Absorption & Marginal Costing Systems

Behavioural Classification resulting in……

- Marginal Costing System
- It is a costing system which treats only the variable manufacturing costs as product costs. The fixed manufacturing overheads are regarded as period cost

Full Vs. Variable Costing Systems

- Initially, we allocated all manufacturing costs to products regardless of whether they are fixed or variable (Statement of Cost) - known as Absorption costing/Full Costing System

- However, from behavioural classification of cost, it could be realized that only variable costs are relevant for decision making - known as Marginal costing/Variable Costing System

Absorption costing system

- It is a costing system which treats all manufacturing costs including both the fixed and variable costs as product costs

Conventional Income Statement
(Under Absorption Costing System)

- **Revenue**
- **minus** Cost of goods sold, which include direct material, direct labor, variable overhead and fixed overhead
- **Gross profit**
- **minus** Selling and administrative expenses
- **Net income before taxes**
- **minus** Income taxes
- **Net income after taxes**

Marginal costing system

- It is a costing system which treats only the variable manufacturing costs as product costs.
- The fixed manufacturing overheads are regarded as period cost
- Statement of Profit:
  - Revenue
  - minus All Variable manufacturing costs (direct labor + direct material + variable overhead)
  - Contribution margin
  - minus Fixed manufacturing costs/ Fixed selling and administrative costs
  - Net income

Marginal Costing System…….

- An alternative to Absorption costing
- Only variable costs are charged as a cost of sale and a contribution is calculated
- **Closing inventories of work in progress or finished goods are valued at marginal (variable) production cost**
- Fixed costs are treated as a period cost, and are charged in full to the Income Statement of the accounting period in which they are incurred

The basic premise of marginal costing system

- For any given period of time, fixed costs will be the same, for any volume of sales and production (provided that the level of activity is within the ‘relevant range’).

- Therefore, by selling an extra item of product or service the following will happen:
  - Revenue will increase by the sales value of the item sold
  - Costs will increase by the variable cost per unit
  - Profit will increase by the amount of contribution earned from the extra item

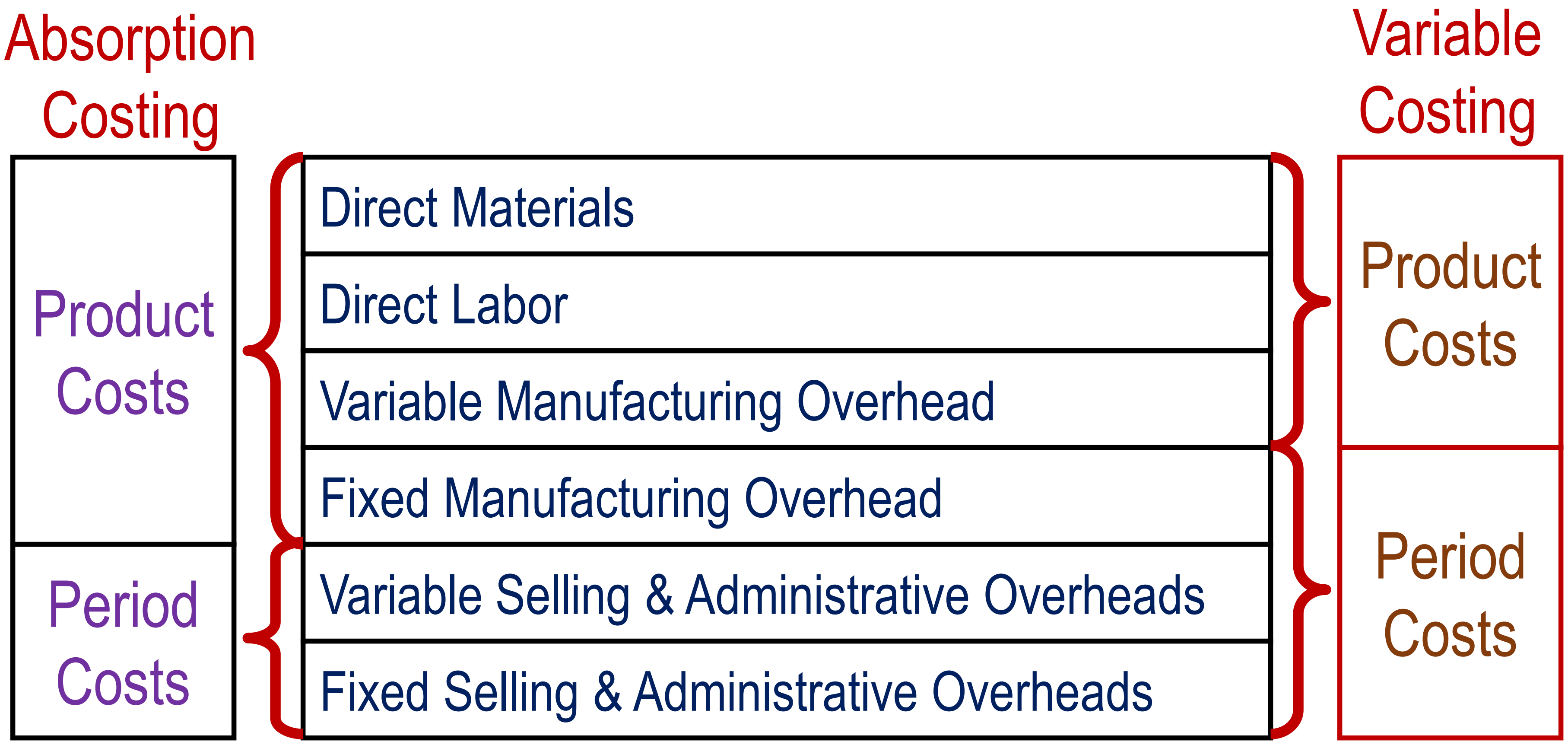
Contribution Margin Income Statement (Marginal Costing System)

- **Revenue**
- **minus** Variable manufacturing costs (direct labor + direct material + variable overhead)
- Contribution margin from production
- **minus** Variable selling and administrative expenses
- **Contribution margin**
- **minus** Fixed manufacturing costs/ Fixed selling and administrative costs
- **Net income**

Contribution

- Is the difference between the sales value and the marginal or variable cost of sales
- May be defined as the profit before the recovery of fixed costs
- Moves towards the recovery of fixed cost & profit; so ($C = F + P$).
- In case a firm neither makes profit nor suffers loss, contribution will be just equal to fixed cost ($C = F$) - break even point

Overview of Absorption & Marginal Costing Systems



Marginal costing vs. Absorption costing

- In marginal costing, fixed production costs are treated as period cost and are written off as they are incurred
- In absorption costing, all costs are absorbed into production and thus operating statements do not distinguish between fixed and variable costs
- The valuation of stock and work in progress contains both fixed and variable elements
- Inventory values are therefore greater than those calculated using marginal costing

Presentation of costs – Income Statement

Income Statement as per Absorption costing System

		₹
Sales		X
Less: Cost of goods sold		X
Gross profit		X
Less: Expenses		
Selling expenses	X	
Admin. expenses	X	
Other expenses	X	X
Other fixed expenses		X
Net Profit		X

Variable and fixed manufacturing

Income Statement as per Marginal Costing System

.		₹
Sales		X
Less: Variable cost ofGoods sold		X
Product contribution margin		X
Less: variable non- manufacturing expenses		
Variable selling expenses	X	
Variable admin. expenses	X	
Other variable expenses	X	X
Total contribution expenses		X
Less: Expenses		
Fixed selling expenses	X	
Fixed admin. expenses	X	
Other fixed expenses	X	X
Net Profit		X

Cost Presentation under Absorption & Marginal Costing Systems (without inventory balance)

- Given the following data compute the cost of production under both the methods:
- Direct material per unit = ₹5.00
- Direct labour cost per unit = ₹9.00
- Variable manufacturing overhead per unit = ₹0.60
- Total fixed manufacturing overhead per period = ₹92,000
- Number of units produced during the period = 10,000 units

- Cost of production per unit as per Absorption Costing is ₹23.80 and under Marginal costing it is ₹14.60 as under marginal Costing ₹92,000 is treated as period cost.

Cost Presentation under Absorption & Marginal Costing Systems (with closing inventory balance)

- Considering the input given in the previous problem & the following additional information compute the profit under both costing systems.
- Opening inventory of finished goods – Nil
- Units produced – 10,000 & Units sold – 8,000
- Sale price per unit – ₹35
- Variable selling & administration expenses – ₹1. 20 per unit
- Fixed selling & administration expenses - ₹58,000

Statement of Profit under Absorption & Marginal Costing Systems

- Absorption Costing
- Sales – (8,000 x 35)= 2,80,000
- Less, COGS

Opening Inv = NIL

Add, cost of goods = 2,38,000

produced (23.80 x 10,000)

Less, Closing Inv = (47,600)

(2,000 x 23.80) (1,90,400)

- Less, S&D Exp

Fixed (58,000)

Variable (8,000 x 1.20) (9,600)

- **Net Profit** **22,000**

- Marginal Costing
- Sales – (8,000X 35)= 2,80,000
- Less, cost of goods produced

*(10,000 *14.60)* 1,46,000

- Less, Cl. stock (29,200) (1,16,800)

*(2,000 *14.60)*

Prod. Contribution Margin 1,63,200

- Less, Var. S & A Exp. (9,600) *(8,000 *1.20)*
- **Contribution** **1,53,600**
- Less, Fixed Cost

Mfg. Overhead 92,000

Fixed S&A Exp 58,000 (1,50,000)

- **Net Profit** **3,600**

Why there is a difference in profit?

- The difference in profit of ₹18,400 (22,000- 3,600) is due to different accounting treatment of fixed manufacturing cost under both methods.

- Under Marginal costing, it is considered as period cost & total of ₹ 92,000 is deducted in counting profit.

- Under Absorption costing, it is treated as product cost & charged to 10,000 units produced during the year.
- This means closing inventory of 2,000 units will absorb a part of fixed manufacturing cost i.e. (2,000 x 9.20 = 18,400).
- This fixed manufacturing cost of ₹ 18,400 is carried forward in the balance sheet till these 2,000 units are sold in the next accounting year.

- Thus, for calculating net profit under Absorption costing only ₹ 73,600 of fixed manufacturing cost was included in COGS, where as under Marginal costing entire ₹ 92,000 was included as part of fixed cost to compute profit.

Over & Under Absorption of Overheads (Absorption Costing System)

- Generally the overheads absorbed into the product cost do not agree with the actual overheads incurred for the period (as the predetermined rates are based on expected overheads to be incurred and the estimated production).

- If, during the accounting period, overheads absorbed > actual overheads incurred = Over absorption & vice-versa.

- If overhead is over absorbed, this means that **fewer actual overhead costs were incurred than expected**, so that more cost is applied to cost objects than were actually incurred → means that the recognition of expense is reduced in the current period, which increases profits.

- If overhead is under absorbed, this means that **more actual overhead costs were incurred than expected**, with the difference being charged to expense as incurred, which reduces profits.

Prepare Income Statements under Absorption & Marginal costing systems from the following:

- The following information for a company that produced a single product during January to March, 20XX: (Figures in ₹)

Selling price pre unit	100
Direct materials per unit	20
Direct Labour per unit	10
Fixed factory overhead per month	30000
Variable factory overhead per unit	5
Fixed selling overheads	1000
Variable selling overheads per unit	4

- Budgeted activity was expected to be 1000 units each month
- Production and sales for each month were as follows:

	Jan	Feb	March
Unit sold	1000	800	1100
Unit produced	1000	1300	900

Income Statement
(Absorption Costing System)

	January	February	March
	₹	₹	₹
Sales	100000	80000	110000
Less: COGS (@ Rs.65/)	(65000)	(52000)	(71500)
	35000	28000	38500
Adjustment for Over-/(under) absorption of factory overhead		9000	(3000)
Gross profit	35000	37000	35500
Less: Expenses			
Fixed selling overheads	1000	1000	1000
Variable selling overheads	4000	3200	4400
Net profit	30000	32800	30100

Income Statement
(Marginal Costing System)

	January	February	March
	₹	₹	₹
Sales	100000	80000	110000
Less: Variable cost of good sold (Rs.35)	(35000)	(28000)	(38500)
Product contribution margin	65000	52000	71500
Less: Variable selling overhead	(4000)	(3200)	(4400)
Total contribution margin	61000	48800	67100
Less: Fixed Expenses			
Fixed factory overhead	(30000)	(30000)	(30000)
Fixed selling overheads	(1000)	(1000)	(1000)
Net profit	30000	17800	36100

Working Notes 1:

Standard fixed overhead rate

$$= \frac{\text{Budgeted total fixed factory overheads}}{\text{Budgeted number of units produced}}$$

$$= \frac{₹\ 30000}{1000 \text{ units}}$$

= ₹ 30 per unit

Working Notes 2:

Production cost per unit under absorption costing system:

	₹
Direct materials	20
Direct labour	10
Fixed factory overhead absorbed	30
Variable factory overheads	5
	65

Working Notes 3:

(Under)/Over-absorption of fixed factory overheads:

	January	February	March
	₹	₹	₹
Fixed overhead absorbed	30000	39000	27000
Fixed overheads incurred	30000	30000	30000
	0	9000	(3000)
	1000* ₹30	1300* ₹30	900* ₹30
		Over Absorption	Under Absorption

Working Notes 4:

No fixed factory overhead

Variable production cost per unit under marginal costing system:

	₹
Direct materials	20
Direct labour	10
Variable factory overhead	5
	35

Reconciling Profits

- The difference in profits reported under the two costing systems is due to the different inventory valuation method used.

- If inventory levels increase between the beginning and the end of the period, absorption costing will report a higher profit.

- This is because some of the fixed production overhead incurred during the period will be carried forward in closing inventory (which reduces cost of sales) to be set against sales revenue in the following period instead of being written off in full against profit in the period concerned (Increase in inventory level by 500 units X ₹30 = ₹15,000).

- If inventory levels decrease, absorption costing will report the lower profit (Decrease in inventory level by 200 units X ₹ 30 = ₹ 6,000).

Difference in Profit under Marginal & Absorption Costing

- Profit under two systems may be different because of difference in the stock valuation

1. When Production is equal to Sale

   i. When there are no opening & closing inventory, profit/loss under both the systems are equal

   ii. When opening inventory is equal to that of closing inventory then also profit/loss under both systems will be equal provided fixed cost element in opening & closing stocks is the same

Difference in Profit under Marginal & Absorption Costing………

2. When Production is more than Sale:

When closing stock is more than that of the opening stock, the profit as per the absorption costing will be more than that shown by marginal costing

This is because in absorption costing a part of fixed overheads included in closing stock value is carried forward to next accounting period in the form of closing stock

Difference in Profit under Marginal & Absorption Costing………

3. When Production is less than Sale:

When opening stock is more than that of the closing stock, the profit as per the absorption costing will be less than that shown by marginal costing

This is because under absorption costing, COGS is higher as a part of fixed cost from the preceding period is added to the current year's COGS in form of opening stock