CHAPTER 21

Absorption Costing or Full Costing

21.1 CONCEPT

Absorption costing technique is also termed as Traditional or Full Cost Method. Under this method, the cost of a product is determined, after considering both fixed and variable costs. The variable costs, such as direct materials, direct labour, etc. are, directly, charged to the products. The fixed costs are apportioned on a suitable basis over different products, manufactured during a period.

> **Under absorption costing, all costs, both variable and fixed, are charged to the products for cost determination.**

Thus, in case of absorption costing, all costs are identified with the products manufactured. Both Fixed costs and Variable costs are also treated as product costs. The cost unit is made to bear the burden of full cost, irrespective of the current level of operations. This will be clear with the help of the following example.

Illustration No. 1

A company is manufacturing three products A, B and C. The costs of their manufacture are as follows:

	A	B	C
Direct Material per unit	Rs. 3	Rs. 4	Rs. 5
Direct Labour	2	3	4
Selling Price	10	15	20
Output	1,000 units	1,000 units	1,000 units

The total overheads are Rs. 9,000. Out of which Rs. 6,000 are fixed and rest are variable. It is decided to apportion these costs over different products in the ratio of output.

You are required to prepare separate statements, showing cost of each product and profit according to Absorption Costing and Marginal Costing.

Solution:

STATEMENT SHOWING COST AND PROFIT
(According to Absorption Costing Technique)

Rs.

	A		B		C	
	Per Unit	**Total**	**Per Unit**	**Total**	**Per Unit**	**Total**
Direct Material	3	3,000	4	4,000	5	5,000
Direct Labour	2	2,000	3	3,000	4	4,000
Overheads:						
Fixed	2	2,000	2	2,000	2	2,000
Variable	1	1,000	1	1,000	1	1,000
Total Cost	8	8,000	10	10,000	12	12,000
Profit	2	2,000	5	5,000	8	8,000
Selling Price	10	10,000	15	15,000	20	20,000
Total Profit	Rs. 2,000 + 5,000 + 8,000 = 15,000					

STATEMENT SHOWING COST AND PROFIT
(According to Marginal Costing Technique)

Rs.

	A		B		C		Total
	Per Unit	Total	Per Unit	Total	Per Unit	Total	(A+B+C)
Direct Material	3	3,000	4	4,000	5	5,000	12,000
Direct Labour	2	2,000	3	3,000	4	4,000	9,000
Overheads:							
Variable	1	1,000	1	1,000	1	1,000	3,000
Marginal Cost	6	6,000	8	8,000	10	10,000	24,000
Selling Price	10	10,000	15	15,000	20	20,000	45,000
Contribution	4	4,000	7	7,000	10	10,000	21,000
Fixed costs							6,000
Profits							15,000

Note: Net profit is same both in Absorption Costing and Marginal Costing, due to absence of closing stock and opening stock.

21.2 OBJECTIVE OF ABSORPTION COSTING

The management is interested that every product should bear its total cost, be it fixed or variable cost and leave something towards profits towards return on investment. In the absence of profits, in the long run, management is not interested to continue that product. Management wants to ensure a reasonable return on the investment made. Absorption costing facilitates that objective.

> **The objective of management, under absorption costing, is that each product recovers its full cost and leaves something towards profit as a return on investment.**

All products may not give equal contribution. Selling price of some products may cover the variable cost component, fully, while they may not cover the fixed cost component, totally. Though full costs are not recovered, in the short run, management continues production as they leave certain amount in the form of contribution that would cover the fixed costs, at least, partly. This is only short-term approach. In the long - run, every firm wants to recover full costs, both fixed and variable, and leave something towards planned profits, which is the objective of every firm to maximize.

21.3 DIFFERENCES BETWEEN MARGINAL COSTING AND ABSORPTION COSTING

Objective: Under marginal costing, management is concerned with recovery of variable costs. This is a short-term objective. Any management for a long period, permanently, cannot sustain, ignoring recovery of fixed costs.

Under absorption costing, management is concerned with recovery of total costs. Unless total costs are recovered, management does not continue production of the concerned product. Basically, this is a long-term objective.

The objectives of marginal costing and absorption costing are conflicting with each other.

Marginal costing is appropriate in the short-run and for selecting special orders, while absorption costing is suited as a long-term objective.

The objectives of marginal costing and absorption costing are not one and the same, in respect of recovery of costs.

The differences between Marginal Costing and Absorption Costing are summarized hereunder:

Basis	Marginal Costing	Absorption Costing
1. Fixed Costs	Fixed costs are considered as period costs. Fixed costs are ignored for product costing and inventory valuation.	Fixed costs are considered as product costs. Fixed costs are considered for product costing and inventory valuation.
2. Profitability	P/V Ratio of different products judges profitability of different products.	Profitability is influenced by recovery of full costs.
3. Apportionment of fixed costs	Fixed costs are not apportioned to products. They are charged to contribution from different products.	Subjective apportionment of overheads is made to different products. In other words, the apportionment is arbitrary and not exact.
4. Presentation of Data	Presentation of Data is given highest importance to highlight contribution of each product and total contribution of the firm.	Presentation of Data is on conventional pattern. Net profit is determined, after deducting fixed overheads.

	Variable cost of production				
	(10,000 x Rs. 50)	5,00,000			
	(5,000 x Rs. 50)			2,50,000	
	Fixed Production overhead (10,000 x Rs. 10) (5,000 x Rs.10)	1,00,000		50,000	
	Under absorbed overhead	----		50,000*	
	Total Stock	6,00,000		6,50,000	
	Less Closing stock (5,000 x Rs. 60)	3,00,000		---	
	Cost of goods sold		3,00,000		6,50,000
	Gross Profit		2,00,000		3,50,000
	Less : Selling and Administration cost		50,000		50,000
	Net Profit		1,50,000		3,00,000

Absorption Costing and Marginal Costing have their own role to play, depending on the situation.

Both Absorption Costing and Marginal Costing have their own role to play. If only variable costs are recovered by the unit cost, when and how fixed costs can be recovered?

When a special export order is under consideration, application of absorption costing may result in rejection of the order when full cost is not recovered by the unit cost in the proposed export order. Marginal costing is the right technique to decide on such special orders.

Application of Marginal Costing results in acceptance of the special order as the same unit cost results in recovery of variable costs, totally, and leaves something towards contribution, which results in increased profits of the firm. The special order may be rejected, if absorption costing is applied for determining the cost. Depending on the context, suitable application is to be made.

21.4 VALUATION OF CLOSING STOCK UNDER ABSORPTION COSTING AND MARGINAL COSTING AND IMPACT ON PROFIT

Fixed costs are taken into account in Absorption costing for valuation of cost of production and closing stock. However, fixed costs are ignored in Marginal costing for valuation of cost of production and closing stock.

Profit calculated between Absorption costing would be different from the profit calculated under Marginal costing.

21.5 IMPACT OF FIXED COSTS ON COST OF PRODUCTION PER UNIT UNDER ABSORPTION COSTING WOULD BE MISLEADING

The fixed costs are apportioned to the products on some basis. The basis could be a percentage of direct material or percentage of direct labour or rate per article etc. Whatever be the basis of apportionment of fixed cost to different products, it cannot be said that the apportionment is exact and definite. Charging of fixed costs creates certain problems.

Cost of production would be higher in Absorption Costing, compared to Marginal Costing, due to inclusion of fixed cost component in the former.

A simple example would explain the picture better.

Cost sheet of a firm is as under:

Direct materials per unit	=	Rs. 6
Direct Labour per unit	=	Rs. 4
Prime cost per unit	=	Rs. 10
Fixed overheads	=	Rs. 1,00,000

Production capacity of the firm is 10,000 units.

If the firm works to its full capacity, the total cost of production would be as under:

Direct materials	=	Rs. 60,000
Direct Labour	=	Rs. 40,000
Fixed costs	=	Rs 1,00,000
Total cost	=	Rs. 2,00,000
Total cost per unit	=	2,00,000 / 10,000
	=	Rs 20

If the firm produces only 1,000 units, then the cost of production would be as under:

Direct materials	=	Rs. 6,000
Direct Labour	=	Rs. 4,000
Fixed costs	=	Rs. 1,00,000
Total cost	=	Rs. 1,10,000
Total cost per unit	=	1,10,000 / 1,000
	=	Rs. 110

The total cost per unit, under full capacity, has been only Rs. 20 and it has gone up to Rs. 110, when the capacity of the firm is partly utilized. There is no increase in the price of raw materials or labour. However, the cost of production per unit has gone up by Rs. 90, amounting to 495% increase, due to lower volume of production. It appears illogical. Some people, therefore, argue that the fixed costs should not be considered, while computing the cost of product. In Marginal costing, fixed costs are charged against a fund, arising out of excess of selling price over variable cost. This is the logic of marginal costing.

21.6 EFFECT OF OPENING AND CLOSING STOCK ON PROFITS

Impact of opening stock and closing stock would be as under in Absorption Costing and Marginal Costing:

1. When sales and production coincide (no opening stock and closing stock situation), profit would be same under both Absorption costing and Marginal costing.
2. If closing stock were more than the opening stock, profit under Absorption Costing would be more than profit under Marginal Costing. This is, because, under Absorption Costing, a portion of fixed overhead is charged to the closing stock and carried over to the next year, instead of being charged to the current period.
3. If closing stock is less than the opening stock, the profit shown under Absorption Costing will be lower than the profit under Marginal Costing. This is because a portion of fixed cost relating to the previous year is charged to the current period.

The following examples would explain.

Illustration No. 2

The data below relates to Kishore Co., which makes and sells sweet packets.

	January	February
Sales	5,000 units	10,000 units
Production	10,000	5,000
Selling Price/ unit	Rs. 100	Rs. 100
Variable production cost/ unit	50	50
Fixed production overhead incurred	1,00,000	1,00,000
Fixed production overhead cost per unit, being the predetermined overhead absorption rate	10	10
Selling, Distribution and administration cost (all fixed)	50,000	50,000

You are required to present comparative profit statement for each month using

(i) absorption costing;

(ii) marginal costing

Comment on the reasons for difference in profit, if any.

Solution:

(i) Profit statement using absorption costing

		January		February	
1.	Sales (5,000 units x Rs. 100) (10,000 units x Rs. 100)		5,00,000		10,00,000
2.	Cost of Goods Sold: Opening Stock	----		3,00,000	

	Variable cost of production				
	(10,000 x Rs. 50)	5,00,000			
	(5,000 x Rs. 50)			2,50,000	
	Fixed Production overhead (10,000 x Rs. 10) (5,000 x Rs.10)	1,00,000		50,000	
	Under absorbed overhead	----		50,000*	
	Total Stock	6,00,000		6,50,000	
	Less Closing stock (5,000 x Rs. 60)	3,00,000		---	
	Cost of goods sold		3,00,000		6,50,000
	Gross Profit		2,00,000		3,50,000
	Less : Selling and Administration cost		50,000		50,000
	Net Profit		1,50,000		3,00,000

*** Apportionment of overheads is made on a planned production of 10,000 units. However, production has been only 5,000 units. Hence, under absorbed overhead has been charged.**

(ii) Profit statement under Marginal Costing

		January		February	
1.	Sales (5,000 units x Rs. 100) (10,000 units x Rs. 100)		5,00,000		10,00,000
2.	Cost of Goods Sold :				
	Opening Stock	-----		2,50,000	
	Production (10,000 x Rs. 50) (5,000 x Rs. 50)	5,00,000		2,50,000	
	Total Stock	5,00,000		5,00,000	
	Less Closing stock (5,000 x Rs. 50)	2,50,000		----	
	Cost of goods sold		2,50,000		5,00,000
	Contribution		2,50,000		5,00,000
	Less Fixed Cost :				
	Production Overhead		1,00,000		1,00,000
	Selling and Admn. Overhead		50,000		50,000
	Net Profit		1,00,000		3,50,000

Note: Net profit is different due to difference in valuation of closing stock / opening stock both under Absorption Costing and marginal Costing for different months. However, total amount of profit is same Rs. 4,50,000 under both the methods as there is no opening stock and closing stock, at the end. So cumulative profit is same under both absorption costing and marginal costing.

Illustration No. 3

Radhika Company is manufacturing three products X,Y and Z. The costs of their manufacture are as follows:

	X	Y	Z
Direct Material per unit	Rs. 3	Rs. 4	Rs. 5
Direct Labour	2	3	4
Selling Price	10	15	20
Output	1,000 units	1,000 units	1,000 units

The total overheads are Rs. 6,000, out of which Rs. 3,000 is fixed and rest is variable. It is decided to apportion these costs over different products in the ratio of output.

Compute the amount of profit under Marginal and Absorption Costing systems, in case the units sold of the products X, Y and Z are 900 in each case.

Comment on the reasons for the difference in profit between Absorption Costing and Marginal Costing.

What would be the impact of closing stock and opening stock on the profits shown between Absorption Costing and Marginal Costing?

Note: Net profit is different due to difference in valuation of closing stock/opening stock, both under Absorption Costing and marginal Costing for different months. However, total amount of profit is same Rs. 4,50,000 under both the methods.

Solution:

STATEMENT OF PROFIT

(Under Absorption Costing System)

(Rs.)

	X	Y	Z
Sales (A)	9,000	13,500	18,000
Direct Material	3,000	4,000	5,000
Direct Labour	2,000	3,000	4,000
Overheads: Variable	1,000	1,000	1,000
Total Marginal Cost	6,000	8,000	10,000
Add: Fixed Overheads	1,000	1,000	1,000
Production Cost	7,000	9,000	11,000
Add: Opening stock	----	700	900
Less: Closing stock	700	900	1,100
Cost of Goods Sold (B)	6,300	8,800	10,800
Net Profit (Sales Cost of Goods Sold) (A B)	2,700	4,700	7,200

Thus, total net profit under Absorption Costing is:

Product X	Rs. 2,700
Product Y	4,700
Product Z	7,200
Total	14,600

STATEMENT OF PROFIT
(Under Marginal Costing)

	X	Y	Z
Sales (A)	9,000	13,500	18,000
Direct Material	3,000	4,000	5,000
Direct Labour	2,000	3,000	4,000
Overheads: Variable	1,000	1,000	1,000
Production Cost	6,000	8,000	10,000
Add: Opening stock	----	600	800
Less: Closing Stock*	600	800	1,000
Cost of Goods Sold (B)	5,400	7,800	9,800
Contribution (Sales Cost of Goods Sold)	3,600	5,700	8,200

*** Valuation of closing stock is based on variable cost of direct material, direct labour & variable overheads.**

Thus, total profit under Marginal Costing will be:

Contribution from Product X	Rs. 3,600
Contribution from Product Y	5,700
Contribution from Product Z	8,200
Total Contribution	17,500
Less: Fixed Cost	3,000
Total Net Profit	14,500

The total Net Profit Under Absorption Costing System is Rs. 14,600, while it is Rs. 14,500 in case of Marginal Costing System, a difference of Rs. 100. This is on account of the difference in valuation of closing Stock on account of fixed costs. The closing stock under Absorption Costing System is Rs. 1,100, while it is Rs. 1,000 under marginal Costing. The difference in profit Rs. 100 is due to difference in valuation of closing stock. As there is no opening stock, the difference in profit is due to valuation of closing stock, alone.

Thus, the profit under Absorption Costing System would be more as compared to Marginal Costing, if closing stock only exists, without any opening stock.

> **In case, there are no stocks (Opening stock and closing stock) whatsoever, the profits under both absorption costing and marginal costing will be the same.**

Illustration No. 4

Ansiha & Co. is engaged in manufacturing toys. Details of cost of production shows variable costs are Rs. 1,20,000 and fixed costs Rs. 35,000, totaling Rs. 1,55,000. They are uniform for three months. But sales, opening and closing stocks are different in three months, details of which are given below:

			(Rs. In thousands)		
				Months	
			1	**2**	**3**
Sales			200	165	235
Stocks under marginal					
Costing: Opening			84	84	105
Closing			84	105	84
Stock under absorption					
Costing: Opening					
Closing			108	108	136
			108	136	108

Prepare two tabulations, side by side, to summarise these results for each of three months and the quarter of the year, showing differences in profits on marginal costing and absorption costing theories. Draw conclusions.

Solution:

(Rs. In thousands)

	Marginal Costing				**Absorption Costing**			
	Months			**Total**	**Months**			**Total**
	1	2	3		1	2	3	
Opening Stock	84	84	105	84	108	108	136	108
Cost	120	120	120	360	155	155	155	465
	204	204	225	444	263	263	291	573
Closing Stock	84	105	84	84	108	136	108	108
Cost of Sales	120	99	141	360	155	127	183	465
Sales	200	165	235	600	200	165	235	600
Contribution	80	66	94	240				
Fixed Cost	35	35	35	105				
Profit	45	31	59	135	45	38	52	135

Conclusions

Valuation of stock in absorption costing contains fixed cost element, which is not the case with Marginal costing. This creates variation in profit between Marginal costing and Absorption costing. Profit at different situations has been as under:

1. If there is no change in opening stock and closing stock i.e. production is totally sold, profit in marginal costing and absorption costing would be the same. In the first month, profit is 45,000 in both marginal costing and absorption costing.
2. If closing stock is more than the opening stock, profit in absorption costing would be more than the marginal costing as stock would contain portion of fixed costs in absorption costing. In second month, the closing stock is more than the opening stock. Profit in absorption costing is Rs. 38,000, while it is only Rs. 31,000 in marginal costing.
3. If opening stock is more than the closing stock, profit in marginal costing would be more than the profit in absorption costing. Stock in absorption costing always contain fixed costs component. As opening stock is more than the closing stock, profit would be less in absorption costing, compared to marginal costing. It may be noted that fixed costs would not be apportioned in marginal costing. This situation is evident in the third month, with a profit of Rs. 59,000 in marginal costing and Rs. 52,000 in absorption costing.
4. The profit determined under Marginal Costing is a linear function of sales. In other words, contribution is exactly proportional to sales. 40% is contribution ratio in all the three months. Changes in production and sales do not have any impact on contribution. See all the four columns in Marginal Costing.
5. Profit determined under Absorption Costing is influenced by both production and sales.

21.7 PRESENTATION OF DATA

The table given below summarises the difference of presenting the data under absorption costing and marginal costing.

	Absorption Costing		**Marginal Costing**		
Sales:		xxx	Sales:		xxx
Less:	Manufacturing cost of goods sold (including fixed manufacturing overheads)		*Less:* **Variable cost** Manufacturing		xx
Less:	Administration and Selling Expenses	xxx	*Less:* Administration and Selling Expenses		xx
	Profit	xxx	Contribution		xxx
			Less: **Fixed cost**		
			Manufacturing	xx	
			Administration	xx	
			Selling	xx	xxx
			Profit		xxx

Note : If there are opening and closing inventories, profit figures under the two methods will be different. In the absence of opening stock and closing stock, profit under Absorption Costing & Marginal Costing would be same.

21.8 LIMITATIONS OF ABSORPTION COSTING

The following are the limitations of Absorption Costing:

1. **Cost Data not Useful for Control Purpose:** Fixed costs are apportioned on an arbitrary basis. This reduces the practical utility for the purpose of control.
2. **Fixed Costs:** Fixed costs are included in the valuation of closing stock and carried forward to the next year. In other words, though the fixed costs relate to the current year, they are not charged to the current year. They are carried forward to the next year to the extent they relate to closing stock. In a similar manner, opening stock contains fixed costs of the previous year and they were not charged during the previous year. Normally, costs are to be charged in the year in which they incur. As, that practice is not followed, it is an unsound practice.
3. **Presentation of Data:** As fixed costs are apportioned to the products, presentation of data is not useful for decision-making as overheads obscure cost-profit-volume relationship.
4. **Opportunities Get Unnoticed:** The behavioural pattern of costs is not highlighted. So, opportunities, otherwise, available may get unnoticed. An export order may not be considered worthy for acceptance as its unit cost may not cover the total cost. If accepted, the order may cover variable costs and leave something towards contribution to boost up profits. Marginal costing provides the opportunity for acceptance, while Absorption costing ignores the same.

Check Your Understanding

State whether the following Statements are True or False

1. Under Absorption costing, all costs, both variable and fixed, are charged to the product for cost determination.
2. The objective of marginal costing and absorption costing is one and the same in respect of recovery of costs.
3. Marginal costing is appropriate in the short-run and for selecting special orders, while absorption costing is suited as a long-term objective.
4. The valuation of closing stock is low in absorption costing, compared to marginal costing, when the firm incurs fixed costs.
5. Absorption costing is appropriate as a long-term objective for the management to pursue as all costs are to be recovered, if the firm is to sustain.
6. When a special export order is under consideration, application of absorption costing may result in rejection of the order when full cost is not recovered by the unit cost in the proposed export order.

7. A special order would be accepted even if the firm recovers variable costs fully and fixed costs, partly, when absorption costing is followed.

Answers

1. True 2. False 3. True 4. False 5. True 6. True 7. False

Pick up the most Appropriate

1. Total costing is known as
   (a) Marginal Costing (b) Standard Costing
   (c) Absorption Costing (d) Process Costing
2. Recovery of variable and fixed costs is made under
   (a) Standard Costing (b) Marginal Costing
   (c) Absorption Costing (d) Process Costing
3. If only closing stock exists, without opening stock, profit under absorption costing would be…. compared to Marginal Costing on account of fixed costs.
   (a) More (b) Less
   (c) Same (d) Unpredictable
4. To decide whether an export order is to be accepted or not, the following helps in decision-making:
   (a) Absorption Costing (b) Marginal Costing
   (c) Process Costing (d) Operating Costing

Answers

1. (c) 2. (c) 3. (A) 4. (b)

Descriptive Questions

1. What is meant by Absorption Costing? Describe the objective of Absorption Costing. **(21.1 and 21.2)**
2. Bring out the differences between Absorption Costing and Marginal Costing. (**21.3)**
3. Explain the concept 'Absorption Costing' and bring out its limitations. (**21.1 and 21.8)**
4. What would be the impact of fixed costs on cost of production and profit under Absorption Costing and Marginal Costing? (**21.4 and 21.5)**
5. Marginal costing is appropriate in the short-run and for selecting special orders, while absorption costing is suited as a long-term objective-Discuss **(21.3)**
6. " Approach of Marginal Costing and Absorption Costing is different, yet both have a role to play" – Justify the statement, while explaining the differences between them. **(21.3)**

Interview Questions

Q.1. What is 'Absorption Costing'?

Ans. 'Absorption Costing', as the name indicates, absorbs both variable costs and fixed costs. All costs are treated as product costs. Under absorption costing, all costs, both variable and fixed, are charged to the products for cost determination.

Q.2. Name the main difference between 'Absorption Costing' and 'Marginal Costing'.

Ans. In 'Absorption costing', there is no difference between fixed costs and variable costs for treatment. Both are charged to production in the year in which they are incurred. Fixed costs are apportioned to different products on a suitable basis. In other words, all costs are charged to production for determining the selling price. However, in 'Marginal costing', fixed costs are ignored and only variable costs are considered for determining the selling price.

Q.3. Orders that may be refused in absorption costing may be accepted in marginal costing. Explain the reasoning.

Ans. Yes, orders that may be refused in absorption costing may be accepted in marginal costing. Fixed costs are ignored in marginal costing, which are considered in absorption costing for determining the cost of production. The aim of absorption costing is recovery of full costs, while marginal costing is concerned with recovery of variable costs, alone. Approach of both is, totally, different. For this reasoning, export order is accepted, under Marginal Costing, if price recovers variable costs and leaves something towards contribution. The same export order would be rejected under Absorption costing, if the price offered does not cover both variable costs and fixed costs, totally. Fixed costs are normal in every business. Hence, it is correct to say an export order may be rejected under Absorption Costing, while it may be accepted under Marginal Costing.

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