13. MARGINAL COSTING

BB-1

BLOCK NO 1 : HOW TO PREPARE INCOME STATEMENT UNDER MARGINAL COSTING

INCOME STATEMENT UNDER MARGINAL COSTING

Particulars	₹	₹
A Sales		XXX
B Less: Variable Cost of Sales:		
(a) Direct Material Cost	XXX	
(b) Direct Labour Cost	XXX	
(c) Direct Expenses	XXX	
(d) Variable Production Overheads	XXX	
Variable Cost of Goods produced	XXX	
Add: Opening Stock	XXX	
Less: Closing Stock	(XXX)	
Variable Cost of Goods sold	XXX	
Add: Variable Administration Overheads	XXX	
Add: Variable Selling and Distribution Overheads	XXX	
Variable Cost of Sales		XXX
C Contribution [A - B]		XXX
D Less: Fixed Overheads:		
Fixed Production Overheads	XXX	
Fixed Administration Overheads	XXX	
Fixed Selling and Distribution Overheads	XXX	XXX
E Profit under Marginal Costing (C - D)		XXX

BB-1

BB-2

BLOCK NO 2 : WHAT IS DIRECT COSTING?

Direct costing is the practice of charging all direct costs to operations, processes or products and writing off all indirect costs against the profits in the period in which they arise.

CIMA, London, defines the 'Direct Costing' as *"the practice of charging all direct costs to operations, processes or products, leaving all indirect costs to be written off against profits in the period in which they arise".*

Basic Features

(a) All costs are classified as direct costs and indirect costs.

(b) Only direct costs are treated as product costs and hence are charged to operations, processes or products.

(c) All indirect costs are treated as period costs and hence are written off against the profits in the period in which they arise.

How different from Marginal Costing

Direct Costing differs from Marginal Costing in the sense that some fixed costs could be considered to be direct costs in appropriate circumstances.

BB-3

BLOCK NO 3 : WHAT IS DIFFERENTIAL COSTING?

Differential Costing is a technique of decision-making in which differential costs of various alternatives are compared with the differential revenues for the purposes of choosing between competing alternatives. So long as the incremental revenues exceed incremental costs, the decision should be in favour of the proposal.

BB-3

Meaning of Differential Cost

Differential Cost is the net increase or decrease in total cost which results from any variation in level of operations. It includes both fixed and variable costs. It is termed as incremental cost when the cost increases and as decremented cost when the cost decreases.

How Different Marginal Cost

Differential Cost differs from the Marginal Cost in the sense that Marginal Cost includes the material, labour, direct expenses and variable overheads whereas Differential Cost includes both fixed and variable costs.

Applications

Some of the areas in which differential cost technique is used are whether to process further or not, whether to accept an additional order at lower than existing price.

BB-4

BLOCK NO 4 : What is absorption costing and Marginal costing.

ABSORPTION COSTING

Absorption Costing is the practice of charging all variable manufacturing costs (i.e. Direct Material Cost, Direct Labour Cost, Direct Expenses and Variable Production Overheads) and fixed production overheads to operations, processes or products and writing off all administration, selling and distribution overheads against the profits in the period in which they arise.

Note: The fixed production overheads are absorbed at a rate predetermined on the basis of normal capacity utilization and not on the basis of actual production.

CIMA, London, defines the 'Absorption Costing' as 'the practice of charging all costs, both variable and fixed, to operations, processes or products.

BB-4

Basic Features

(a) All costs are classified on functional basis as Production costs, Administration costs, Selling costs, Distribution costs.

(b) All variable manufacturing costs and fixed production overheads are treated as product costs and hence are charged to operations, processes or products.

(c) All administration, selling and distribution overheads are treated as period costs and hence, are written off against the profits in the period in which they arise.

According to Absorption costing , we consider both variable cost and fixed cost while taking decision.

According to Marginal costing techniques, only variable cost is considered while taking decision. i.e. Fixed cost is not considered while taking decision.

Eg: A company produces product A.

Normal Production capacity = 2,00,000 units

Actual Production = 2,00,000 units

Max Production Capacity = 2,30,000 units.

Total fixed cost = 20,00,000

Variable cost p.u. = ₹6

Selling Price p.u. = ₹25

Now suppose this company gets an offer to sell Mr. Lalla 20,000 units@ ₹11 p.u. Should company accept the offer ?

Solution : F. cost p. u.

$$= \frac{₹20,00,000}{2,00,000 \text{ units}} = ₹ 10 \text{ p.u}$$

+ V. C. p.u. = ₹ 6 p.u

∴Total cost p.u. = Rs 16 p.u

As per Absorption costing techniques, offer should not be accepted because offered selling price p.u. (₹11) is less than cost p.u. (₹16).

BB-4

As per Marginal costing only variable cost. (₹6.p.u) shall be incurred in producing addition 20,000 units to Mr. Lalla offered selling price p.u. is ₹11 is more than variable cost p.u. (₹6). Hence it provides benefit of ₹5.p.u. . Therefore offer should be accepted.

NOTE : Fixed cost is not considered in decision making as per Marginal costing technique but FC is reduced to calculate Profit.

DISTINCTION BETWEEN ABSORPTION COSTING AND MARGINAL COSTING

Basis of Distinction	Absorption Costing	Marginal Costing
1. Product Costs	All variable manufacturing costs and fixed production overheads are treated as product costs and hence, are charged to product, processes or operations	Only variable manufacturing costs are treated as product costs and hence, are charged to products, processes or operations.
2. Period Costs	Only administration, selling and distribution overheads are treated as period costs and hence, are written off against the profits in the period in which they arise.	All fixed costs i.e. Production/ Administration/Selling/ Distribution Overheads are treated as period costs and hence are written off against profits in the period in which they arise.
3. Value of Stock	Value of closing stock includes fixed production overheads.	Value of closing stock comprises only variable costs.
4. Under/over Recovery	Under/over recovery of fixed overheads generally arises.	The question of under/over recovery of fixed overheads does not arise.

5. Basis of Managerial Decisions	Managerial Decisions are based on total profit i.e. excess of total sales revenue over total costs.	Managerial Decisions are based on contribution i.e. excess of sales revenue over over variable costs.

HOW TO PREPARE INCOME STATEMENT UNDER ABSORPTION COSTING

INCOME STATEMENT UNDER ABSORPTION COSTING

BB-4

Particulars	₹	₹
A Sales		XXX
B Less: Manufacturing Cost of Goods sold:		
(a) Direct Material Cost	XXX	
(b) Direct Labour Cost	XXX	
(c) Direct Expenses	XXX	
(d) Variable Production Overheads	XXX	
(e) Fixed Production Overheads	XXX	
Total Cost of Goods Produced	XXX	
Add: Opening Stock@	XXX	
Less: Closing Stock @	(XXX)	
Standard Cost of Goods Sold	XXX	
Add: Under-absorbed Fixed Production Overheads	XXX	
Less: Over-absorbed Fixed Production Overheads	(XXX)	
Adjusted Manufacturing Cost of Goods sold		XXX
C Gross Profit (A - B)		XXX
D Less: Administration, Selling & Distribution Overheads:		
Variable Administration Overheads	XXX	
Fixed Administration Overheads	XXX	
Variable Selling and Distribution Overheads	XXX	
Fixed Selling and Distribution Overheads	XXX	XXX
E Profit under Absorption Costing (C-D)		XXX

RECONCILIATION OF PROFIT UNDER MARGINAL COSTING WITH THE PROFIT UNDER ABSORPTION COSTING

BB-4

STATEMENT SHOWING THE RECONCILIATION OF PROFIT

Particulars	₹
A Profit under Marginal Costing	XXX
B Add: Fixed Production Overheads included in Closing Stock @...	XXX
C Less: Fixed Production Overheads included in Opening Stock @....	XXX
D Profit under Absorption Costing [A + B- C]	XXX

BLOCK NO 5: Meaning of contribution.

BB-5

Under Marginal costing Excess of Selling Price p.u. over variable cost p.u. is called as contribution.

Contribution p.u. = Selling price p.u. - variable cost p.u.

Total contribution = Total sales value - Total variable cost

In layman language , contribution means profit before reducing fixed cost.

BLOCK NO 6: Derivations of other formulas of total contribution.

We know that,

BB-6

Total Sales - Total variable cost - Total fixed cost = Total profit

Total Contribution = Total fixed cost +Total profit

In case of loss:

Total Contribution = Total fixed cost – Total loss

BLOCK NO 7: Marginal cost equation.

BB-7

Particulars	Amt₹
Sales	xxx
(-) Variable cost	(xx)
Contribution	xx
(-) Fixed cost	(xx)
Profit	xx

BLOCK NO 8:

BB-8

$$\text{Contribution to sales ratio} = \frac{\text{Total contribution}}{\text{Total sales}} \times 100$$

OR

$$= \frac{\text{Contribution p.u.}}{\text{Selling price p.u.}} \times 100$$

Contribution to sales ratio is always expressed in %.

It is also called as,"PROFIT VOLUME RATIO" (P/V Ratio)

CONTRIBUTION TO SALES RATIO.

(FC ignored)

Profit ..... Sales value/ volume

i.e. why P/V Ratio.

BLOCK NO 9: Break - Even point

BB-9

BEP is that level of sales at which company earns 'no Profit no loss'

BEP Sales are expressed in units or in value.

We know that,

Total sales – Total variable cost – Total fixed cost = Total profit

At BEP,

Total Profit is Zero,

units x s.p.p.u. - units x v.c.p.u. - Total FC = 0

Units (s.p.p.u - v.c.p.u.) = Total FC

Units x contribution p.u. = Total FC

Unit is (at which profit is zero) = $\frac{\text{Total FC}}{\text{contribution p.u.}}$

BB-9

BEP Sales (units) = $\frac{\text{Total FC}}{\text{Contribution p.u.}}$ (Formula 1)

On multiplying both sides by s.p.p.u.

BEP units x s.p.p.u. = $\frac{\text{Total FC}}{\text{Contribution p.u.}}$ x s.p.p.u

BEP sales (in ₹) = $\frac{\text{Total FC}}{\frac{\text{Contribution p.u.}}{\text{s.p.p.u.}}}$

BEP sales (in ₹) = $\frac{\text{Total FC}}{\text{P/V Ratio}}$ (Formula 2)

BLOCK NO 10 : Caluation of PV Ratio using BEP Sales (in ₹)

BB-10

P/V ratio = $\frac{\text{Contribution}}{\text{Sales}}$ x 100

= $\frac{\text{FC + Profit}}{\text{Sales}}$ x 100

At BEP ⟶ profit will be zero.

P/V Ratio = $\frac{\text{FC}}{\text{BEP Sales}}$ x 100

BB-11

BLOCK NO 11: calculation of P/v Ratio when Profit & sales (₹) of 2 periods are given.

$$P/v\ Ratio = \frac{Difference\ in\ profit}{Difference\ in\ Sales} \times 100$$

Derivation:

	Period 1	Period 2
Sales(₹)	S1	S2
Profit(₹)	P1	P2
F. Cost(₹)	F	F

Same

We know that,

Contribution = FC + Profit

We also know that ,

$$P/V\ ratio = \frac{Contribution}{Sales}$$

∴ Contribution = Sales x p/v ratio

∴ Sales x P/V ratio = FC + Profit

Period 1 :

S1 x P/V Ratio = F + P1 .....(1)

Period 2:

S2 x P/V ratio = F + P2 .....(2)

On reducing equation (1) from equation (2) :

S2 x P/V Ratio - S1 x P/V Ratio = (F + P2) -(F + P1)

P/V Ratio = S2 - S1

$$P/V\ Ratio = \frac{P2 - P1}{S2 - S1}$$

$$\therefore P/V\ Ratio = \frac{Difference\ in\ profit}{Difference\ in\ sales} \times 100$$

BLOCK NO 12: Margin of safety sales.

MOS Sales means Sales which generates Profit.

MOS Sales (₹) = Total Sales (₹) – Total BEP Sales (₹)

BB-12

Particulars	Amt(₹)
Sales	xxx
(-) Variable cost	(xx)
Contribution	xx
(-) Fixed cost	(xx)
Profit	0

All FC of full year is recovered in BEP sales. It means FC shall not be there in MOS sales.

Now,

MOS Sales	xxx
(-) Variable cost	(xx)
Contribution	xx
(-) Fixed cost	0
Profit	xx

BB-12

Contribution is i.e profit.

In MOS Sales,

Contribution p.u. = Profit p.u.

OR

Total contribution = Total profit

$$\text{MOS sales (Units)} = \frac{\text{Total profit}}{\text{Profit p.u.}} = \frac{\text{Total profit}}{\text{Contribution p.u.}} \quad \text{(Formula 1)}$$

On multiplying both sides by selling price p.u.

$$\text{MOS sales (units) x s.p.p.u} = \frac{\text{Total profit}}{\text{contribution p.u.}} \times \text{s.p.p.u.}$$

$$\text{MOS sales (₹)} = \frac{\text{Total profit}}{\frac{\text{contribution p.u.}}{\text{s.p.p.u.}}} = \frac{\text{Total Profit}}{\text{P/V Ratio}} \quad \text{(Formula 2)}$$

BLOCK NO 13 : Bep Sales Ratio & MOS Sales Ratio

BB-13

We know that;

Total sales (₹) = BEP sales (₹) + MOS sales (₹)

On dividing both the sides, by total sales and multiplying both the sides by 100,

$$\frac{\text{Total sales}}{\text{Total sales}} \times 100 = \frac{\text{BEP sales}}{\text{Total sales}} \times 100 + \frac{\text{MOS sales}}{\text{Total sales}} \times 100$$

100% = BEP sales ratio (%) + MOS sales ratio (%)

BLOCK NO 14: Variable cost to sales.

BB-14

$$\text{Variable cost to sales ratio} = \frac{\text{variable cost}}{\text{sales}} \times 100$$

Example: If variable cost to Sales Ratio is 65%. It means company shall Incur variable cost of ₹65 on making sales of ₹100.

BLOCK NO 15: Relation between P/V ratio and variable cost to sales ratio.

BB-15

We know that,

Contribution = Sales - variable cost

On dividing both sides by sales and multiplying by 100.

$$\frac{\text{contribution}}{\text{Sales}} \times 100 = \frac{\text{sales}}{\text{sales}} \times 100 - \frac{\text{variable cost}}{\text{sales}} \times 100$$

P/V ratio = 100% - Variable cost to sales ratio (%)

P/V ratio + Variable cost to sales ratio (%) = 100%

BLOCK NO 16:Calculations of sales level to earn desired profit.

BB-16

Desired level of sales (units) = BEP sales (units) + MOS sales in (units)

$$= \frac{FC}{\text{contribution p.u.}} + \frac{\text{Total profit}}{\text{contribution p.u.}}$$

$$\therefore \text{Desired level of sales (units)} = \frac{FC + \text{profit}}{\text{contribution p.u.}}$$

Desired level of sales (₹) = BEP sales (₹) + MOS sales (₹)

$$= \frac{FC}{P/V \text{ ratio}} + \frac{\text{Total profit}}{\text{contribution p.u.}}$$

$$\therefore \text{Desired level of sales (₹)} = \frac{FC + \text{profit}}{P/V \text{ Ratio}}$$

BLOCK NO 17: Cost Indifferent point (Cost BEP)

BB-17

It is that level of production at which total production cost (fixed and variable) under labour intensive method and capital intensive method is same.

Total cost under 1st method = Total cost under 2nd method

FC1 + VC1 x units produced = FC2 + VC2 x units produced

VC1 x units produced - VC2 x units produced = FC2 - FC1

Units produced x (VC1 - VC2) = FC2 - FC1

$$\text{Units produced} = \frac{FC2 - FC1}{VC1 - VC2}$$

$$\therefore \text{cost (BEP) (units)} = \frac{\text{Difference in total fixed cost}}{\text{Difference in variable cost p.u.}}$$

Note 1: Under labor intensive method

Low total fixed cost since machines are less more VC p.u.

Note 2: Under capital intensive method

High total fixed cost and low variable cost p.u.

BB-17

Decision about Selection of Production Method:

1. If Actual Production (units) /units to be Produced is equal to cost BEP units then any method can be selected.

2. If units to be produced is more than cost BEP units then method having low V.C. p.u. is to be selected (i.e capital Intensive method).

OR

low variable cost to Sales Ratio shall be selected.

3. If units to be produced is less than cost BEP then method having more variable cost p.u. shall be selected (i.e labour intensive method) Or more variable cost to Sale Ratio Shall be selected.

Note : Actual Production will be low if demand in low and vice versa

BLOCK NO 18: Merger of two departments or two companies.

If Management of 2 companies decides to Merge both companies then merged Company desires to know following things :

BB-18

Eg: A ltd + B ltd = AB ltd.

1. P/v Ratio
2. BEP sales (in ₹)
3. Desired Sales (in ₹)
4. Capacity utilization at BEP Sales (₹)

Step 1: Make Marginal cost Equation of both companies at 100%. Capacity Level.

Step 2: Add all figures to calculate sales, Variable cost, FC and contribution of Merged company.

P/V ratio of Merged company = $\frac{\text{Total contribution of both Co.}}{\text{Total sales of both Co.}} \times 100$

BEP sales (₹) of merged company = $\frac{\text{Total fixed cost of both Co.}}{\text{P/V ratio of merged Co.}}$

Desired sales of merged co. to earn desired profit =

$= \frac{\text{Total FC of both Co.} + \text{Desired profit}}{\text{P/V ratio of merged company}}$

Capacity utilization of merged co. to achieve BEP sales =

$= \frac{\text{Total BEP of both Co.}}{\text{Total sales of both Co.}} \times 100$

Capacity utilization of merged co. to achieve desired sales =

$= \frac{\text{Total desired sales}}{\text{Total sales of both Co.}} \times 100$

BLOCK NO 19 : Cash BEP Sales

BB-19

BEP sales (units) = $\frac{FC}{\text{contribution p.u.}}$

BEP sales (₹) = $\frac{FC}{\text{P/V Ratio}}$

Example of TFC : 1. Rent of factory = ₹20,00,000

2. Dep. of machine = ₹10,00,000

₹30,00,000

While calculating cash BEP sales we will consider only cash FC i.e we shall ignore non cash FC.

Cash BEP (units) = $\frac{\text{Cash FC}}{\text{Contribution p.u.}}$

$$\text{Cash BEP (₹)} = \frac{\text{Cash FC}}{\text{P/V ratio}}$$

BLOCK NO 20: Cash of BEP sales when one co. is selling multiple products.

BB-20

A company normally sells more than one product and contribution of each product and is different but FC is common for all the products. Then co. is required to calculate BEP Sales (units) separately for each product. Sometime company also desires to calculate BEP Sales (units) together for all the Product .

BLOCK NO 21 : Shut Down Point.

BB-21

If a company is earning loss in one or more product then company has to take decision whether to produce that product or not. To Take this decision We divide FC into two categories.

1. Avoidable FC:

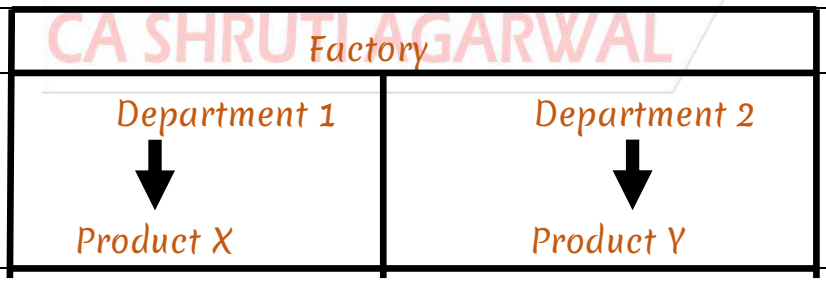
FC which will not incur if Product is not manufactured.

eg: Salary of manager.

2. Un Avoidable FC:

It is that FC which will continue to incur even if Product is not Manufactured.

Eg:



Rent - ₹ 7,00,000 (Un avoidable fixed cost)

Manager -₹18,000 p.m. (Avoidable fixed cost)

$$\text{SDP Sales (units)} = \frac{\text{Avoidable FC}}{\text{Contribution p.u.}}$$

$$\text{SDP Sales (in ₹)} = \frac{\text{Avoidable FC}}{\text{P/V ratio}}$$

Note 1 :Avoidable FC = Total FC – Unavoidable FC

BB-21

Rules to take decision:

1. If Actual sales of Product is equal to or more than SDP sales then it is better to continue Production.

2.If Actual sales of product is less than SDP sales then it is better to Shutdown (stop) the production.

BLOCK NO 22 : Calculation of BEP sales in case co. is having range type FC.

Eg: If FC is ₹2000 in producing every next 50 units then it shall be called as range - type FC.

BB-22

	Particulars	FC(₹)
i.e.	1 - 100 units	4000
	101 - 200 units	8000
	201 - 300 units	12000

In case we have Range type FC we will calculate BEP Sales for each Range.

If calculated BEP Sales (units) falls within its Range then it shall be valid BEP Sales (units) otherwise it shall be invalid BEP sales (units).

BB-23

BLOCK NO 23 : Cost sheet based question.

We will use cost sheet to calculation answer in same question.

BLOCK NO 24 : Calculation of income under absorption costing and marginal costing.

BB-24

Absorption costing technique is used to calculate cost per unit of item Manufactured.

While Marginal costing Technique is used to take future decision.

Eg: launching of new Products,

Calculation of future BEP sales (₹), etc.

In absorption costing technique, cost of stock is calculated based on variable manufactured cost and fixed Production cost.

While under Marginal costing Technique, cost of stock is calculated based on variable manufacture cost only.

Note 1 : Variable manuf. cost = DMC + DLC + D Exp. + Variable Prod. OH

Due to difference in calculation of cost of stocks under absorption costing and Marginal costing, income calculated using both methods is different.

Note 2 : Under absorption OH and over absorbed OH will arise only in absorption costing technique.

BB-24

Income statement under absorption costing

Particulars	Amount
DMC (var.)	xx
DLC (var.)	xx
D. Exp(var.)	xx
Variable factory OH (var.)	xx

Fixed factory OH (absorbed amt₹)	xx
(units produced x Standard ORR)	
Total mfd. cost of quantity produced	xx
(+) Op. Stock of FG	xx
(-) Cl. Stock of FG	(xx)
Total Mfd. Cost of units sold	xx
Add: Var. admin OH	xx
Fix admin OH	xx
Var. S & D OH	xx
Fix S & D OH	xx
(+) Under absorbed OH	xx
(-) Over absorbed OH	(xx)
Total cost of sales (B)	xx
(+) Total profit (A-B)	xx
Total sales (A)	xx

Income statement under marginal costing technique.

Particulars	Amount
DMC (var.)	xx
DLC (var.)	xx
D. Exp (var.)	xx
Variable factory OH	xx
Variable manuf. Cost of Qnty. Produced	xx
(+) Op. Stock of FG	xx
(-) Cl. Stock of FG	(xx)
Variable mfd. Cost of Qnty. Sold	xx
(+) Var. admin OH	xx
(+) Var. S & D OH	xx
Variable cost of sales (A)	xx
Sales(B)	xx

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Contribution (B-A)	xx
(-) Fixed factory OH	(xx)
(-)Fixed admin OH	(xx)
(-) Fixed S & D OH	(xx)
Profit	xx

Reconciliation of income.

Particulars	Amount(₹)
Profit under marginal costing	
Add:	
Less:	
Profit under absorption costing.	

DCP Approach. :

Rule 1: We will always start with income as per marginal costing technique.

1. Debit item + Excess in cost = Plus

   (op stock) + (Marginal cost)= Plus

2. Credit item + excess in cost = Minus

   (Cl. stock) (Marginal cost)

BB-24

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3. Dr. Item(Op. stock)+ excess in absorption Cost = Minus

4. Cr. Item(Cl. stock)+ excess in absorption Cost = Plus

BLOCK NO 24 :