CHAPTER II

COST CONCEPT AND
ABSORPTION COSTING
"That's different from what I used to say when I was a child", said the Gryphon.
"Well, I never heard it before", said the Mock Turtle; "but it sounds uncommon nonsense."

The Lobster-Quadrille

"Profit Maximisation" is the prime objective of management in any economic enterprise. The formula for calculating profit is extremely simple: Sales price minus cost is equal to profit. This formula seems to suggest that there are two possible ways of achieving higher profits: (a) by increasing the selling price and (b) by reducing the cost. In the language of management the expression used for the process of adjusting, correcting, or manipulating a factor to the advantage of the management is 'control'. Accordingly, 'price control' and 'cost control' are the two feasible methods by which the management could achieve the objective of profit maximisation.

Price is a matter which depends upon the supply of and demand for the product in the market. Supply comes from the producers who would like to have higher price for their product to get higher profit. The demand comes from the consumers who would like to have the product at a lesser price to maximise their satisfaction. Thus, the producers want to apply their force to push up the price and the consumers, to pull down the price. Ultimately, the price has to settle down at a level where the forces of 'pull' and 'push' balance. The important point to be noted is that the market price is subjected to 'control' not only by the producers but also by the consumers.
As a matter of fact, in the modern market situations, where markets have become highly competitive and the consumers are more assertive, managements of business enterprises have relatively less control - or rather they cannot exercise much control - over the price. Under the circumstances, the managements could achieve their objective of 'profit maximisation' only by controlling the cost. Accordingly, managements have to be highly concerned with "cost control" for, if cost is controlled and minimised, profit could be maximised.

Cost means different things to different people and, more often than not, what one means by cost under a situation may not be the same under another situation. Actually most of the controversy over the existence of various kinds of costs evaporates once it is realised that there are different kinds of problems for which cost information is needed, and that the particular information required varies from one problem to another. The fact that accountants, economists and engineers are each concerned with study of cost for different purposes explains why there is a large variety of ideas about costs, many of which are adapted to different purposes.1 It has been rightly observed that "cost is a loosely used, often misused, term that defies a simple definition ..."2 Needless to emphasise that those who are concerned with cost should have a clear idea of the meaning of cost.


"A Dictionary for Accountants" by Eric L Kohler gives the meaning of cost as: "an expenditure or outlay of cash, other property, capital stock, or services, or the incurring of liability therefor identified with goods or services acquired or with any loss incurred, and measured by the amount of cash paid or payable or the market value of other property, capital stock, or services given in exchange or in other situations, any commonly accepted basis of valuation. Implicit in the concept is the accrual basis of accounting."¹

Crowning Shield and Gorman observe that "...cost represents an expenditure (a decrease in assets or an increase in liabilities) made to secure an economic benefit, generally resources that promise to produce revenue. The resources may have tangible substance (material or machinery) or they may take the form of services (wages, rent, power). Whatever their form, it is assumed that the expenditure will be subsequently recovered".²

The Committee on Cost Concepts and Standards opined that "for business purposes, cost is a general term for a measured amount of value purposefully released or to be released in the acquisition or creation of economic resources either tangible or intangible".³

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"In its most fundamental meaning, the term cost would seem to refer to some type of measured sacrifices evolving from an operational sequence of events and entering upon a particular activity or product."¹

In simple terms "a 'cost' may be defined as a sacrifice or giving up of resources for a particular purpose."²

Often it is found that the words 'cost' and 'expense' are used as if the two are synonyms. But, in fact, the words 'cost' and 'expense' do not mean the same and therefore one must be careful in the use of these words. The conceptual difference between 'cost' and 'expense' is that while all 'expenses' are costs, all 'costs' are not 'expenses'. This is so because cost represents expenditure (and it is an outlay) and expense is the expired or used up cost. "Cost is the amount, measured in money, or cash expended or other property transferred, capital stock issued, services performed, or a liability incurred, in consideration of goods and services received or to be received". Expenses are "all expired costs which are deductible from revenues".³ "... an expense may be defined as a measured outflow of goods or services, which is matched with revenue to determine income."⁴

³ AICPA Accounting Terminology Bulletin No.4.
Accountants differ in their view regarding the purpose of cost accounting. Some accountants are of the view that cost accounting is one phase of general accounting. According to them what cost accounting does is to report the details of cost accumulation to management and hence it is a part - one phase - of general accounting. Others are of opinion that there is a clear-cut distinction between financial accounting and cost accounting because they serve two different purposes.

The basic purpose of financial accounting is to report to 'outsiders' - creditors, investors, government authorities etc. - the matters relating to the financial position and profit of a firm as a whole. On the other hand the costing is primarily concerned with providing data and information to management - 'insiders' - to aid them in formulating managerial policies and making decisions.

As a system of 'accounting for reporting' cost accounting may be one phase of general accounting. But regarding the purpose of reporting, there is a world of difference between financial accounting and cost accounting. While financial accounting serves the purpose of reporting the financial position of the enterprise at a point of time to 'outsiders', cost accounting takes up reporting data and information for management for decision making.
Cost accounting could be employed to serve two distinctive purposes, namely, (a) to determine the cost of output and (b) to provide information to management for 'decision making'. "Historically, many cost accounting systems emphasized one cost objective - product costing for inventory valuation and income determination - as if it were an end in itself. Consequently other uses were subordinated and many systems failed to adapt the data to the needs of managers. However, modern systems have a more balanced approach; obtaining the cost of finished goods is regarded as only one of the functions of cost accounting system."\(^1\)

A closer look at the constituents of 'cost' would reveal that their character and nature vary from one constituent to another and a single concept of cost appropriate for all purposes is an impossible proposition. Herbert F Taggart who was the Chairman of the Advisory Committee on Cost Justification (Under Robinson - Patman Act, 1936) set up in USA in 1956 observed that, "The cost defenses which have been presented are as varied as the companies which have presented them. They agree on only one thing: cost justification is a complex procedure.... Part of the difficulty with cost justification is the lack of definition of terms and the complete absence of rules of the game."\(^2\) Therefore it is necessary that, depending upon the purpose for which cost data are collected, costs are to be properly classified.

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"...There are different kinds of problems for which we need information about costs, and that the particular information we need differs from one problem to another."¹ The need for proper classification of costs assumes greater importance because costing, as noted earlier, is employed not only for the determination of the cost of output but also for a more important propose of using cost data in planning and controlling - managerial decision making.

In conventional costing the emphasis is on determination of cost of output and, for the purpose of output costing, costs are broadly classified under two categories, namely direct and indirect costs - each category consisting of different elements of cost. The conventional costing system, in which costs are categorised into direct costs and indirect costs is popularly known as absorption costing or total costing system.

Absorption costing system basically aims at ascertainment of the cost of products produced. The cost of a product is the cost absorbed by it during the course and process of its production. Accordingly, what the absorption costing attempts to ascertain is the amount of cost absorbed by the units of output produced. As different elements of costs are involved in the course and process of production, each element of cost has to be traced to each unit of output in order to find out the cost of production of a unit. But certain costs cannot be directly traced to a unit of output and hence ascertainment of cost absorbed by an output becomes an extremely difficult task.

Most of the manufacturing, administrative and selling expenses are related to a range of volume of production - and not to a unit of production. It is almost impossible to ascertain the exact amounts of manufacturing, administrative and selling expenses that are involved in the production and sale of a unit of output. In contrast to the above mentioned costs, there are other elements of cost which are not difficult to be traced to a unit of output. Material and labour costs are the well known items under this category. From the point of view of traceability of costs to a unit of output, the elements of cost are of two categories - those which can be traced to a unit of output and those which it is very difficult to so trace.

In absorption costing system, costs which can be traced to a unit of output are designated as "direct costs" and those which cannot, as "indirect costs". The popular term used for indirect cost is 'overhead'. Thus, in absorption costing, the costs are classified, on the basis of their 'traceability' to a unit of output, as 'direct costs' and 'indirect costs' (or overheads).

Different organisational functions are involved in the production and sale of a product. They can broadly be classified under three functions: Production function, Administration function, and Distribution function. In absorption costing system costs are arranged, with reference to the above functions, in an order to calculate the total cost of sales.
FORMAT - 1.1

Cost Classification and Calculation

(Absorption costing system)

<table>
<thead>
<tr>
<th>Description</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Material</td>
<td>x x x x x</td>
</tr>
<tr>
<td>+ Direct Labour</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Prime cost</td>
<td>* * * * *</td>
</tr>
<tr>
<td>+ Manufacturing overhead</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Manufacturing cost</td>
<td>* * * * *</td>
</tr>
<tr>
<td>+ Administrative Overhead</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Cost of production</td>
<td>* * * * *</td>
</tr>
<tr>
<td>+ Selling and Distribution Overhead</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Cost of sales</td>
<td>* * * * *</td>
</tr>
</tbody>
</table>

It may be noted that only the elements of cost which constitute the Prime Cost, are direct costs and all other costs are indirect costs (or overheads).

A brief description of the different elements of cost which come under each of the items noted in the above classification of costs is presented in the chart given in the next page. The elements under each item are not exhaustive; they are representative only.
COST FOR A MANUFACTURING CONCERN

DIRECT MATERIAL

Raw materials
Semi-finished products
Finished products for assembly.

DIRECT LABOUR

Factory payroll

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PRIME COST

MANUFACTURING OVERHEAD

Indirect materials
Indirect labour
Rent
Payrolls
Property taxes
Depreciation of machinery
Repairs
Insurance

MANUFACTURING COST

ADMINISTRATION OVERHEAD

Office salaries
Executive salaries
Supplies
Rent
Depreciation of equipments
Telephone and telegraph
Travel
Property taxes
Payroll

COST OF PRODUCTION

SELLING AND DISTRIBUTION COSTS

Freight out
Depreciation of delivery equipments
Gas and oil
Auto repairs
Salaries - delivery persons
Warehouse costs
Insurance
Advertising

COST OF SALES
Under absorption costing, all costs incurred during a period are assigned to the products produced during that period. It is quite possible to assign the costs of direct material and direct labour to the products produced because they can be traced to (or identified with) individual units of output. But, overheads, the indirect costs, which cannot be traced to individual units of output, are to be allocated to the units produced on some reasonable basis. This would amount to an equitable assignment of costs to the outputs produced because all costs - direct and indirect - are taken into account in the calculation of the cost of outputs produced. "The assignment to goods or services produced of all costs relating in any way to the production or acquisition of those goods or services"¹ is the procedure under absorption costing in estimating the cost of output produced.

Under absorption costing, the total cost of the units produced during an accounting period is the sum of the direct costs and indirect costs assigned to the products. The total cost of the accounting period is divided by the number of units of output produced during the period to calculate the cost per unit of output. It is relevant to note that the said cost per output is, strictly speaking, 'the average cost per unit' rather than 'the cost per unit.' As this average cost is calculated from the total cost, which consists of direct and indirect costs, the average is obviously that of the direct and indirect costs assigned.

The average cost calculated, under the absorption costing system is taken for granted as the product cost. This product cost, by virtue of its being the average cost, would show that each unit of output turned out during a period has absorbed both direct and indirect costs whose amounts in any unit would be equal to those in any other unit produced in that period. The implication of the product cost in absorbing costing is that the products are 'cost homogeneous'. Assume that the direct costs and indirect costs incurred during a period are Rs.2,00,000 and Rs.3,00,000 respectively. If the production for the period is 2,00,000 units the product cost (cost per unit produced) is: (Rs. 2,00,000 + Rs. 3,00,000) / 2,00,000 = Rs. 2.5.

This product cost of Rs. 2.5 is the sum of the average direct costs and the average indirect costs: (Rs.2,00,000 / 2,00,000) + (Rs.3,00,000 / 2,00,000) = Rs. 2.5.

It is pertinent to note that the product cost calculated under the absorption costing system is the cost used in the valuation of inventory and thus it serves well an accounting purpose. It is a well accepted accounting practice and is in conformity with the Generally Accepted Accounting Principles. (This aspect of the absorption costing system could be cited to argue that costing is one of the phases of general accounting).

More often than not, all the units produced during an accounting period are not sold during the period itself. The unsold units are accounted
as inventory. The Generally Accepted Accounting Principle of valuing inventory is "cost or market price whichever is lower". Mostly the relevant figure will be the cost. Accordingly, the cost of unsold units should be shown as the value of the inventory. If the cost of a unit is known, then the cost of the unsold units (as well as that of the sold units) could be calculated by multiplying the unit cost with the number of unsold units (and sold units).

The important datum that the absorption costing system provides is the product cost without which inventory cannot be valued according to the accepted principles of accounting. As the cost of a unit of output produced during a period is equal to that of any other unit produced in that period, whether the units are kept in the inventory or sold, their cost is the same. The implications of this concept of product cost, particularly on the periodical profits reported (under absorption costing system), are worth noting.

The costs associated with the inventory units will be released only when the inventoried units are sold. In other words, it is only at the time of selling the product that the cost associated with the product will be treated as 'expired cost' or expense. It is to be emphasised that at one time or the other the cost will 'expire' (or become expense) and the precise time of 'expiration' is the time of the sale of the product.

Since (out of the units produced during a period) those units kept in the inventory would be sold only in a subsequent period, the costs associated
with those units would be treated as expense only in that subsequent period. Therefore, the costs associated with the inventory units are 'deferred costs'. Under absorption costing system, as the cost of the inventory consists of direct and indirect costs, both are considered 'inventoriable'. To demonstrate the effect of treating both direct and indirect costs as inventoriable in periodical profit statements, a hypothetical illustration is considered below:

The following data relate to J V Lamps Ltd. manufacturer of table lamps. The direct cost per unit, a lamp, is Rs.50 and the indirect cost for the period is Rs.1,20,000. The maximum capacity of production with the existing facilities is 1000 lamps in a period (in this case a month). The selling price per lamp is Rs.200, which is assumed to be stable over the periods. Under the above cost and price conditions the production, sales, and inventory particulars for three consecutive periods are given in table 1.1.

<table>
<thead>
<tr>
<th>Period</th>
<th>Production (in units)</th>
<th>Sales (in units)</th>
<th>Inventory (in units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1000</td>
<td>400</td>
<td>600</td>
</tr>
<tr>
<td>2</td>
<td>600</td>
<td>900</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>800</td>
<td>1100</td>
<td>0</td>
</tr>
</tbody>
</table>
Following the absorption costing system, the cost of output produced in each period is the sum of the total direct costs of the output produced during the period and the whole of the indirect costs incurred during the period. The total cost thus calculated for the output produced during a period would be proportionately allocated to the units sold and the units kept in inventory in that period. [For the purpose of this illustration First - In - First - Out (FIFO) method of disposal of inventory is assumed]. Following this procedure the total cost accounted for the units sold, the profit, and the cost accounted for the inventory in each period are detailed in tables 1.2, 1.3 and 1.4 below:

### Table 1.2

**J V Lamps: Cost Allocation and Profit Accounted**

**Period 1**

<table>
<thead>
<tr>
<th>Particulars of items</th>
<th>Accounted for the Production (1000 units)</th>
<th>Accounted for the Sales (400 units)</th>
<th>Accounted for the inventory (600 units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Cost</td>
<td>50,000</td>
<td>20,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Indirect Cost</td>
<td>1,20,000</td>
<td>48,000</td>
<td>72,000</td>
</tr>
<tr>
<td>Total Cost</td>
<td>1,70,000</td>
<td>68,000</td>
<td>1,02,000</td>
</tr>
</tbody>
</table>

Sales receipts

Profit: 12,000
### Table 1.3
J V Lamps: Cost allocation and profit accounted

**Period 2**

<table>
<thead>
<tr>
<th>Particulars of items</th>
<th>Accounted for the production (600 units)</th>
<th>Accounted for the Sales 600 units of previous period</th>
<th>Accounted for the Sales 300 units of this period</th>
<th>Accounted for the inventory (300 units of this period)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Cost</td>
<td>30,000</td>
<td>30,000</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Indirect Cost</td>
<td>1,20,000</td>
<td>72,000</td>
<td>60,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Total Cost</td>
<td>1,50,000</td>
<td>1,02,000</td>
<td>75,000</td>
<td>75,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>= 1,77,000</td>
</tr>
<tr>
<td>Sales receipts</td>
<td></td>
<td></td>
<td></td>
<td>1,80,000</td>
</tr>
<tr>
<td>Profit</td>
<td></td>
<td></td>
<td></td>
<td>3,000</td>
</tr>
</tbody>
</table>
### Table 1.4
J V Lamps: Cost allocation and profit accounted

**Period 3**

<table>
<thead>
<tr>
<th>Particulars of items</th>
<th>Accounted for the production (800 units)</th>
<th>Accounted for the Sales</th>
<th>Accounted for the inventory (0 unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>300 units of previous period</td>
<td>800 units of this period</td>
<td></td>
</tr>
<tr>
<td>Direct Cost</td>
<td>40,000</td>
<td>15,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Indirect Cost</td>
<td>1,20,000</td>
<td>60,000</td>
<td>1,20,000</td>
</tr>
<tr>
<td>Total Cost</td>
<td>1,60,000</td>
<td>75,000</td>
<td>1,60,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,35,000</td>
<td></td>
</tr>
<tr>
<td>Sales receipts</td>
<td></td>
<td>2,20,000</td>
<td></td>
</tr>
<tr>
<td>Loss</td>
<td></td>
<td>15,000</td>
<td></td>
</tr>
</tbody>
</table>
Figures of Profit for the three periods show that the periodical profit over the years has been decreasing - from Rs.12,000 in the first period to Rs. 3,000 in the second period to Rs. 15,000 loss in the third period. It is curious to note that while the sales volume over the period shows an increasing trend the profit over the periods shows a decreasing trend.

Table 1.5
J V Lamps: Sales and profit over the periods

<table>
<thead>
<tr>
<th>Period</th>
<th>Sales</th>
<th>Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Units</td>
<td>Rs.</td>
</tr>
<tr>
<td>1</td>
<td>400</td>
<td>80,000</td>
</tr>
<tr>
<td>2</td>
<td>900</td>
<td>1,80,000</td>
</tr>
<tr>
<td>3</td>
<td>1,100</td>
<td>2,20,000</td>
</tr>
</tbody>
</table>

By looking at the increasing trend of sales and decreasing trend of profit if one makes an inference that 'the larger the sales the smaller will be the profit and the smaller the sales the larger will be the profit', it cannot be stated that the inference is logically incorrect.

As far as the relationship between inventory and profit is concerned it could be seen that, over the years, both the periodic profit and inventory level show a decreasing trend.
Table 1.6
J V Lamps: Inventory level and profit over the periods

<table>
<thead>
<tr>
<th>Period</th>
<th>Inventory level (Units)</th>
<th>Inventory level (Rs.)</th>
<th>Profit (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>600</td>
<td>1,02,000</td>
<td>12,000</td>
</tr>
<tr>
<td>2</td>
<td>300</td>
<td>75,000</td>
<td>3,000</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>(15,000)</td>
</tr>
</tbody>
</table>

The relationship between the periodic inventory and profit seems to suggest that 'the larger the inventory the larger will be the profit and the smaller the inventory the smaller will be the profit'.

The trends of production and profit over the periods on the other hand do not show any consistent trend relationship.

Table 1.7
J V Lamps: Production level and profit over the periods

<table>
<thead>
<tr>
<th>Period</th>
<th>Inventory level (Units)</th>
<th>Inventory level (Rs.)</th>
<th>Profit (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,000</td>
<td>1,70,000</td>
<td>12,000</td>
</tr>
<tr>
<td>2</td>
<td>600</td>
<td>1,50,000</td>
<td>3,000</td>
</tr>
<tr>
<td>3</td>
<td>800</td>
<td>1,60,000</td>
<td>(15,000)</td>
</tr>
</tbody>
</table>
The production level shows a decrease from 1000 units in the period 1 to 600 units in period 2. The decreasing trend in the production - from period 1 to period 2 - is followed by a decreasing trend in profit too - profit shows a decrease from Rs.12,000 in period 1 to Rs. 3,000 in period 2. But when the production shows an increase from 600 units in period 2 to 800 units in period 3, the profit shows a decrease from Rs.3,000 in period 2 to a loss of Rs. 15,000 in period 3. Thus while the production trend from period 2 to period 3 shows an increase that of profit shows a decrease. With reference to the data in the hypothetical (J V Lamps) illustration the following inferences may look possible by relating the profit trend with the sales trend, inventory trend, and production trend:

a. The larger the sales the smaller the profit; the smaller the sales the larger the profit.
b. The larger the inventory, the larger the profit; smaller the inventory, the smaller the profit, and
c. The profit trend does not have a consistent relationship with the trend of production level.

If these inferences are taken to be correct they would suggest that periodical profit could be increased by decreasing sales or increasing inventory. This provides an interesting paradox that though these propositions with reference to the illustration considered seem to be logically tenable, their absurdity is apparent. The fallacy involved in the three inferences needs to be exposed.
It may be noted that, irrespective of the fact whether the units of output produced in a period are sold or not in the same period itself, the cost of a unit of output is the same for all the units produced in a period. The cost (which includes both direct and indirect costs) related to the sold units is released as expense in the period of sale and the cost related to the unsold units is inventoried to be treated as expensed at the time of disposal of the inventory. Though the cost of every unit produced in a period is the same, cost per unit would show variation from period to period depending upon the number of units produced in different periods. Thus, if the total number of units produced in period 1 is different from the total number of units produced in period 2 the cost of a unit produced in period 1 and cost of a unit produced in period 2 will be different.

In the example, production in the first period being 1000 units and the total cost being Rs. 1,70,000, the cost per unit is Rs. 170. In the second period the cost per unit is Rs.250 because the production is 600 units and the total cost is Rs. 1,50,000. The production and cost in the third period being 800 units and Rs. 1,60,000 respectively the cost per unit is Rs. 200.

The units sold in a period may consist of units produced in that period and units brought forward from the inventory of the previous periods. For example, the 900 units sold in period 2 consists of 600 units produced in period 1 and 300 units produced in period 2. So also the 1100 units sold in period 3 consist of 300 units produced in period 2, and 800 units produced in period 3.
As units produced in different periods have different unit costs, all the units sold in a period will have the same unit cost only if all the units sold were produced in a particular period. Even if all the units sold in a particular period belong to the production of that (or a particular) period, unless the number of units produced in every period is the same, the unit cost from period to period would vary. Obviously, when the number of units produced vary from period to period, and the units sold in a period consist of units produced in different periods, the unit cost of all the units sold in a period will not be the same. As the price per unit is (assumed to be) the same for all the periods, the profit per unit in respect of all the units sold in a period will not be the same if the units sold consists of units belonging to different periods of production.

It is evident that, when the units sold in a period consist of the units produced in that period and the units produced in the previous periods (the inventory of previous period/s), the total cost of the units sold will depend upon the quantity and cost of the units belonging to different production periods.

The cost per unit is related to the volume of production during the concerned period. The more the volume of production in a period, the less the cost per unit.
Table 1.8
J V Lamps: Production and Cost per unit over periods

<table>
<thead>
<tr>
<th>Period</th>
<th>Production (Units)</th>
<th>Total Cost (Rs.)</th>
<th>Cost per unit (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>600</td>
<td>1,50,000</td>
<td>250</td>
</tr>
<tr>
<td>3</td>
<td>800</td>
<td>1,60,000</td>
<td>200</td>
</tr>
<tr>
<td>1</td>
<td>1,000</td>
<td>1,70,000</td>
<td>170</td>
</tr>
</tbody>
</table>

In all the periods price per unit being Rs. 200, in whichever period the units are sold, each unit belonging to the production of period 1 will give a profit of Rs. 30; each unit belonging to the production of period 2 will show a loss of Rs.50, and each unit belonging to the production of period 3 will show neither a loss nor a profit. If the units sold in a period are or largely consists of the units produced in a period of larger production volume, the profit for that period would be greater than what it would be if the units sold are or largely consists of the units produced in a period of smaller production volume. If the units sold in a period consist of the inventory brought forward from the previous period, the important factors that affect the profit of the period are the number of units included from the inventory in the sales and the cost attached to them.
In period 2 the number of units sold is 900 and the profit accounted is
only Rs. 3000 which is far less than the profit of Rs. 12,000 for a sale of only
400 units in period 1. The 400 units sold in period 1 are part of the 1000
units produced in period 1 and each of these units cost Rs. 170. All the 400
units, being sold for Rs. 200 each, gave a profit of Rs. 30 each. (Total profit
accounted for the period is Rs. 12,000). On the other hand, the 900 units
sold in period 2 consists of 600 units produced in period 1 and 300 units
produced in period 2. As the cost per unit in period 1 is Rs. 170 and the
cost per unit in period 2 is Rs. 250, of the 900 units sold in period 2, the cost
per unit of 600 units (belonging to the production of period 1) is Rs. 170 and
the cost per unit of 300 units (belonging to the production of period 2) is Rs.
250. Though the 900 units sold in period 2 are sold for Rs. 200 each, because
of the difference in the cost accounted for the 600 units of period 1 and 300
units of period 2, the 600 units accounted a profit of Rs. 30 each and the 300
units accounted a loss of Rs. 50 each. Thus the total profit of Rs. 3,000
accounted in period 2 for the sale of 900 units is the sum of profit Rs. 18,000
from 600 units and loss of Rs. 15,000 from 300 units.

Similarly the 1100 units sold in period 3 consist of 300 units belonging
to the production of period 2 and 800 units belonging to the production of
period 3. The cost per unit in respect of the 300 units is Rs. 250 and the cost
per unit in respect of 800 units is Rs. 200. The loss accounted in period 3 is
Rs. 15,000, which is the sum of loss Rs. 15,000 from 300 units (at the rate of
Rs. 50 each) and no-loss no-profit from 800 units.
In period 2 the profit accounted is considerably less compared to the profit accounted in period 1. This is so because, of the units sold the units belonging to the production volume of the period bear a higher unit cost than the unit cost of the units belonging to the production volume of the previous period. The unit cost of the products produced in period 2 is relatively high because the production volume in that period is relatively low.

In period 3 the profit position (loss), is still worse. In this period, of the units sold the units belonging to the production volume of the period are not themselves responsible for the loss shown. These units cost only Rs.200 each which is equal to the price. The loss is due to that part of the sold units which belong to the previous period. Their cost is Rs.300 each.

From these points it is clear that, under absorption costing system the periodic profit is not a function of sales because the variation in the periodic profit is not functionally related to the volume of sales. (Note : In the example considered though the sales and profits for the three periods show that ‘the larger the sales the lesser the profit’ it may not be true in all cases. Depending upon the cost and price data the sales-profit relation will vary.)

Under absorption costing, depending upon the variation in the volume of production, the cost of production accounted vary from period to period.
The cost accounted for the units sold in a period depends upon the units belonging to the previous year/s (inventory of the previous year/s) and the units produced in the period. As the sales price is (assumed to be) constant over the periods the periodic profits accounted under absorption costing, is a matter related to the cost of the units sold which, in turn, depends on the periodic production volume and level of inventory. Accordingly, profit is a function of production as well as inventory.

Under absorption costing system the cost of a unit of output (the average cost) is, more or less, the cost of a unit produced and not the cost for producing a unit. This is evident from the fact that the costs incurred in a period are allocated proportionately to the goods produced in the period. If the cost per unit is the cost for producing a unit, then whatever be the number of units produced in a period the cost per unit produced should remain constant. For example, in the illustration problem, the number of units produced in period 2 is 600 and the cost per unit is Rs. 250. This unit cost of Rs. 250 is the cost of a unit produced. If this unit cost is taken as the ‘cost for producing’ a unit then by producing more than 600 units the cost per unit should remain at Rs. 250 itself. But under absorption costing the cost per unit when the production volume is 600 units and the cost per unit when the production volume is 601 units are not the same.
<table>
<thead>
<tr>
<th></th>
<th>Production 600 units (Rs.)</th>
<th>Production 601 units (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct cost</td>
<td>30,000</td>
<td>30,050</td>
</tr>
<tr>
<td>Indirect cost</td>
<td>1,20,000</td>
<td>1,20,000</td>
</tr>
<tr>
<td></td>
<td>1,50,050</td>
<td>1,50,000</td>
</tr>
<tr>
<td>Cost per unit</td>
<td>250</td>
<td>249.67 (approx)</td>
</tr>
</tbody>
</table>

It is clear that the average cost does not indicate the 'cost for producing' a unit. The information most relevant for the purpose of 'cost control' is the cost for producing an additional unit rather than the average cost of a unit at a given level of production. If the total cost of production varies proportionately to the volume of production, then the average cost would remain constant irrespective of the volume of production. In that case, the average cost of production can be taken as the 'cost for producing' an additional unit and, under constant price assumption, the profit per unit would be constant and the total profit would vary proportionate to the volume of sales.

Under absorption costing system, with the change in the volume of production, the average cost also changes and hence the variation in the total cost is not proportionate to the change in the volume of production. As the average cost of production changes with the volume of production, units belonging to different volumes of production would have different average
costs. In a period if the units sold consist of units belonging to different production volumes of different periods, profit per unit not being the same for all the units sold in the period, the variation in total profit associated with different volumes of sales will not be proportionate to the variation in the volume.

It follows from the above that the system of absorption costing is meant for tracing the costs incurred to the volume of output produced to calculate the average cost of production and to project periodic profits by matching the cost of the goods sold with the revenue from the sales effected. The system provides for the calculation of profit by matching sales and related costs but does not provide for the evaluation of cost and profit.

Those who are concerned with 'cost data for managerial use for controlling' consider the information regarding the trend or behaviour of cost, rather than the cost, as more useful for 'decision making'. "The accountant's responsibility is to be certain that the manager is guided by relevant data, information that will lead the manager to the best decision. (In the final stages of decision making process) two - or more - courses of action are aligned, and a comparison is made. The decision is based on the difference in the effect of the two on future performance. The key question is, what difference does it make? The relevant information is the expected future data that will differ among alternatives."¹

Effective and efficient cost and profit planning and control demand a proper understanding of the behaviour of costs and the Management Accountant must be able to forecast the cost trends correctly to help the management to evaluate the different alternative courses and decide the right course. "In fact, being able to predict cost behaviour is the keynote of management accounting, the sine qua non, as it were, of accounting as a management tool. The accountant's analysis of cost behaviour is as important to him as the saw and hammer are to the carpenter. Only after cost behaviour patterns have been set, can the accountant assume his role as a Key man on the management team."¹

The fallacy involved in projecting a cost-volume-profit relationship under absorption costing system, as demonstrated by the example of J V Lamps Ltd., considered in this chapter, is that they are not functionally related. The cost classification under this system does not consider behavioural pattern of the different elements of the cost.

If one intends to control a person or a thing he must have a proper understanding of the person or the thing to be controlled. Behaviour of a person or a thing is how he or it acts and reacts. What strategy (or strategies) is (or are) to be adopted to control a person or a thing can be formulated only by knowing how that person or thing would act and react in different situations. Similarly, proper cost control could be exercised and effected by the management only if it knows the behaviour of costs.

Therefore, a knowledge of how costs behave is important to the management to chalk out its strategies to make the cost control effective and efficient.

In an attempt to make the cost accounting more useful and purposeful a different approach, from what has been conventionally followed, was introduced to classify the costs according to their 'behaviour'. This "behavioural approach" focuses its attention on the nature of the behaviour of different costs, the factors that influence the behaviour of different costs, the behaviour of costs over time, the relevance of cost behaviour in product costing and the treatment in management accounting of costs according to their behaviour. Under this approach costs are classified, according to their behaviour, into variable costs and non-variable costs (popularly known as fixed costs). This classification is in contrast to the classification of costs into 'direct costs' and indirect costs' under the conventional absorption costing system.

The classification of costs into 'variable costs and non-variable costs' and their treatment in accounting for cost form the foundation on which the edifice of Marginal Costing - also known as contribution approach, or variable costing, or direct costing - is built up.