

Break-even

A business can work out how what volume of sales it needs to achieve to cover its costs. This is known as the **break even point**.

The key to break even is to work out the contribution made from the sale of each unit.

The amount of money each unit sold **contributes** to pay for the fixed and indirect costs of the business.

► **Contribution = selling price less variable cost per unit**

E.g. a product sells for £15 and has variable costs per unit of £11. Each unit sale therefore makes a contribution of £4 towards the fixed costs of the business. If the business had fixed costs of £20,000, then it would need to sell 5,000 units ($£4 \times 5,000 = £20,000$ contribution) in order to break even.

The margin of safety is the difference between the number of units of planned or actual sales and the number of units of sales at break even point.

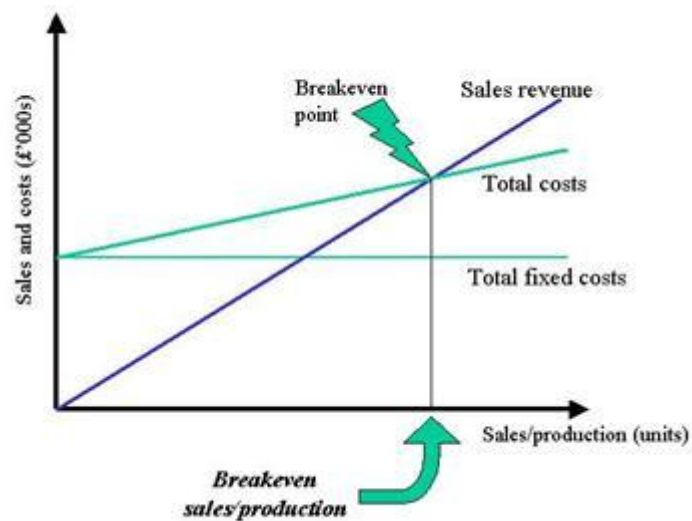
If, using the example above, planned sales were thought to be 6,000 units, then the margin of safety would be 6,000 units – break even 5,000 units = 1,000 units. The business would be able to sell 1,000 less than planned before they were in danger of making a loss.

A break-even chart plots the sales revenue, different costs and helps identify the break even point and margin of safety.

Drawing break-even charts

To draw a chart the following steps need to be followed:

1. Label the vertical axis “sales and costs in pounds”.
2. Label the horizontal axis “sales/production (units)”.
3. On another piece of paper sketch the scales that you want to use given the data, then use this plan on the chart.
4. Plot any two points from the sales revenue data for the sales revenue line and then draw a straight line for sales revenue (assumes that the price per unit does not change) – if the information is not given for sales revenue, then work out two points, e.g. for 1000 units sold and 1500 units sold. The start of the line should be through the origin (where the axes meet).
5. Draw a horizontal line for total fixed costs starting at the point on the vertical axis at the level of costs.
6. At the same starting point it is possible to draw the total costs line. Total costs are fixed costs plus variable costs. Work out what the total costs are for say 1000 units and 1500 units. Then draw the straight line starting at the same point as the fixed costs started and then through the two plotted points.
7. Where the sales revenue crosses the total costs line is the break even point. Read off the units of sales to give the break even level of sales.
8. The gap between the total costs line and sales revenue line after the break even point represents the level of profit.



It is important for a business to understand its break-even point because the contribution from every unit sold above the break-even point adds to profit. The break-even point provides a focus for the business, but also helps it work out whether the forecast sales will be enough to produce a profit and whether further investment in the product is worthwhile.

The limitations of break-even charts are:

- ▶ Do not take into account possible changes in costs over the time period.
- ▶ Do not allow for changes in the selling price.
- ▶ Analysis only as good as the quality of information.
- ▶ Do not allow for changes in market conditions in the time period – e.g. entry of new competitor.

Key Links for GCSE Business Studies

<http://www.tutor2u.net/>

[Discussion Board for GCSE Business Studies](#)

[Other GCSE Business Studies Revision Notes and Resources from tutor2u](#)

[Tutor2u GCSE Business Online Store](#)