

## Costing Methods

**Specification requirement**— Absorption and contribution costing. Standard costing. Special orders.

### Why Costing?

By calculating costs a firm will be able to calculate profits. Amazingly many firms do not know the actual costs of making their goods and so do not know how much profit each sale actually generates. A classic example of this was the original Mini car, which was sold at a loss for the first 10 years of production!

There are a number of ways of calculating costs. The 3 we worry about are

- Contribution Costing
- Absorption Costing
- Standard Costing

### Contribution Costing

Contribution costing is the simplest form of costing. With this method all direct costs related to the product are totalled, and then a contribution is added to the total to arrive a selling price.

For example a baker may calculate that the direct costs of a loaf of bread are;

Flour 50p

Water 2p

Yeast 3p

Packaging 5p

Total direct costs would be 60p.

The baker would then add an amount to these direct costs to arrive at a selling price. This amount is known as contribution.

The baker may add 50% to the direct costs, so this would be 30p. So the selling price of the bread would be 90p.

The role of contribution is to help pay for the indirect costs or the overheads of the firm, such as labour, power, rent, labour, etc. Once these overheads are paid for, the contribution becomes profit.

Contribution =

Selling price—direct costs.

Contribution costing makes a great deal of sense when a company produces a large number of different products, and it is difficult and time consuming to work out how to allocate the overheads in any meaningful way.

### Absorption Costing

It is obvious what some of the costs of production of specific goods are for example raw materials and direct labour, but there are other costs - indirect costs, or overheads, such as advertising, administration and so on, that are not directly related to a specific output.

Absorption costing methods try to allocate all these overhead costs to the products being

produced in a fair way, so true costs and profitability can be measured.

Overhead allocation is a key aspect of the use of absorption costing. Firms wishing to discover the true costs of producing a good and therefore an accurate way of pricing a good, will allocate a proportion of these overhead costs to a product. When they are added to the direct costs of production. Of the product, the full costs to the firm can be measured.

For example the cost of employing receptionists could be split amongst departments, or even allocated to a specific product.

**Calculating allocation of overheads.**

If overheads are not apportioned to the correct product, then the true costs of production will be distorted. Activity Based Costing tries to overcome this problem, it does this by allocating overheads to a product in line with estimated benefits received.

Look at the example question below.

A firm produces 3 goods, AA BB and CC.

The firm's overheads consist of ;

Marketing £30,000 a year

Administration £50,000 a year,

Deliveries and Packaging £40,000 a year.

The costs are apportioned according to sales quantity.

The firm sells

1000 of good AA at £250 each,

1500 of good BB at £500 each

2000 of good CC at £400 each.

The direct costs of producing each good are:

Good AA £120

Good BB £380

Good CC £300.

Given the above what is the total profit earned on each good, and what is the profit earned on each item sold?

	AA	BB	CC
<b>Revenue</b>	250,000	750,000	800,000
<b>Direct Costs</b>	120,000	570,000	600,000
<b>Overheads</b>	22.22%	33.33%	44.44%
<b>Marketing</b>	6660	10000	13340
<b>Admin</b>	11000	16650	23350
<b>Deliv.</b>	8880	13320	17800
<b>Profit</b>	£103,460	£140,030	£145,510

The table above shows that when we have apportioned overheads according to sales quantity, the profitability of each products is:

AA £103,460

BB £140,030

CC £145,510

**How to Calculate Allocation of Overheads**

**Step 1. Calculate total contribution for each good.**

Take the selling price, then from this take away the direct costs of production. This will give you contribution per unit sold. Multiply

this by quantity sold, and you have total contribution. This must be done for each of the goods. (Unsure of contribution? Then look at Break-even analysis)

### Step 2. Calculate overheads for each good.

Next we must work out how much of the total overheads (£120,000) each cost centre must have apportioned to it.. In this case we are told that overheads are allocated according to sales quantity. So to correctly share the overheads on this basis between each product, we must first calculate each products share of total sales quantity.

Total quantity sold is 4500 (sales quantity for each good added together). Good AA's sales quantity is 1000.

We simply work out 1000 as a percentage of 4500.

$$\text{So } \frac{1000}{4500} \times 100 = 22.22\%$$

We then repeat the calculation for each of the goods. So that we have each products % share of total sales quantity.

We use this share of total sales quantity to allocate overheads. Overheads total £120,000 (marketing, administration, deliveries and packaging totalled), we then use the % calculated to share out this £120,000 of overheads.

Step 3. We then take overhead allocation from total contribution to find Total Profit. To find profit per unit, divide Total Profit by quantity sold.

Looking at the figures on page 2 the most profitable product is Good CC, but the most profitable per unit sold is Good AA.

### What if we allocate overheads differently?

As we have already indicated, allocation of overheads can be somewhat arbitrary in nature, more of an art than a science. And in the case of the business we have been looking at, the method used to allocate overheads, by sales quantity, badly misjudged the actual use of overheads by each cost centre.

Within the business the real use of overheads is somewhat different.

Product AA takes up 60% of marketing's time and resources, 50% of administration's time and resources, and 40% of delivery and packaging's time and resources.

For product CC the figures are, marketing 10%, administration 10%, and packaging and delivery 20%.

Product BB uses the balance of each.

Given these figures calculate the profitability of each product.

Use the table on the next page to complete the calculation.. Remember overheads are now apportioned differently for each department and product and that you must re-allocate overheads according to the new figures (percentages above).

Once you have the answer, compare your results with the first question. How now would the managers views of each product change? Where would marketing money be best invested?

	AA	BB	CC
<b>Revenue</b>	250,000	750,000	800,000
<b>Direct Costs</b>	120,000	570,000	600,000
<b>Overheads</b>			
<b>Marketing</b>			
<b>Admin</b>			
<b>Deliv.</b>			
<b>Profit</b>			

will cause a fall in overall profitability. As long as a Cost Centre is making a contribution towards overheads, production should continue at least in the short term.

Remember that as long as a good is making a contribution, it is helping to cover overhead costs. If production is stopped, this contribution is lost, and the proportion of overheads covered and paid for by this contribution, must now be covered and paid for by remaining products, reducing the profitability of these products. Also there are other consequences to stopping production, or closing a profit centre. These consequences include redundancy costs, spare capacity, loss of customer loyalty, reduced cash flow, and fall in investment return. So it is not sensible just to stop production of a loss making good - there are financial, marketing and personnel consequences.

### Problems with overhead allocation.

Overheads that are apportioned or allocated incorrectly, can either underestimate or overestimate profits from cost centres. This can lead to one of two courses of action.

- If profits are overestimated then resources, such as investment capital or management time can be channelled to the wrong profit centre. A firms management may say 'look at profits of product A, or outlet B, they must be doing something right, lets concentrate on these'.
- Alternatively if incorrect allocation of overheads indicate low profits or even a loss, then the product may be discontinued or an outlet closed, when in fact this

The main problem with allocation of overhead costs is that most methods of allocating these costs are arbitrary ( based on personal preferences), and run the risk of distorting the true cost of producing a good.

For example, in the case of a receptionist who may be handling telephone enquiries and complaints. It may be that she spends most of her time dealing with enquiries about problems with product A, or with complaints about late delivery of product B, in these cases the larger proportion of the costs of employing the receptionist should be allocated to the cost centres responsible for product A, or deliveries of product B. But it would be quite normal to find the costs of employing her spread evenly across all cost centres.

## Standard Costing

Rather than continually calculating the actual costs of direct material, direct labour, and manufacturing overheads related to a product, many manufacturers use the simpler method of assigning the expected or standard costs involved. The standard cost is a planned cost for a producing unit of product or providing a service - not the final actual cost of manufacture. As a result there are almost always differences between the actual costs and the standard costs, and those differences are known as variances, (for more on variances see notes on Budgetary Control).

Given that the method is unlikely to be accurate, why therefore use standard costing?

### Advantages of Standard Costing

- Efficiency measurement-- The comparison of actual costs with standard costs enables the management to evaluate performance of cost centres. How close are they to standard costs? Why is one cost centre able to stick to standard costs and another not?
- Finding responsibility -The performance variances are determined by comparing actual costs with standard costs. Management is then able to identify where inefficiencies have occurred and who is responsible for these inefficiencies .
- Cost control-- Whenever a variance occurs, the reasons are studied and immediate corrective measures are undertaken. Management monitoring of variances means that it is possible to take corrective measures as soon as data is available
- It allows the use of Management by Exception--everybody is given a target to

be achieved, responsibilities are fixed and everybody tries to achieve their targets. The attention of the management is drawn only when actual performance is less than the budgeted performance - when an exception occurs.

- Eliminating inefficiencies-- The setting of standards for different elements of cost requires a detailed study of different aspects. As the nature of costs is investigated then improved methods are used for setting these standard costs. These studies will make it possible to eliminate inefficiencies.

### Problems with the use of Standard Costing

- It cannot be used when non-standard products are produced. If goods are made according to customer specifications, then each job will involve different amount of expenditures.
- The process of setting standard costs is a difficult task, as it requires technical skills. The examination of standard costs requires management time and money.
- The conditions under which standards are fixed often do not remain static. With these changes in circumstances, if the standards are not continually revised they become irrelevant. Frequent revision of standards will become costly
- The fixing of responsibility for costs and variances is not an easy task. Some variances might be uncontrollable. Standard costing is only useful when examining controllable variances.

### Special Orders.

A firm might occasionally receive a one-off order for its products that can increase

overall profitability, but involves selling at a price below the normal selling price. For example a firm that produces ice-cream receives an order for 10,000 litres of vanilla, the buyer suggests a price of 80p a litre. This is below the firm's normal selling price of 90p a litre. At a price of 90p each litre has a contribution of 20p, so at 80p the contribution is 10p.

So at 10p contribution per litre, sales of 10,000 litres would give a total contribution of £1,000.

A decision now needs to be made whether to accept this special order. This decision will be based on a number of factors.

- In the above case, we have assumed that there is spare capacity but it's important to ensure that there is really sufficient capacity before agreeing on special order.
- Will accepting the special order mean pushing capacity to its limit and potentially affecting quality for all customers?
- Who is the buyer? Are they the sort of buyer who the producer is targeting.
- Is the extra contribution / profit from the special order worth the potential qualitative costs?
- Will accepting the special order potentially lead to more regular custom in the future?
- Is there any better alternative use for spare capacity rather than accepting special order?
- Will accepting special order affect existing customer loyalty? - after all they are paying more
- Will accepting special order affect the brand value of the existing product?

## Notes