

## Marginal Costing

A Marginal costing system only includes VARIABLE costs when arriving at cost per unit produced.

### **Marginal costing and decision making**

Total cost includes not only marginal costs but an element of fixed costs into each unit produced and is not a satisfactory basis for decision making.

### **EXAMPLE**

#### PRODUCTION COSTS FOR APRIL

VARIABLE COSTS	\$150,000
FIXED COSTS	\$200,000

#### TOTAL COST OF

PRODUCTION 350,000

Cost per unit if output is 10,000 units is  $350,000/10000=\$35$

If 10,100 units are produced cost per unit would be  $351,500/10100=\$34.80$

Variable cost is 15 per unit so \$151,500

Fixed cost the same \$200,000

Total cost of production \$351,500

Therefore using total cost in decision making can lead to poor decision making as it ignores the behavior of costs.

Because Marginal costing separates marginal costs from fixed costs it is a better basis for decision making.

Example:

AB's factory has been making 1,000 units a year of a product. Last years costs were:

	\$
Direct labour	2,000
Direct materials	3,000
Factory indirect expenses (1/4 VARIABLE)	4,000
PRODUCTION COST	9,000
Admin and other expenses	1,000
	10,000

Each unit was sold for \$12 Total revenue \$12,000

The production cost per unit is  $9,000/1,000 = \$9$

The same pattern of costs follows in the next year. The firm is approached by a foreign buyer who wishes to purchase 200 units if the selling price is cut from \$12 to \$8.

The MD wants to reject the order as he sees that the cost per unit is higher than the selling price. The accountant drafts the following.

	Order not taken		Order taken	
		\$		\$
SALES 1,000U X \$12		12,000		
SALES 1,000 X \$12 AND 200U X \$8				13,600
LESS EXPENSES				
DIRECT LABOUR (\$2 PER UNIT)	2,000		2,400	
DIRECT MATS (\$3 PER UNIT)	3,000		3,600	
FACTORY INDIRECT (only ¼ variable so 3,000 fixed the 1,000 that is variable is \$1 pr unit)	4,000		4,200	
OTHER	1,000	(10,000)	1,000	(11,200)
		2,000		2,400

We can clearly see that by focusing on the behavior of costs and isolating those that are variable the firm should accept the order as their profit will increase by \$400.

**Marginal cost statements**

MP Ltd produces boxes its budget for the month of September is as follows:

	\$	\$
Direct materials		56,000
Direct labour		84,000
Royalties		10,000
Prime cost		150,000
Other production cost		
Variable	12,000	
Fixed	30,000	42,000
Selling and distribution costs		
Fixed	25,000	
Variable	10,000	35,000
Admin all fixed		55,000
Total cost		282,000
Budgeted net profit		148,000
Budgeted sales		430,000

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**As a marginal cost statement**

	Total costs/1000units	Marginal cost per unit
Variable costs	56,000	56
Direct materials	84,000	84
Direct labour	10,000	10
Direct expenses	12,000	12
Production costs variable		
Selling and distribution variable	10,000	10
<b>Marginal cost</b>	<b>172,000</b>	<b>172</b>
Contribution (selling price per unit less variable cost per unit) \$430-172 =\$258	258,000	258
Sales (selling price)	430,000	430

**CONTRIBUTION THE DIFFERENCE BETWEEN MARGINAL COST AND SELLING PRICE. CONTRIBUTION IS USED TO PAY FIXED COSTS WHAT REMAINS IS PROFIT.**

**Contribution /Sales ratio (profit volume ratio)** [www.aslevelaccounts.com](http://www.aslevelaccounts.com)

This is when contribution is expressed as a percentage of sales and shows how much of each sale is contribution and is expressed as a percentage.

Using our example

Contribution per unit/selling price per unit x 100

$$258/430 \times 100\% = 60\%$$

This ratio is useful for calculating profit at various levels of activity.

**For example**

CONTRIBUTION = 60% OF \$300,000	\$180,000
LESS FIXED OVERHEADS \$30,000+\$25,000+\$55,000	\$110,000
NET PROFIT	\$70,000

If sales rise to \$600,000

CONTRIBUTION

LESS FIXED OVERHEADS

NET PROFIT

FILL IN THE GAPS.

BREAK EVEN

The level of activity that the business makes neither a profit nor loss.

TOTAL CONTRIBUTION = TOTAL FIXED COSTS

TO CALCULATE DIVIDE TOTAL FIXED COSTS BY CONTRIBUTION PER UNIT.

BREAK EVEN CHARTS

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Show sales revenue plotted against total cost and provide within limits useful information.

1. Break even occurs where the sales line intersects the total cost line.
2. Profit at any particular level of activity to the right of the break even point is represented by the vertical distance between the sales revenue line and the total cost line at that point.
3. Loss at any particular level of activity to the left of the break even point is represented by the vertical distance between the total cost line and the sales revenue line.
4. Margin of Safety is the distance between break even point and the expected level of activity. It shows the amount by which actual activity can fall short of expected activity without a loss being incurred. It is a measure of risk.

TO CALCULATE

PROFIT/C/S RATIO X 100

FROM OUR EXAMPLE

$148,000/60 \times 100 = \$246,666$  57% OF BUDGETED SALES.

Or Total fixed cost/contribution per unit for volume which can be multiplied by selling price to find as sales revenue.

Limitation of Break even charts

1. Not all costs can be easily categorized as fixed or variable.
2. Fixed costs are generally only fixed within given parameters. The fixed cost line may need to rise in steps (stepped costs) at certain levels of activity.
3. Sales revenue and costs can rarely be represented by straight lines (discounts given)

**Decision making using marginal costing:**

We have already looked at a situation concerning reduction of selling price.

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Make or Buy decisions example

J makes boxes his budget for Jan 2009 is

	\$
Direct mats	10,000
Direct labour	15,000
Factory overheads variable	5,000
Factory overheads fixed	7,000
Selling and distribution expenses	
Variable	4,000
Fixed	9,000
Admin expenses fixed	32,000

Output is planned at 2,000 boxes

Selling price per box is \$45

J can buy the boxes made for \$14 per box

CALCULATIONS

CONTINUE TO MAKE

	\$
MARGINAL COST OF MAKING	
DIRECT MATS	5
DIRECT LABOUR	7.50
VARIABLE FACTORY OVERHEADS	2.50
MARGINAL COST OF PRODUCTION	15

Based upon this he should discontinue manufacture. Variable selling and distribution expenses are ignored as these will presumably still be incurred.

Obviously this is only based upon financial data and firms will have many reasons for continuing to manufacture.

Examples:

1. The product is unique and is not made by anyone else.
2. The firm wishes to supply its own brand.
3. The firm does not want to be dependent upon outside suppliers who may be unreliable.