

Classification of costs, profit, contribution and break-even analysis

An important business objective is to break-even i.e. to exactly cover your total costs by sales revenue. It is even more desirable to make a profit. The diagram below illustrates a firm's costs and revenues and illustrates three possible situations:

1. Loss making (outputs to the left of the break-even point)
2. Break-even
3. Profit-making (outputs to the right of the break-even point.)

In order to understand break-even, we first need to define key terms:

Fixed costs

Costs that do not vary with output or sales e.g. managers salaries, rent and rates on business premises.

Variable costs

Costs that vary with the quantity produced or sold e.g. costs of raw materials, sales staff commissions, etc.

Total cost

Fixed costs + variable costs at each possible level of output.

Sales revenue:**Profit**

The difference between total revenue and total cost (where revenues are higher than costs).

Loss

The difference between total revenue and total cost (where costs are higher than revenues).

There are two simple ways of calculating the break-even point of a business:

1. Draw a chart showing:
 - * sales revenue at different levels of output
 - * fixed costs at different levels of output
 - * total costs at different levels of output
 - * the break-even point where total cost = total sales revenue.
2. Calculating the contribution of each unit sold or made. The contribution is the difference between the sales revenue and the variable cost of each unit sold or made.

The number of units needed to be sold (or made) to break-even is then calculated by:

We can illustrate break-even by using an example.

An importer buys bottles of a particular type of French wine for £2 a bottle, stores them in a warehouse in this country and then advertises them for sale over the Internet at £4 each. The fixed costs of running the business are £10,000 a

month. We can calculate the break-even point by using the two methods, described above:

1. Drawing a chart:
Costs and revenues

2. Calculating contribution per bottle:

Fixed costs = £10,000

Variable cost = £2 per bottle

Sales revenue = £4 per bottle

Contribution = £2 ($£4 - £2 = £2$).

Now work out these two examples on your own:

i. Calculate the break-even point for a newspaper vendor. He buys in newspapers at 20p each and sells them for 50p each. His fixed costs are £60 a day including the rate he pays to the local council. How many newspapers must he sell each day to break-even?

ii. A large business has fixed costs of £250,000 per week. Its average sales revenue per item is £2, and its variable costs are on average 50p per item. How many items does it need to sell to break-even?