



COSTS, SCALE OF PRODUCTION AND BREAK-EVEN ANALYSIS

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BUSINESS COSTS

Fixed costs are the costs which do not vary in the short run with the number of items sold or produced. They have to be paid whether the business is making any sales or not. Examples include management salaries or rent paid for property.

Variable costs are costs which vary with the number of items sold or produced. Example of variable costs include material costs, piece-rate labor costs.

Total costs of a business, during a period of time, are all fixed costs added to all variable costs of production.

Average cost per unit is the total cost of production divided by total output sometimes referred to as unit cost.

If the average cost of production and the level of output is known, then total cost can be calculated by multiplying average cost per unit by output.

USING COST DATA

- **Setting prices:** If the average cost per unit is not known, the business could charge a price that leads to a loss being made.
- **Deciding whether to stop production or continue:** No business wants to continue to make a loss, but the decision to stop making a product will also depend on whether:
 - the product has just been launched on the market-the sales revenue might increase in future.
 - the fixed costs will still have to be paid, e.g., if the factory being used for the product is not sold.
- **Deciding on best location:** Costs are not the only factor to consider-there might not be any point in choosing a low-cost location for a new shop if it is in the worst part of the town!



ECONOMIES OF SCALE

Economies are the factors that lead to a reduction in average costs as a business increases in size

Purchasing economies of scale: When a business buys a large number of components, it is able to gain a discount for buying in bulk. This reduces the unit cost of each item bought.

Marketing economies: Large businesses are able to purchase their own vehicles to distribute goods and transport costs are also reduced by using larger vehicles. Advertising rates in papers and TV do not go up in the same proportion as the size of an ad ordered by the business. Less sales staff is also needed to sell product lines.

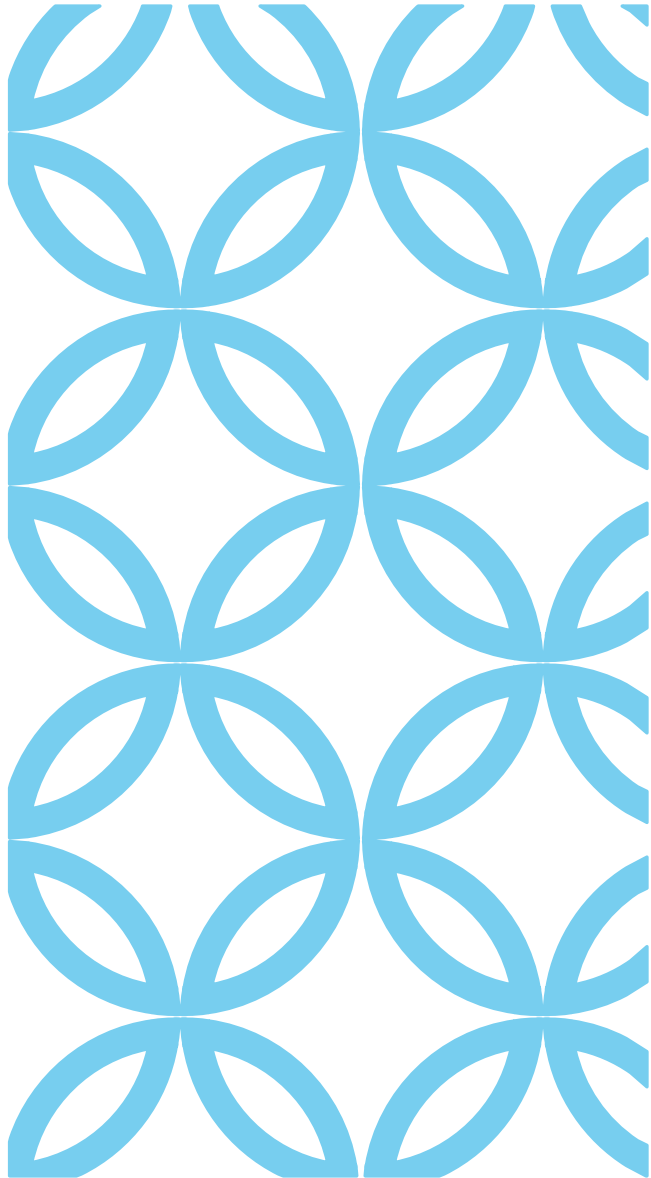
Financial economies: Larger businesses are often able to raise capital more cheaply than smaller ones



ECONOMIES OF SCALE

Managerial economies: Larger companies can afford specialists, and this increases their efficiency and helps to reduce their average costs.

Technical economies: transport costs are cut by a large amount when using large vehicles. Large firms often use flow production methods. These apply the principle of division of labor. Specialist machines are also used to produce items in continuous flow. The use of flow production and the latest equipment will reduce average cost for the large manufacturing businesses, but small firms cannot afford all this.



Diseconomies of scale are the factors that lead to an increase in average costs as a business grows beyond a size.

Poor Communication: The larger the organization the more difficult it is to send and receive messages. It leads to lower efficiency and higher average costs.

Lack of commitment from employees: Lack of close relationships between workers and top managers can lead to lack of commitment and low efficiency among the workers.

Weak coordination: It often takes longer for decisions made by managers to reach all parts of a large business and different group of workers. Employees can also take long time to react to a managerial decision once it has been taken. Top managers can become too removed from the products and markets the business operates in.

DISECONOMIES OF SCALE

THE CONCEPT OF BREAK-EVEN

Break-even level output is the quantity that must be produced/sold for total revenue to equal costs (also known as break-even point).

Break-even charts are graphs which show how costs and revenue of a business change with sales. They show the level of sales the business must make in order to break-even.

The break-even point is the level of sales at which total costs=total revenue

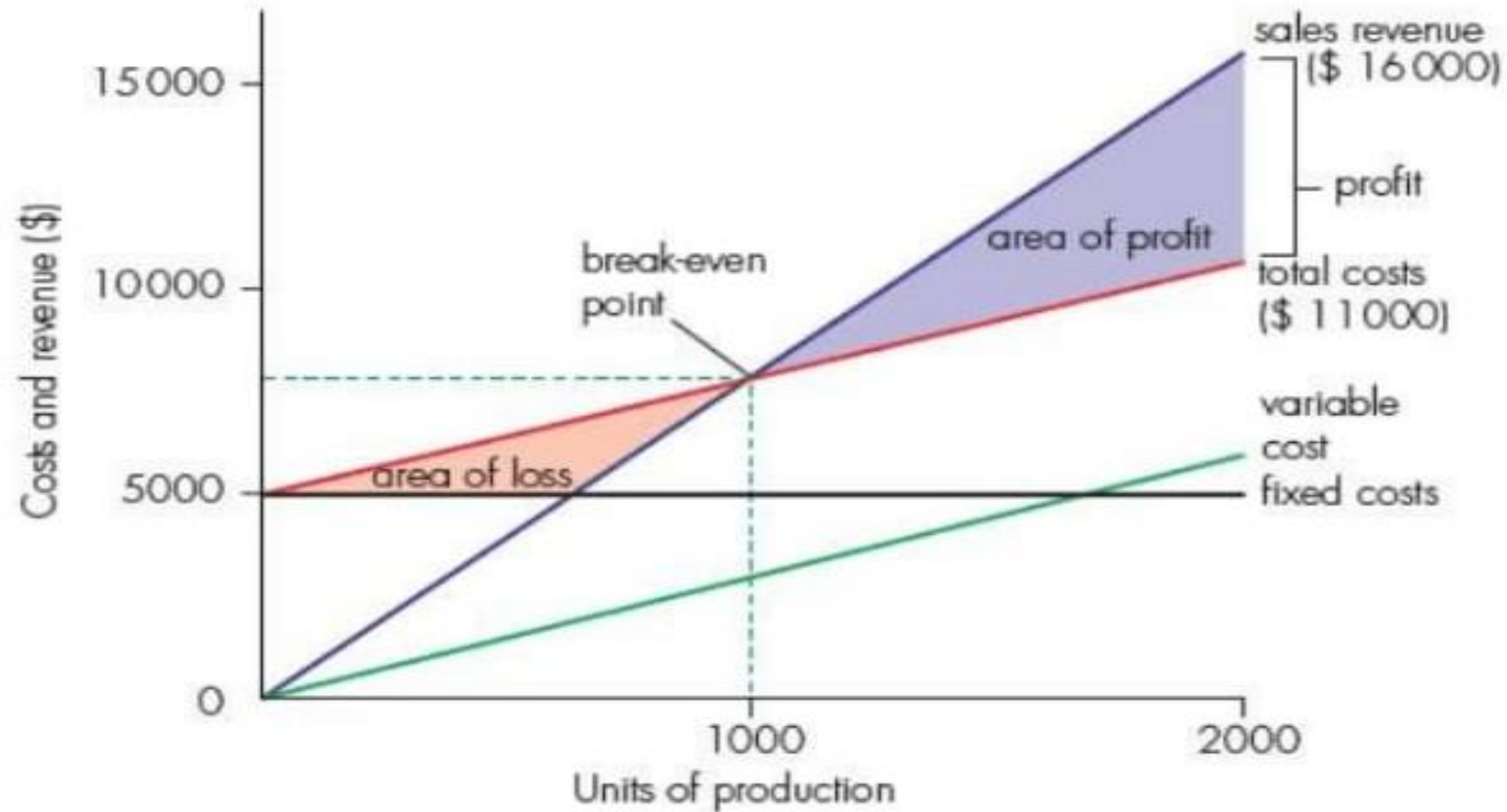
The revenue of a business is the income during a period of time from the sale of goods and services.
Total revenue=quantity sold*price.

DRAWING A BREAK-EVEN CHART

In order to draw a break-even chart, we need information about the fixed costs, variable costs and revenue of a business. For instance, in a shoe business, we will assume that fixed costs are \$5000 per year, the variable costs of each pair of shoes are \$3, each pair of shoes is sold for a price of \$8 and the factory can produce a maximum output of 2000 pairs of shoes per year

	Sales (\$) = 0 units	Sales (\$) = 500 units	Sales (\$) = 2000 units
Fixed costs	5000	5000	5000
Variable costs	0	1500	6000
Total costs	5000	6500	11000
Revenue	0	4000	16000

DRAWING A BREAK-EVEN CHART



USES OF BREAK-EVEN CHARTS

Advantages of break-even charts

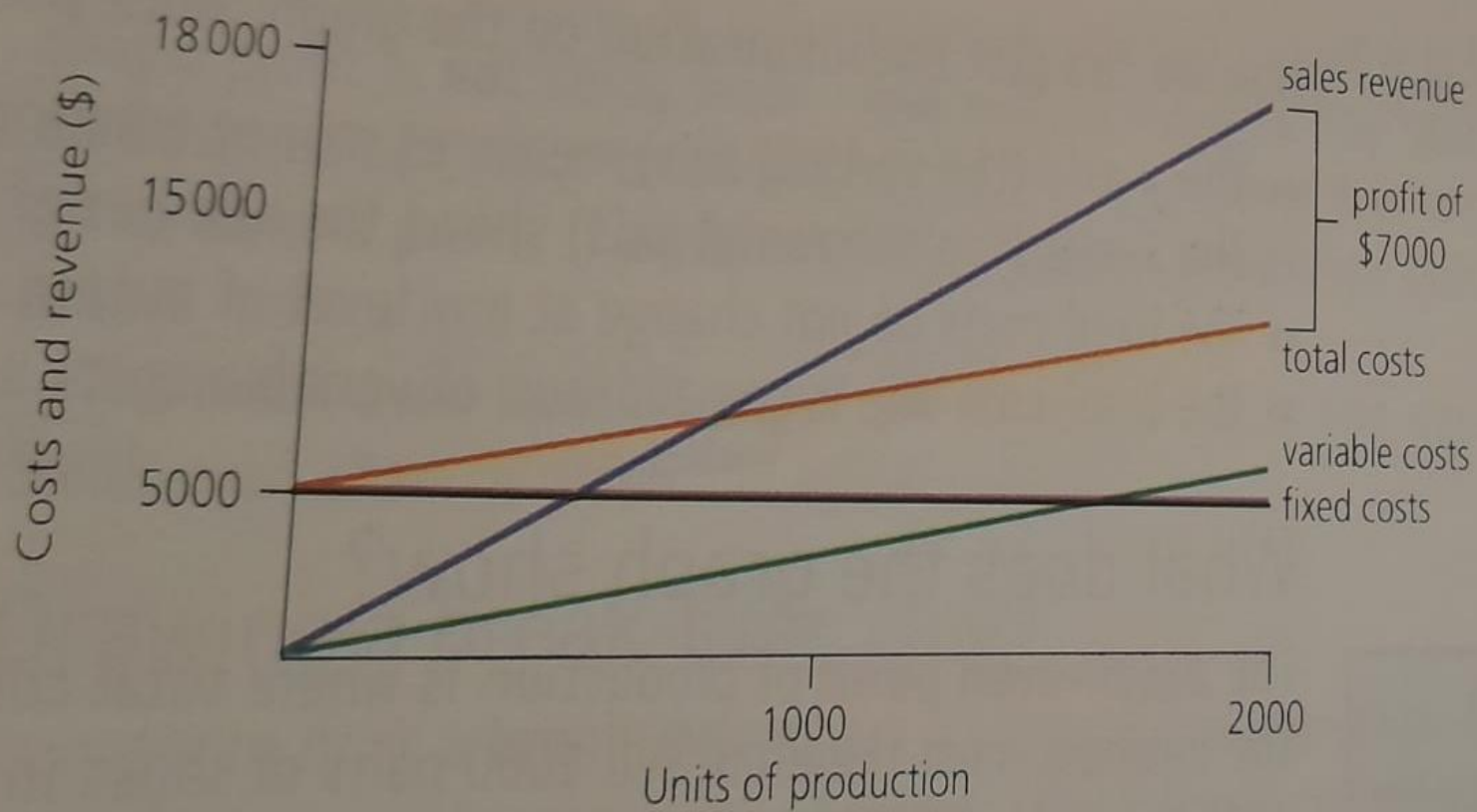
- Managers are able to read off from the graph the expected profit or loss to be made at any level of output.
- The impact of profit and loss of certain business decisions can also be shown by redrawing the graph.
- The break-even chart can also be used to show the margin of safety-the amount by which sales exceed the break-even point

USES OF BREAK-EVEN CHARTS

Limitations of break-even charts

- Break-even are constructed assuming that all goods produced by the firm are actually sold.
- Fixed costs only remain constant if the scale of production does not change.
- Break-even charts concentrate on the break-even point of production, but there are many other aspects of operations of a business which need to be analyzed by managers.
- The simple charts used in this section have assumed that costs and revenues can be drawn with straight lines. This will not often be the case!

USES OF BREAK-EVEN CHARTS



BREAK-EVEN POINT: THE CALCULATION METHOD

The contribution of a product is its selling price less its variable cost

Break-even level of production = Total fixed costs / Contribution per unit