Basic Principles in the Application of Managerial Economics

What is economics ?

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- Economics is an art and a science. Hence, It studies how people – individuals, households, firms and nations maximize their gains from their limited resources and opportunities.

- The term economics comes from the Greek work **‘Oikon’-House** and **‘Nomos**’- Law or rule. It is meant “**Practical wisdom of household management”.**

- Economics can be defined as **a study that discuss how a society tries to solve the human problem of unlimited wants and scarce recourses”.**

Introduction – Managerial Economics

- Managerial economics is the study of **economics theories, logic and tools** of economic analysis that are used in the **process of business decision making by managers.**

- **Economics theories and tools of economic** analysis are used to find out business problems, evaluate business options and opportunities to take an appropriate business decision.

Definition of Managerial Economics

- **Professor Mansfield** “Managerial economics is concerned with the **application of economics concepts** and economics to the problems of formulating **rational decision-makin**g”.

- **Spencer and Seigelman** “Managerial economics is **the integration of economic theory with business practices** for the purpose of **facilitating decision making** and forward planning by management”.

Nature of Managerial economics

1. Micro economics
2. Normative (prescriptive) science
3. Pragmatic (Practical)
4. Uses Macro economics
5. Uses theory of firm
6. Management oriented
7. Multi disciplinary
8. Art and science

1. **Micro economics:** Managerial economics is micro in character or in nature. This is because it studies the problems of an **individual business unit.** It does not study the problems of the **entire economy of the world or nation**.
2. **Normative (prescriptive) science:** Managerial economics is a normative science. It is concerned with what management should do under particular circumstances. It determines the goals of the enterprise. Then it develops the ways to achieve these goals. Managerial economics is prescriptive rather than descriptive. It prescribes solutions to various business problems.

3. **Pragmatic (practical) :** Managerial economics is pragmatic. It concentrates on making economic theory more application oriented. It tries to solve the managerial problems in their day-today functioning.

4. **Uses macro economics:** Marco economics is also useful to business economics. Macro-economics provides an intelligent understanding of the environment in which the business operates. Managerial economics takes the help of macro-economics to understand the external conditions such as business cycle, national income, economic policies of Government etc.

5. **Uses theory of firm:** Managerial economics largely uses the body of economic concepts and principles towards solving the business problems. Managerial economics is a special branch of economics to bridge the gap between economic theory and managerial practice.

6. **Management oriented:** The main aim of managerial economics is to help the management in taking correct decisions and preparing plans and policies for future. Managerial economics analyses the problems and give solutions just as doctor tries to give relief to the patient.

7. **Multi disciplinary:** Managerial economics makes use of most modern tools of mathematics, statistics and operation research. In decision making and planning principles such accounting, finance, marketing, production and personnel etc.

8. **Art and science.-**Managerial economics is both a science and an art. As a science, it establishes relationship between cause and effect by collecting, classifying and analyzing the facts on the basis of certain principles. It points ou**t to the objectives and also shows the way to attain the said objectives.**

9. **Fundamental academic subject**:- It is an academic subject that deserve a serious and scientific treatment. As science involve generalization, law and prediction.

Scope of Managerial Economics

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- The scope of Managerial Economics Includes following subjects:

  a) Theory of demand

     - Demand Analysis

     - Demand Theory

  a) Theory of Production and cost analysis

  b) Theory of Exchange or Price Theory

  c) Theory of Profit

  d) Theory of Capital and Investment

  e) Environmental Issues

- **Theory of Demand** – According to Spencer and Siegelman, “ A business firm is an economic organization which transforms productivity sources into goods that are to be sold in a market,”.

  - **Demand Analysis**- Demand Analysis is necessary for demand forecasting which is an important aspect of predicting **future sales is essential before preparing production schedule and employing productive resources**. It also helps to manager to understand identifying factors that influence the demand for the products of a firm. Thus, demand analysis and forecasting is essential for business planning.

  - **Demand Theory** –Demand theory is the **study of behavior of consumers**. regarding behavior of consumers, it answers question such as why do the consumer buy a particular commodity? How much they purchase on the demand of commodity? What are other factors influencing the demand of commodity? Why and when do the consumers stop to consume a commodity?

- **Theory of Production** – Production and cost analysis is important for the **smooth functioning of production process and project planning**. Certain amount of goods has to be produced to earn a certain level of profit. To obtain such production, some costs have to be incurred, here, the problem before management is to determine the level of production at which average cost of production may be minimum. It explains how average and marginal costs change with the change in production.

- **Theory of Exchange or Price Theory** – Theory of exchange is popularly known as price Theory. It explains how the price are determined under different types of market condition? How and to what extent advertisement can be helpful in increasing sales of a firm in a market. Price theory is helpful in determining price of the product in the firm. Price policy affects the demand of products. It includes the determination of **prices under different market conditions, pricing methods, pricing policies, differential pricing, product line pricing and price forecasting.**

- **Theory of Profit-** Every business and industrial enterprise aims at earning maximum profit. Profit is the difference between total revenue and total cost. Because of the following factors profit is always uncertain:

a) Demand of the product;
b) Prices of the factors of production;
c) Nature and degree of competition in the market ;
d) Price behavior under changing conditions.

Hence, profit planning and profit management are necessary for improving profit earning efficiency of the firm. Profit management requires that the most efficient techniques should be used for predicting future. The possibility of risks should be minimized as far as possible.

- **Theory of Capital and Investment** – Theory of capital and investment explains the following important issues:

a) Selection of most suitable investment project
b) Most efficient allocation of capital
c) Assessing the efficiency of capital
d) Minimizing the possibility of under capitalization or over capitalization.

Capital is foundation of any business . Like other factors of production it is also scarce and expensive. It should be allocated in most efficient manner.

Environmental Issues – Certain issues of macro economics also form a part of managerial economics. These relate to social and political environment in which a business and industrial firm has to operate. This is governed by the factors:

a) The type of economic system of the country
b) Business cycles
c) Industrial policy of the country
d) Trade and fiscal policy of the country
e) Taxation policy of the country
f) Price and labor policy
g) General trends in the production, employment, income , prices , saving and investment etc.
h) General trends in the work of financial institutions in the country
i) General trends in foreign trade of the country
j) Political system of the country

Significance of managerial economics in decision making

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- Business and industrial enterprise aim at earning maximum profit. To achieve this object, managerial executive has to resort to decision making which is the process of selecting a particular course of action among the number of alternatives. A sound decision requires fairly good knowledge of the aspects of economics theory and the tool of economic analysis which are directly involved in the process of decision making.
- **Views of Spencer and Siegelman** – Spencer and siegelaman have described the importance of managerial economics in a business and industrial enterprises as follows:

a) **Reconciling Traditional Theoretical concepts to the Actual Business Behavior and conditions**

b) **Estimating Economic Relationship**

c) **Predicting Relevant Economic Quantities**

d) **Understand significant external forces**

e) **Basis of business policies**

- **Reconciling Traditional Theoretical Concepts to the actual Business Behavior and Condition** – Managerial economics reconciles the tools, techniques, model and theories of traditional economics with actual business practices and with the environment in which a firm has to operate.

- **Estimating Economic Relationship-** Managerial economics estimates economic relationships between different business factors such as income, elasticity of demand and cost volume profit analysis etc.

- **Predicting Relevant Economic Quantities** – Managerial economics helps the management in predicting various economic quantities such as – cost, profit, demand, capital, production, prices etc. as a business manager has to work in an environment of uncertainty, the future should be well predicted in the light of these quantities.

- **Understanding significant forces-** The management has to identify all the important factors that influence a firm. These factors can broadly be divided into two categories . Managerial economics plays an important role by assisting management in understanding these factors.

a) **External Factors** – These are the factors over which a firm can not have any control. The plans, policies and programs of the firm should be adjusted in the light of these factors. Important external factors affecting decision making process of a firm are – economic system of the country, business cycle, fluctuations in national income and national production, industrial policy of the government, trade and fiscal policy of the government, taxation policy, licensing policy, trends in foreign trade of the country, general industrial relation in the country etc.

b) **Internal Factors-** These are the factors that are within the control of a firm. These factors relate to business operation. Knowledge of these factors helps the management in making sound business decisions.

- **Basis of Business Policies** – Managerial economics is the foundation of business policies. Business policies are prepared on the basis of **studies and finding of managerial economics which warns the management against all the turning points in national as well as international economy;**
- Thus, Managerial economics is helpful to the management in its decision making process.

Fundamental concept of M.E

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- There are five fundamental concepts that help the management of business firm to make correct decisions:

1. Incremental concept
2. Time perspective concept
3. Discounting concept
4. Opportunity cost concept
5. Equi –Marginal Concept

- These fundamental concept are the basic economic tools or principles for the entire gamut of managerial economics.

Incremental Concept

- The incremental concept involves the **estimation or the effect of decision alternative on revenue and cost.**

- There are two basic concept in this analysis. They are incremental revenue and incremental cost.

a) **Incremental revenue** is defined as the change in total revenue resulting from a decision

b) **Incremental cost** is defined as the change in the total cost resulting from a decision.

- Let us consider a case in which a new order will bring in Rs. 70000=00 additional revenue. The cost are estimated as follows:

Labor cost	**- Rs. 20000**
Material Cost	**- Rs. 30000**
Overheads Charges	**- Rs 24000**
(allocated at 120% of labor cost)	
Selling and administrative Exp.	**- Rs 10000**

Full cost	**= Rs 840000**

- **It is evident from the above cost estimation that the orders appears to be unprofitable because the order will result in loss of Rs. 14000. but suppose that there is idle capacity with which this order could be met.**

- Let the acceptance of this order will add only Rs. 14000 of overheads charges. This order requires no added selling costs since the only requirement is the acceptance of the order and no added administrative expenses.
- The incremental cost of accepting this order is estimated as follows:

Labor cost	**Rs. 10000**
Material Cost	**Rs. 30000**
Overheads Cost	**Rs. 14000**

Total Incremental Cost	**Rs. 54000**

It is evident fro the above incremental cost estimation that the order will result in an addition of Rs. 16000 in profit. Thus, This order is accepted, the incremental cost will be Rs. 54000 and the incremental revenue will be Rs. 70000. The profit of the firm will increase by Rs . 16000. therefore it advisable on the part of the management of the business firm that this order should be accepted.

Time Perspective Concept

- Business firms normally make decision both in the **short run as well as in the long run**. Short run is a period with which a few inputs, but not all, can be used by business firms. During this period, fixed cost (plant and equipment) is not taken into account in the determination of the level of output to be produced, but only variable costs (raw materials and labor) are taken for consideration.
- **Long run** is a period with which all inputs can be used by business firm . During this period, all costs (fixed cost and variable cost) are taken into account in the determination of the level of output to be produced.
- **Managerial economist are concerned** with short urn and long run effect of decision on revenue as well as costs. A decision may be made by business firm on the basis of short run consideration but may have long run repercussion that make it more or less profitable.
- For example- a business firm can earn more profit in the short run by charging a higher price during this period of scarcity but it will lose its customer ‘s goodwill and impair its long run survival.

- **Exp**- Suppose a firm is not utilizing its production capacity in full. It is manufacturing a particular product and selling is at Rs. 200 per unit. The cost of producing the product is Rs. 160 per unit (Rs. 120 per unit on variable cost and Rs. 40 on fixed costs). Firm gets an order of supplying of 2000 units at the rate of Rs. 160 per unit. If this order is evaluated with short run perspective, it seems to be profitable because it will fetch a net revenue of Rs. 320000, if it is evaluated with long run perspective, the following question arise :

a) If such order are accepted repeatedly at the same price, profitability of the firm will decrease substantially

b) If the regular customers of the firm come to know about the practice of firm of accepting orders below full cost, they may demand reduction in regular selling price of the production

c) The decision of accepting an offer at a price that does not cover the cost of production in full, may adversely affect the image of the firm.

Discounting Concept

- One of the fundamental ideas in economics is that a rupee today is worth more than a rupee tomorrow. This idea is a based on a well known proverb that **a bird in the hand is worth two in the bush.**

- For example- Suppose an individual is given a choice between a gift of Rs 1000 today or Rs 1000 Next year. Naturally , the first preference will be to get Rs. 1000 today.

- This is true even if there is certainty about the receipt of either gift since today's Rs 1000 can be inverted and accumulate interest during the year.

- Let suppose that a person earn 5% interest on any money. he has possessed. By the end of the year, it will accumulate interest to become a total of Rs. 10.50. the formula for computing the present discounted value is given by :

$$PDV = \frac{B_1}{(1 + R)} + \frac{B_2}{(1+ R)^2} + \frac{B_3}{(1+R)^3}$$

- PDV = Present discounted value
- R = Rate of interest
- B1, B2…………………Bn = Benefit accruing at the end of different period

Exp- PDV of Rs 1000 paid after 1 Year = Rs 1000/(1+ .05)1 = Rs. 952.38; at the end of the second year it will be Rs. 907.03, and at the end of the third year it will become Rs. 863.84 and so on.

Opportunity cost concept

- **According To Benham**, - “ The opportunity cost of anything is the next best alternative could be produced instead by the same factor or by an equivalent group of factors, costing the same amount of money”.

- **According W.W . Haynes** – “ Opportunity cost of a decision means the sacrifice of alternatives required by the decision”.

- Opportunity cost means the **cost of foregone opportunities**. Opportunity of a product or service means the revenue expected to be earned by the product or service if put to an alternative use.

Equi-Marginal Concept

- Allocation of resources is a major decision has to be taken allocation of available resources. The equi-marginal principle provides an answer to this problem. Thus, **this principle provides a base for maximum exploitation of all the productive resources of a firm so that profitability of the firm may be maximized.**
- **Example-** Suppose that there are 400 workers working in a firm and firm is producing four types of product – Product A, Product B, Product C and Product D.
- If the product A is related to rainy season, B & C is related to winter and Product D is related to summer season. Now in the raining season the demand of the product would also be increased and demand of summer and winter product's would not be as much as it should be in particular season. Hence, when a firm is not being able to use its resource fully in the Season of summer and winter so untapped resources should be used fully in the season of raining.

OBJECTIVE OF MODERN BUSINESS FIRM

Definition of a Business Firm

A business firm is defined as an **economic unit engaged in the production and distribution (or sale) of goods and services with a view to earn maximum profits**. A firm may be an individual proprietorship or a partnership or a joint stock company or a corporation.

Objective of Firm

There are a number of theories tell us about the objectives of a firm. The important ones are the following:

- Profit Maximization
  a) Innovation Theory
  b) Risk Bearing Theory
  c) Monopoly Theory
  d) Managerial Efficiency Theory

- Baumol's Theory of Sales Revenue Maximization theory

- Marris' Hypothesis of maximization of Growth Rate theory

- Behavioral Theory

- **Profit Maximization –** the traditional theory of firm's behavior that the objective of **firm owner is to maximize the amount of short run profit**. Before we dwell on the pros and cons of this theory, it is imperative to know about the "Profit".

- Profit is defined differently in **business and economics**. In accounting Where, it is difference between total receipts and the explicit (accounting) cost of carrying out the business; explicit cost is the **payments made to the hired factors of production.**

- While, the economic profit is defined as **implicit cost which should be subtracted from the Gross margin,** which stands for the imputed cost of self owned factor of production employed in the business. **The economic profit is the residual after both the explicit and implicit cost are deducted from the total receipts.**

- **Example-** A carpenter makes 100 chairs per month and sells them at Rs. 450 per piece. His expenses on rent of the shop, cost of wood and other material are worth Rs. 15000 per month . He employs two worker whose monthly wage bills stand at Rs. 7200 and pays electricity bill of about Rs. 1500 per month. He has invested Rs. 150000 in the form of machine, tools and inventories in the business, of which Rs. 75000 is form his own fund and the remaining Rs. 750000 is a loan from a bank at the interest rate of 18% per annum. Further assuming imputed cost of his own time, his wife's time and his own saving of Rs. 75000 for the month are Rs. 9000, Rs. 3000 and Rs. 750, respectively. The various calculation would then be:

- Total Receipts =Rs. 450 * 100 = Rs 45000

- Total Explicit costs =Rs. 15000+7200+1500+75000 (1/12)(0.18)
  - =Rs. 24825

- Total Implicit Cost = Rs. 9000+ 3000+750
  - = Rs. 12750

- Business Accounting Profit = Rs 45000 -24825
  - = Rs. 20175
- Economic Profit = Rs. 45000 – 24825 – 12750 = Rs. 7425.

- According to profit maximization theory - objective of business is generation of the largest amount of profit

- **Innovation Theory** – Firms make innovation in new products, new production techniques, new marketing strategies, etc. these innovations are costly and must be rewarding for them to flow continuously. For this reason, innovating firms are sometimes awarded patent right for a specific period of time, during which time no other firm is permitted to copy the product and or technology. Profit are thus considered **partly a reward for innovation.**
- **Risk Bearing Theory** – Firms invest large sums in the production system, expecting to produce goods and make profit on it. However, the production may run into difficulties, be delayed and there may not be an adequate market when production is ready. In consequence, reward for entrepreneurship are highly uncertain. The firms take **these risks and must be adequately rewarded.**
- **Monopoly Theory** – Some firms are able to enjoy certain monopoly power in view of being in possession of a huge capital, economics of scale, patent protection or socio political power. As a result, there is **a lack of perfect competition and such firms are able to reap economic profits**.

- **Managerial Efficiency Theory** – This category argues that economic profits can arise because of **exceptional managerial skills of well managed firms**.
- For example- if firms that operate at an average level of efficiency can avoid losses, then those which operate at above that level must reap economic profits. Thus, existence of profit is essential to ensure good performance.

Baumol's Theory of Sales Revenue Maximization

- Baumol raised serious question on the **validity of profit maximization** as an objective of the firm. He stressed that **in competitive markets, firms would rather aim at maximizing revenue, through maximization of sales**.
- He further stressed that in large organization, management is separate from owners. Hence, there would always be a **dichotomy** of **manager s' goals and owners' goals**. Manager salary and other benefits are largely linked with sales volume, rather than profits.
- Baumol hypothesized that manager often attach their personal prestige to the company's revenue or sales; therefore they would rather attempt to maximize the firm's total revenue, instead of profits. Moreover, sales volumes are better indicator of firm's position in the market, and growing sales strengthen the competitive sprit of the firm.
- **Sales maximization theory asserts that manager attempt to maximize the firms total revenue instead of profits.**

Marris' Hypothesis of maximization of Growth Rate

- Working on the principle of segregation of managers from owners, marris proposed that owners (shareholders) aim **at profits and market share**, whereas **managers aim at better salary, job security and growth.**

- These two sets of goals can be achieved by **maximizing balance growth of the firm (G), which is dependent on the growth rate of demand for the firm's products (Gd) and Growth rate of capital supply to the firm (Gc)**, Hence, growth rate of the firm is balanced when the demand for its product and the capital supply to the firm grow at the same rate.

- **Note- According to growth maximization theory owners (shareholders) aim at profits and market share, whereas managers aim at better salary, job security and growth.**

Behavioral Theories

- Objective of Behavioral theories of firms postulate that firms aim at **satisfactory behavior, rather than maximization**. This is the most important model which is known as **Simon's satisfying model** and the model developed **by Cyert and March**.

- **According to his satisfying Model**, the biggest challenge before modern business is **lack of full information and uncertainty about future.** Because of this, firms have to **incur cost in acquiring information in the present**, the objective of maximizing either profits, or sales, or growth is not possible. In fact, **they act as constraints to rational decision making by any firm**, because of this, the firm has to operate under **"bounded rationality**" and can only aim at achieving a satisfactory level of profit, sales and growth.
- **Conclusion- Behavioral theories propose that firms aim at satisfactory behavior rather than maximization. Firms has to operate under "bounded rationality" and can only aim at achieving a satisfactory level of profit, sales and growth.**