COSTS (5.3)

(Chapter 29 - AS level 5.3)

Cost information is important as it is crucial to most business decisions. The measurement of costs must be accurate and relevant. Otherwise, the decisions made using inaccurate and irrelevant cost information will be poor.

Fixed Costs are costs that do not vary with output produced or sold in the short run. They exist even when the output is 0 and will remain the same in the short run. In the long-run they may change. Also known as overhead costs. (like *rent* for example, even if production has not started, the firm still has to pay the rent.)

Variable Costs are costs that directly vary with the output produced or sold. Like material costs and wage rates that are only paid according to the output produced. (piece-rate pay)

Marginal costs refer to the increase or decrease in the cost of producing one more unit or serving one more customer. So the marginal costs involved in making one more wooden table are the additional costs of wood, glue and screws plus the labour costs incurred.

TOTAL COST = TOTAL FIXED COSTS + TOTAL VARIABLE COSTS
TOTAL COST = AVERAGE COST **x** OUTPUT
AVERAGE COST (unit cost) = TOTAL COST/ TOTAL OUTPUT

Direct costs are the expenses associated explicitly with a business' operations.These costs can be clearly identified within each unit of production. For example, *labour*, *materials* and *fuel* are usually considered direct costs because they physically contribute to production.

Indirect costs are the expenses that can't be directly linked to the production of goods and services. They do not vary substantially with the amount produced, and so are considered to be fixed costs. For example, advertising costs, costs of cleaning services and cost of rent.

Problems with allocating costs :

Not all costs can be classified into 'fixed' or 'variable'. Some costs can be 'semi-variable.'

- **Labour** - can be either fixed (salaries, weekly wages etc.) or variable (piece-rate pay) therefore labour costs are considered semi-variable
- **Rent** - is usually a fixed cost, doesn't matter the amount produced rent still must be paid
- **Raw materials** - variable costs, the amount of materials bought depends on amount intended to be produced

The uses of cost information :

- **Setting prices** - Irregardless of the pricing strategy chosen (competitive, skimming etc.) the price of a product should usually be set so at least the variable costs (short-term costs) are covered. In the long run, a business must also be able to cover fixed costs so average costs are important as well
- **Help calculate profits** - profit = total revenue (sales) - total costs
- **Deciding what resources to use** - which suppliers to buy from through use of comparing the costs of competing suppliers
- **Deciding whether to stop production** - if the total cost exceeds the total revenue, a loss is being made, and so the production might be stopped, or a business may choose to alter the product/promotional activities to try salvage the situation
- **Deciding on the best location** - locations with cheaper costs (rent) will be chosen etc.
- **Whether or not to invest in a major project** - knowing the costs it would take to produce it and comparing those costs to the expected profits it may generate
- **Help to monitor and improve business performance -** by observing trends in costs, and comparing outcomes with set targets
- Calculating the **break-even point** of of production

Break-even

Break-even level of output is the output that needs to be produced and sold in order to start making a profit. So, the break-even output is the output at which **total revenue = total costs** (neither a profit nor loss is made, all costs are covered).

The **margin of safety** is the amount by which the sales level exceeds the break-even level of output. It measures the amount of sales required to turn a profit.
Margin of Safety (units) = **Units being produced and sold – Break-even output**

A **break-even chart** can be drawn that shows the costs and revenues of a business across different levels of output and the output needed to break even.

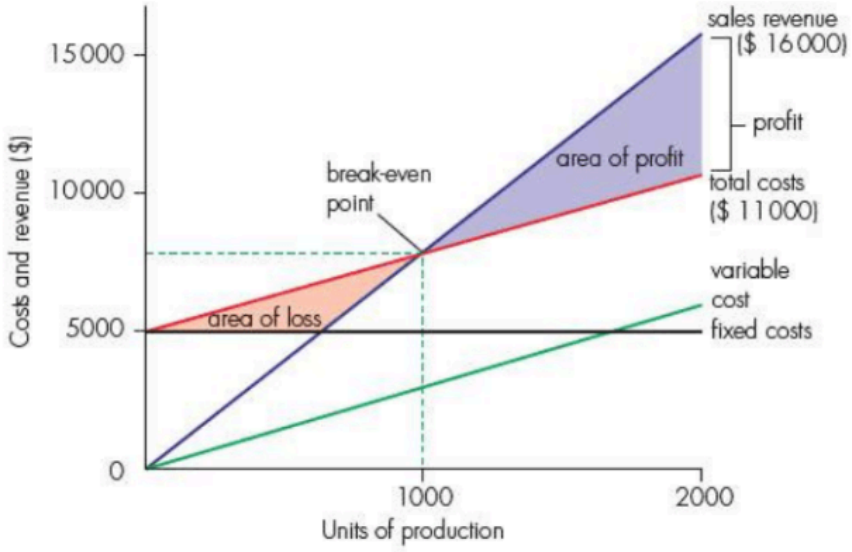
Advantages of break-even charts :

- Managers can look at the graph to **find out the profit or loss** at each level of output
- Relatively **quick** and **easy** to do, **helps to convince banks to invest**
- Managers can change the costs and revenues and redraw the graph to see how that would affect profit and loss, for example, if the selling price is increased or variable cost is reduced. (**perform 'what if' scenarios**.)
- **Assists managers in making business decisions** such as location decisions, whether to buy new equipment and which project to invest in (and if they have the money for it.)

Disadvantages of break even charts :

- They are **constructed assuming that all units being produced are sold**. In practice, there is always an inventory of finished goods. Not everything produced is sold off.
- **Fixed costs may not always be fixed** if the scale of production changes. If more output is to be produced, an additional factory or machinery may be needed that increases fixed costs.
- Break-even charts **assume that costs can always be drawn using straight line**s. Costs may increase or decrease due to various reasons. If more output is produced, workers may be given an overtime wage that increases the variable cost per unit and causes the variable cost line to steep upwards.
- Only tells you how many units you have to sell to break even **NOT the actual amount of sales you're going to make**

Example of analysing a break-even chart :



- In the chart above, costs and revenues are being calculated over the output of 2000 units.
- The fixed cost is 5000 across all output (since it is fixed!).
- The variable cost is $3 per unit so it will be $0 when output is 0 and $6000 at output 2000 - so you just draw a straight line from $0 to $6000.
- The total costs will then start from the point where fixed cost starts and be parallel to the variable costs (since T.C.= F.C.+V.C. You can manually calculate the total cost at output 2000: ($6000+$5000=$11000).
- The price per unit is $8 so the total revenue is $16000 at output 2000.

- Now the break-even point can be calculated at the point where total revenue and total cost equals – at an output of 1000. (In order to find the sales revenue at output 1000, just do $8*1000= $8000. Therefore the business needs to make $8000 in sales revenue to start making a profit).
- The margin of safety is the units being produced and sold - break even point, therefore 2000 - 1000 = 100. So if the business decided to sell 2000 units, their margin of safety would be 1000 units. In monetary terms with a selling price of $8 the business would be making $8000 in profit

<u>Break-even can also be calculated without drawing a chart. A formula can be used:</u>

$$\text{Break Even Point} = \frac{\text{Fixed Cost}}{\text{Selling Price Per Unit} - \text{Variable Cost Per Unit}}$$

Or (in the same terms) :

$$\text{Break Even Point} = \frac{\text{Fixed Cost}}{\text{Contribution Margin Per Unit}}$$

Contribution = Selling price – Variable cost per unit

(this is the value added/contributed to the product when sold)

In the above example, the fixed cost is 5000, the selling price is $8 and the variable cost is $3, so the contribution / value added = $5, so therefore break-even level is :

$5000 ➗ $5 = 1000 units

[I think i did a poor job at explaining this, as i still don't quite understand it myself.]

(Chapter 32 - A Level 5.3)

A **cost centre** is a role or department that costs the business money but does not generate revenue on its own. They are often administrative, service and support roles. These positions cannot be eliminated to cut costs because they are vital to a smoothly operating organisation. (Examples include HR, IT department, accounting etc.)

A **profit centre** is a role or department of a business that both costs the business money but also makes the business money in the form of revenue. (Examples include the sales department of a firm or a restaurant in a restaurant chain.)

Overhead costs refer to those expenses associated with running a business that can't be linked to creating or producing a product or service. (Another way to say indirect costs.) Overhead costs include rent, electricity bills, salaries etc.

> The difference between indirect costs (overhead) and fixed costs are that indirect costs are shared with other parts of a business. Fixed costs may or may not be shared.

Costing methods

Decisions relating to products and profit centres can be made using a variety of costing methods. The two main costing methods discussed are **full costing** and **contribution costing**.

Full costing :

Also known as **absorption costing**, a method of costing in which all fixed and variable costs are assigned to products, services or divisions of a business. It takes into account all costs.

Benefits of full costing :

✔ Mostly relevant for single-product businesses as there is no uncertainty about what share of costs should be assigned to which product

✔ Relatively easy to calculate and understand - easy to use for pricing decisions

✔ Gives a more accurate estimate of profit (since all costs are considered.)

Limitations of full costing :

✖ Absorption costing can cause a company's profit level to appear better than it actually is. This is because all fixed costs are not deducted from revenue unless all of the company's products are sold

✖ The assignment of costs must be consistent over time, otherwise it can be hard to compare

Contribution costing :

Also known as **marginal costing**, this costing method that assigns only direct costs (like the materials used to produce them) to products, services or divisions of a business. It does not include assigning indirect costs (like rent.)

Benefits of contribution costing :

✔ Does not try assign indirect costs like rent, salaries to a singular product or department

✔ Works best with businesses that produce more than one product. Using full costing when you produce multiple things can be tricky, as it's hard to determine which indirect costs to assign to which production/department. For example, in a building where there's an office space that does accounting with a warehouse space that stocks beneath it, which department do you assign the cost of the rent of that building to?

Limitations of contribution costing :

✖ Can be dangerous as it sometimes leads to overlooking indirect costs

Using contribution costing :

The **contribution margin** represents the amount of a product's sales revenue that isn't used up by variable costs, and so contributes to covering the company's fixed costs and overall profit.

If a product's **contribution margin is negative**, the company is losing money with each unit it produces, and it should either drop the product or increase prices. If a product has a p**ositive contribution margin**, it's probably worth keeping.

The following are some decisions that can be assisted with the use of contribution costing :

- **Whether to stop making a product** - If it's making a positive contribution, then continue. If it's making a negative contribution (losing money) then either consider its importance (does it have potential? Is it a part of a product range?) or stop producing it
- **To either accept a contract or special order at a discount** - a special order is like producing 'own brand' for supermarkets. (????)