Decision Making

Introduction

In the dynamic world of business, managers constantly face choices such as whether to **accept a special order**, **discontinue a product**, or **make or buy a component**. To make the right choices, they need **reliable cost and revenue information**. This is where **Marginal Costing** becomes an essential tool in **management accounting**.

Marginal costing is a technique that helps managers analyze how **changes in cost, volume, and price affect profit**. It focuses on the behavior of costs — distinguishing between **fixed** and **variable** costs — to support **short-term decision making** and **profit planning**.

Meaning and Definition

Marginal Costing is a technique of costing in which only variable costs are charged to products, while fixed costs are treated as period costs and written off in full against the contribution of the period.

In other words, **marginal costing** helps to determine the impact of **changes in activity levels** on total cost and profit.

Definitions:

- **ICMA,London:**
  "Marginal costing is the ascertainment of marginal cost and the effect on profit of changes in volume or type of output by differentiating between fixed and variable costs."
- **J.Batty:**
  "Marginal costing is the ascertainment of marginal cost and of the effect on profit of changes in the volume of output by distinguishing between fixed and variable costs."

Core Concepts in Marginal Costing

To understand decision-making under marginal costing, some key concepts must be clear:

Term	Meaning	Formula
Variable Cost	Cost that changes directly with production level (e.g., materials, labour).	—
Fixed Cost	Cost that remains constant irrespective of output level (e.g., rent, insurance).	—
Marginal Cost	Additional cost incurred for producing one extra unit.	Change in Total Cost / Change in Output
Contribution	The amount remaining after subtracting variable cost from sales. It contributes to fixed cost and profit.	Sales − Variable Cost
Profit	Surplus after meeting all costs.	Contribution − Fixed Cost

Profit/Volume (P/V) Ratio	Measures the relationship between contribution and sales.	(Contribution / Sales) × 100
Break-even Point (BEP)	The level of sales at which there is neither profit nor loss.	Fixed Cost / Contribution per Unit
Margin of Safety (MOS)	The excess of actual sales over break-even sales.	(Actual Sales − BEP Sales) / Actual Sales × 100

Role of Marginal Costing in Decision Making

Marginal costing provides **valuable cost data** for decision making.
In management, many decisions depend on knowing how profits will change if production or sales levels are altered.

Marginal costing helps management to:

1. Analyze the effect of cost and volume changes on profits.
2. Determine the minimum price to be charged for an order.
3. Decide whether to make or buy a product.
4. Identify the most profitable product mix when resources are limited.
5. Assess whether to accept or reject a special order.
6. Evaluate whether to continue or discontinue a department or product.
7. Determine whether to shut down operations temporarily or continue.

It provides a **scientific basis for short-term business decisions**, ensuring that managers base choices on relevant and reliable cost data.

Types of Decision Making under Marginal Costing

Marginal costing is used in various **short-term decision-making situations**.
Here's a detailed discussion of each major type:

A. Make or Buy Decision

Meaning:
When a company requires a component, it must decide whether to **manufacture it internally (make)** or **purchase it from an outside supplier (buy)**.

Managerial Considerations:

- Compare the **variable cost** of making the component with the **purchase price**.
- Consider whether fixed costs are **avoidable or unavoidable**.
- Evaluate **qualitative factors**, such as supplier reliability, quality, and delivery time.

Decision Rule:

- If **variable cost < purchase price**, and fixed costs are unavoidable → **Make the component**.
- If **purchase price < variable cost**, or fixed costs can be avoided → **Buy the component**.

Example:

Particulars	₹ per unit
Material cost	8
Labour cost	5
Variable overhead	2
Purchase price	16

→ Marginal (variable) cost = ₹15
Since ₹15 < ₹16 → Better to **make the component internally.**

B. Accept or Reject Special Order

Meaning:
When a company has **spare capacity**, it may receive an order at a price below the normal selling price. Management must decide whether to accept it.

Decision Rule:

- Accept the order if the **additional revenue** from the order > **additional variable cost**.
- Fixed costs are ignored, as they do not change with the order.

Example:
A company sells 5,000 units at ₹50 each.
Variable cost = ₹35 per unit; fixed cost = ₹40,000.
A new customer offers to buy 1,000 units at ₹40 each.

→ Contribution = ₹40 − ₹35 = ₹5/unit → ₹5,000 total.
Since fixed cost is unchanged, accepting adds ₹5,000 profit.
Accept the order.

C. Continue or Discontinue a Product / Department

Meaning:
Sometimes a product line or department appears unprofitable. Management must decide whether to continue or discontinue it.

Decision Rule:

- A product should be **continued** if it gives **positive contribution**, even if it shows a net loss after fixed costs.
- Discontinue only if it gives **negative contribution** (i.e., sales < variable cost).

Example:

Particulars	Product X (₹)
Sales	80,000
Variable Cost	60,000

Particulars	Product X (₹)
Fixed Cost	25,000
Profit / Loss	(5,000)

Although a loss of ₹5,000 is shown, contribution = ₹20,000.
If discontinued, total fixed costs will not reduce → total profit of the company decreases by ₹20,000.
Hence, **continue** Product X.

D. Product Mix / Limiting Factor Decision

Meaning:
When resources (like labour hours, material, or machine hours) are limited, management must decide which product combination yields maximum profit.

Decision Rule:
Choose the product with the **highest contribution per unit of limiting factor**.

Example:

Product	Contribution/unit	Labour hours/unit	Contribution/hour
A	₹30	3 hrs	₹10
B	₹20	1 hr	₹20

→ Product B gives higher contribution per labour hour → Produce **Product B**.

E. Sell or Process Further Decision

Meaning:
When a semi-finished product can either be sold at its current stage or processed further to earn more revenue.

Decision Rule:

- Process further if **incremental revenue > incremental cost** of processing.

  Example:

Particulars	₹
Selling price after processing	150
Selling price before processing	120
Additional processing cost	20

  → Incremental revenue = ₹30; incremental cost = ₹20 → Extra profit ₹10 → **Process further.**

F. Operate or Shutdown Decision

Meaning:
During periods of low demand or loss, management must decide whether to continue operations or temporarily shut down.

Decision Rule:

- Continue operations if **contribution > shutdown costs**.
- Shut down only if losses exceed the cost saved by stopping operations.

Example:
Fixed costs = ₹60,000 (avoidable ₹10,000), contribution = ₹55,000. Loss = ₹5,000, but avoidable fixed cost if shut down = ₹10,000. Since loss (₹5,000) < avoidable cost (₹10,000) → **Continue operations.**

G. Pricing Decisions

Meaning:
During competitive or tender situations, firms must decide the lowest price at which to sell without incurring a loss.

Decision Rule:

- The **minimum acceptable price** = **Variable Cost per unit**, if spare capacity exists.
- Price can be reduced as long as it gives positive contribution.

Tools Used in Marginal Costing Decision Making

Tool / Concept	Purpose / Function
Break-even Analysis	Determines sales level for no profit, no loss.
Contribution Analysis	Measures profitability of products or departments.
P/V Ratio	Assesses impact of sales changes on profit.
Margin of Safety	Indicates how much sales can drop before losses occur.
Differential Cost Analysis	Compares additional costs and revenues of alternatives.

Advantages of Marginal Costing in Decision Making

1. **Simplicity:** Easy to understand and apply in daily management.
2. **Effective Cost Control:** Clear segregation of fixed and variable costs helps in control.
3. **Profit Planning:** Aids in determining the impact of changes in volume, price, and cost on profit.
4. **Quick Decision Making:** Provides an instant view of the effect of decisions on profitability.
5. **Avoids Arbitrary Allocation:** Fixed overheads are not absorbed into product cost.
6. **Useful for Short-Term Analysis:** Ideal for evaluating temporary or tactical decisions.

Limitations of Marginal Costing

1. **Not for Long-Term Decisions:** Ignores fixed costs and capital expenditure.
2. **Difficulty in Cost Classification:** Separation of costs into fixed and variable is sometimes unrealistic.
3. **Ignores External Factors:** Market trends, quality, and competition are not considered.
4. **Assumption of Linearity:** Assumes costs and revenues vary proportionally with volume.
5. **Not Accepted for Financial Reporting:** It cannot replace absorption costing for external reporting.

Example

Data:

- Selling Price/unit = ₹50
- Variable Cost/unit = ₹30
- Fixed Cost = ₹40,000
- Output = 3,000 units

Calculations:

1. **Contribution/unit** = ₹50 − ₹30 = ₹20
2. **Total Contribution** = ₹20 × 3,000 = ₹60,000
3. **Profit** = ₹60,000 − ₹40,000 = ₹20,000
4. **Break-even Point (units)** = ₹40,000 / ₹20 = 2,000 units
5. **Margin of Safety** = (3,000 − 2,000) / 3,000 × 100 = 33.33%

The company earns ₹20,000 profit and can sustain a 33.33% fall in sales before reaching the break-even point.