. It is easier to step up than step down.

10 The breakeven formula

Breakeven can be calculated by dividing fixed costs by contribution per unit (price *minus* variable costs per unit).

Example: a business has £2,000 of monthly fixed costs. Each unit sells for £5 and generates £3 in variable costs. So the breakeven point is £2,000/£2 = 1,000 units

Advantage: knowing how to calculate breakeven point makes it unnecessary to draw up a breakeven chart, saving time in an exam.

Disadvantage: as with any calculation, the answer is only as reliable as the data. Inaccurate cost data is potentially the biggest problem.

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