

MANAGERIAL ECONOMICS

LEARNING MATERIAL

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Meaning of Managerial Economics

Managerial Economics is an important study in the field of decision making by modern firms. It enables business executives to assume and analyze things. Therefore knowledge of basic tools of economic analysis is necessary to business executive. It becomes necessary to redesign economic ideas to practical world. This function is being done by managerial economics.

Definition of Managerial Economics

According to Haynes, Mote and Paul, “Managerial Economics is economics applied in decision making. It is a special branch of economics bridging the gap between abstract and managerial practice.”

Nature of Managerial Economics

- Micro Economic in Character
- Normative Science
- It is Pragmatic
- Macro Economics useful to Managerial Economics
- Managerial Economics is scientific art
- It is conceptual and metrical
- It studies the theory of the firm

Scope of Managerial Economics

- Demand Analysis & Forecasting
- Production and Cost Analysis
- Pricing Decisions, Policies and Practices
- Profit Management
- Capital Management
- Product Policy, Sales Promotion and Market Strategy

- Linear Programming & Theory of Games

Difference between Economics & Managerial Economics

Managerial Economics is economics applied to decision making. It is a special branch economics.

- Economics has both micro and macro aspects but ME is essentially micro in character.
- Economics studies both firm and individual. But ME studies only the problems of a business firm.
- In Economics we study the concepts and theoretical aspects of economic analysis. But ME is an applied part of the study.
- Economics is both positive and normative science but ME is essentially normative in nature.
- Economics studies only economic aspects of the problem. But ME studies both economic and non-economic problems.
- Economics studies the principles underlying rent, wages, interest and profit. But ME studies mainly the principles of profit only.
- In Economics, certain assumptions are being made. But in ME these assumptions disappear due to practical situations.
- The scope of Economics is much wider than that of ME.

Fundamental Concepts

There are five basic principles of managerial economics. They are:

1) The incremental concept

Incremental reasoning involves estimating the impact of a decision on costs and revenue. Incremental cost denotes change in total cost whereas incremental revenue means change in total revenue resulting from a decision of the firm.

2) The concept of time perspective

The time perspective principle states that the decision-maker must give due consideration both to the short run and long run effects of his decision.

3) The opportunity cost concept

According to the opportunity cost concept the cost of producing any commodity say X is the amount of commodity Y that might otherwise have been produced with same resources. It is the cost of retaining productive resources in their present employment. Opportunity cost is the cost of the next best alternative forgone.

4) The discounting concept

The concept of discounting is based on the recognition of the time value of money. Money has time value due to three reasons: earning power, changing prices and uncertainty.

5) The equi-marginal concept

This concept states that an input should be allocated in such a way that the value added by the last unit is the same in all uses. The equi marginal principle is applicable only if the law of diminishing returns operates. The concept is useful in capital budgeting, investment decisions and explanations of consumer behavior.

Role of a Managerial Economist

A managerial economist can play a significant role in helping management of firms to take sound decisions. He can use specialized skills and techniques. There may be several factors influencing the business over a period of time. Some may be external factors, others may be internal factors. External factors may lie outside the control of management and called as Business Environment. Internal factors are within the control of management and called as Business Operations.

External Factors

The managerial economist has to study the business environment. He must find out answers for the following questions:

- What is the outlook of the national economy?
- What are the demand prospects in new and established markets?
- Are money and credit conditions likely to be easy or tight?
- What are likely to be the prices of raw materials and finished products?
- Is competition likely to increase or decrease?
- What is the outlook regarding govt's economic policies and regulations?
- What phase of business cycle lies immediately?

Internal Factors

The managerial economist can help the management in making decisions regarding the internal business operations. He must find out answers for the following questions.

- What will be the reasonable sales and profit budget for the year?
- What will be the most appropriate production schedule and inventory policies for the next six months?
- What should be the appropriate price and wage policies?
- How much cash will be available in the coming months and how should it be invested?
- What changes in the credit policy of the business should be made?

Responsibilities of the Managerial Economist

The managerial economist must realize his responsibilities and obligations. The following are his responsibilities.

- To make reasonable profit on capital employed
- To make successful forecasts
- Maintains contacts with individual and data sources
- His status in the firm
- Specific functions

Objectives of a modern business firm

A business firm exists for certain objective or goals. The main aim of a firm is to produce and distribute goods and services to the society. But a firm may have more than one objective. A firm may have a number of goals at a time.

- 1) Profit maximization
- 2) Sales maximization
- 3) Utility maximization
- 4) Growth maximization
- 5) Long run survival
- 6) Satisfying behavior

DEMAND ANALYSIS

LAW OF DEMAND

It is a common experience in life that a change in price leads to a change in demand. That is, a person buys more of a product at lower prices than at higher prices. In short, the relation between price level and quantity demanded is inverse. Such connection between demand and price can be stated as follows: “Other things remaining the same, with a fall in price demand expands and with a rise in price demand contracts”.

Benham states, “Usually larger quantity of a commodity will be demanded at a lower price than at a higher price”.

Assumptions of the law:

- The tastes and preference of the consumer remain constant
- The consumer’s income is fixed and constant.

- Prices of other goods like substitutes and complementaries remain constant.
- The size of population is unchanged.
- The given change in price of the commodity is a normal one.
- There is no change in the distribution of the community's income and wealth.
- The level of taxation and other fiscal measures undergo no significant changes.
- Climate and weather conditions are unchanged.

Exceptions to the law of demand

Sometimes, with a fall in price demand also falls and with a rise in price, demand rises. In such cases, the demand curve slopes upwards from left to right. It is known as an exceptional demand curve. The upward sloping demand curve shows the exceptions to the law demand. The following are such exceptional cases:

- Conspicuous consumption
- Speculation
- Giffen goods (Inferior goods)
- Ignorance of the consumers
- Fear of shortage
- Consumer's psychological bias or illusion
- Inflation

Demand Determinants or changes in demand

1) Extension and contraction of demand

If demand for a commodity changes due to changes in its price it is called extension or contraction of demand. In such case the consumer moves from one point to another point on the same demand curve. This is called a movement along the demand curve.

2) Increase and decrease in demand

If the demand changes due to changes in other factors like population, income, taste etc., it is called increase or decrease of demand. In such case, price being constant, a new demand curve has to be drawn. When demand increases the new demand curve will shift to the right of the old demand curve. If demand decreases, it will shift to the left of the old demand curve. It will be below the old demand curve.

Types of demand

There are three types of demand.

1) Price demand

Price demand shows the relation between price and demand. That is the demand for a thing depends on its price.

2) Income demand

This shows the relationship between income and quantity of a commodity demanded. Generally the demand for a commodity increases when income increases and vice versa.

3) Cross demand

The demand for a commodity may change when the price of related goods change. This is known as cross demand.

Determinants of Demand

Demand changes due to changes in prices. We call it expansion and contraction of demand. But demand may also change due to other factors. We call this change as increase or decrease in demand. Such changes are due to the following reasons:

- Change in taste and fashion
- Changes in climate
- Changes in population
- Changes in the volume of money in circulation
- Changes in real income
- Changes in income distribution
- Goods with interconnected demand
- Change in trade
- Change in the level of taxation
- Expectations of future changes in prices
- Change in liquidity preference
- Advertisement
- New goods
- Changes in savings

Elasticity of Demand

The law of demand states that less will be demanded at higher price and more will be demanded at lower price. It does not tell the rate of which the amount demanded changes for a given percentage change in price. This is stated by what is called the 'elasticity of demand'. Elasticity of demand is nothing but the responsiveness of demand to change in price.

According to Marshall the elasticity of demand in a market is great or small according as the amount demanded increases much or little for a given fall in price and diminishes much or little for a given rise in price.

Elastic Demand

Demand for a thing is said to be elastic when a small change in price leads to a more than proportionate change in the quantity demanded. Eg. T.V. set.

Inelastic Demand

Demand for a thing is said to be inelastic when a big change in price leads to a less than proportionate change in the quantity demanded. Eg. Salt.

1) Price Elasticity of demand

The responsiveness of demand for a commodity to a change in its price is known as elasticity of demand. Price elasticity represents the rate of change in demand as a consequence of a change in the price of the commodity.

Types of price elasticity of demand

There are five different types of price elasticity of demand. They are following:

- i) Unit elasticity – the change in demand is exactly equal to change in price.
- ii) Elasticity more than unity – the change in demand is more than change in price
- iii) Perfectly elastic demand – elasticity is infinity if demand changes infinitely for a change in price
- iv) Elasticity less than unity – the change in demand is less than the change in price.
- v) Elasticity is zero or perfectly inelastic – there is no change in demand whatever the change in price is.

2) Income elasticity of demand

Income elasticity of demand is a measure of the responsiveness of demand to a given change in the income of the consumer.

Types of income elasticity of demand

- i) E_i equal to unity – if the proportionate change in the purchase of the commodity exactly equals the proportionate change in income, income elasticity is equal to one.
- ii) E_i greater than unity – if the proportionate change in purchase exceeds the proportionate change in income, elasticity is greater than unity.
- iii) E_i less than unity – if the proportionate change in purchase is lower than the proportionate change in income elasticity is less than unity.
- iv) Negative income elasticity – if the increase in income results in decrease in the quantity demanded, we call it negative income elasticity.
- v) E_i equal to zero – sometimes an increase in income will not affect in any way the amount demanded for a commodity. In such cases elasticity will be equal to zero.

3) Cross elasticity of demand

Responsiveness of demand to change in prices of related commodities is called Cross elasticity of demand.

4) Advertising elasticity of demand

Advertising expenses increases the sale of products. Expansion of demand through advertisement can be measured by advertising elasticity or proportional elasticity. Advertising elasticity measures the responsiveness of demand to changes in advertising expenses.

Factors affecting elasticity of demand

- Nature of the commodity
- Availability of substitutes
- Different uses of the commodity
- Share in the total expenditure
- Durability of the commodity
- Inexpensive goods
- Consumer's behavior
- Income level
- Range of prices
- Postponement
- Time factor

Methods of measuring elasticity of demand

- 1) Percentage method
- 2) Total outlay method
- 3) Point method or geometrical method
- 4) Arc method

Uses of the concept of elasticity of demand

- Determining price policy
- Importance to a monopolist
- Importance for the govt.
- Importance in international trade
- Explains paradox of poverty in the midst of plenty
- Pricing of joint products
- Importance in the determination of factor pricing
- Public utilities
- In counteracting trade cycles, inflation etc
- Advertisement

DEMAND FORECASTING

Meaning of Demand Forecasting

Demand forecasting is an estimate of sales during a specified future period which is tied to a proposed marketing plan and competitive forces. Hence demand forecasting is a projection of a firm's expected level of sales based on a chosen marketing plan and environment. Accurate forecasting is necessary for a firm to enable it to produce the required quantities at the current time.

Importance of Demand Forecasting

- To forecast future demand
- To fulfill the demand and earn profit
- To forecast future fall in demand
- To stay in production
- To prepare sales budget

Factors involved in demand forecasting

- Period of forecasting
- Level of forecasting
- General or specific forecasts
- Well established products and new products
- Producer's goods and consumer's goods
- Special factors

Short term forecasting and Long term forecasting

Short term forecasting is limited to a period not exceeding one year. In short term, production capacity does not change. And if the period of a forecast is more than a year, it is called long term forecast.

Methods of forecasting for an established product

- Survey of buyer's intentions
- Collective opinion method
- Trend projections
- Economic indicator
- Controlled experiments
- Experts opinion

Forecasting demand for a new product

- Evolutionary Approach

- Substitute approach
- Growth curve approach
- Opinion poll approach
- Sales experience approach
- Vicarious approach

Criteria or essentials of good forecasting method

- Plausibility
- Simplicity and ease of comprehension
- Economy
- Availability
- Accuracy

PRICE ANALYSIS

PRICE DETERMINATION UNDER VARIOUS MARKET FORMS

PERFECT COMPETITION

Features of perfect competition

- Large number of buyers and sellers
- Homogeneous product
- Freedom of entry and exit of firms over a period of time
- Perfect mobility of factors of production
- Perfect knowledge on the part of sellers and buyers
- Nil transport cost

Fixation of price under competitive industry

In perfect competitive industry, price will tend to be settled at the point where amount demanded is equal to amount supplied.

Short run equilibrium

In the short run, so far as an individual firm is concerned, fixed factors remain unchanged. Variable factors alone can be altered. In short, the size of the firm or the scale of operation of firms remains unchanged. In the short run, there is no possibility of entry of new firms into the industry or exit of existing firms from the industry. Hence there is possibility of firms being able

to reap abnormal profits with AR greater than AC. The firm will fix its best profit output at the point where $MR = MC$.

Long run equilibrium

Over a period of time, the individual firm can make alterations not only in variable factors but also in fixed factors. In the long run there is no possibility of any firm reaping abnormal profit or any firm sustaining losses. All the firms will be earning just normal profit with $AR = AC$. The long run equilibrium is called by Mrs. Joan Robinson as 'Full Equilibrium'.

Monopoly

The word monopoly consists of two syllables 'mono' and 'poly' which respectively mean single and selling. Literally therefore, if there is a single seller of a product there is said to be monopoly. A monopolist is defined in economics as the sole producer of a particular commodity for which there is no close substitute.

Causes for monopoly or kinds of monopoly

- 1) Natural monopolies
 - Soil and climate
 - Unusual talent
- 2) Legal monopolies
 - Patents
 - Copyright
- 3) Social monopolies
- 4) Voluntary monopolies
- 5) Technical monopolies
- 6) Huge investments

Price determination under monopoly

There are two important assumptions which we have to bear in mind (1) a monopolist has no one to compete with (2) he controls either supply or price. That is when a monopolist controls supply, price is determined by demand. Alternatively when he fixes price, the level of supply will be determined by demand.

The monopolist behaves rationally i.e. he wants to maximize his total profits. The best profit output is possible when $MR = MC$.

The monopolist's consideration while fixing price

- 1) Nature of demand
- 2) Cost conditions

3) State of public opinion and govt. intervention

Justification of monopoly

- A monopoly concern is of large size. Hence there is the availability of internal and external economies. This leads to reduction in the cost of production and reduction in price. The consumers get the ultimate benefit.
- A monopoly concern is financially sound and hence can meet depression in business than competitive firms.
- In public utility services like the supply of water, electricity, post and telegraphs, rail transport etc. competition is wasteful. In such cases monopoly is a social necessity.
- Firms can join together and form monopoly concerns to meet the competition of foreign firms.

Evils of monopoly

- The monopolist charges a higher price. Thus the consumers are exploited.
- A monopolist is not interested in producing to the full capacity. He restricts the output, sells less and gets more profit.
- A monopolist resorts to price discrimination. By this method he charges different prices for different people for the same service.
- The monopolist is not interested in introducing innovations.
- Monopolies have acquired political power. There are sources of corruption in these nations.

Regulation or control of monopoly

- Price regulations
- Taxation
- Other methods of control
- Encouraging rival firms
- Anti-monopoly legislation
- Public ownership of selected areas
- Formation of monopoly commission
- Formation of consumer's association

Monopoly price compared with competitive price

Perfect competition and monopoly are extreme cases. Perfect competition implies the absence of control over price by any one firm. Under competition in the short run, firms may reap abnormal profit or may sustain loss. But in the long run, firms will be earning only normal profit. Not only the firms but also the industry as a whole will be in equilibrium in the long-run.

Monopoly is just the opposite of pure competition. The monopolist is the sole producer and hence has control over price. There is no distinction between short-run and long-run equilibrium under monopoly.

Monopolistic competition

Under monopolistic competition there is competition which is keen though not perfect between many firms marking very similar products. Monopolistic and oligopoly are major types under imperfect competition.

Features of monopolistic competition

- Large number sellers
- Product differentiation
- Freedom of entry and exit and firms
- Nature of demand curve
- Selling costs
- Existence of excess capacity
- Irrelevance of the concept of industry

Equilibrium of the firm

Chamberlin assumes the firms under monopolistic competition to behave rationally, i.e. maximization of profits. Chamberlin distinguishes between

- 1) Short period equilibrium
- 2) Long period equilibrium

Short period equilibrium

In the short run, a firm cannot alter fixed factors. It can change only the variable factors. New firms cannot join the group or existing firms cannot leave the group. So there is possibility of firms reaping abnormal profit with $AR > AC$ or firms sustaining losses with $AR < AC$.

Long period equilibrium

Over a period of time new firms can join the group or existing firms may quit the group. Moreover, in the long run both fixed factors and variable factors can be altered. Hence in the long run $P = AC$, i.e. not only individual firms but also all the firms together are in equilibrium. Hence the long period equilibrium under monopolistic competition is known as “group equilibrium”

Comparison between monopoly and monopolistic competition

- Under monopoly there is only seller. But under monopolistic competition there is large number of sellers.
- Under monopoly, the product is identical; under monopolistic competition the product is similar.
- Under monopoly there is no place for selling cost; but under monopolistic competition selling costs are important features.
- Under monopoly even in the long run AR is greater than AC . There is possibility for earning abnormal profit. But under monopolistic competition in the long run $AR = AC$.

Defects or evils or wastes of competition

- 1) Unemployment
- 2) Excess capacity
- 3) Cross transport
- 4) Failure to specialize
- 5) Creation of inefficient firms

Oligopoly

Oligopoly is term derived from two Greek words oligo meaning a few and pollein meaning to sell. Oligopoly refers to a market form in which there are a few sellers. Each seller supplies a significant portion of the total output of the industry. Naturally the price and output policies of any one firm will have influence over the price and output policies of other firms. In short there is said to be a recognized interdependence and rivalry among firms under oligopoly.

Kinds of oligopoly

- 1) Perfect (pure) oligopoly and imperfect (Differentiated) oligopoly
- 2) Open oligopoly and closed oligopoly
- 3) Collusive oligopoly and Non-collusive
- 4) Partial and full oligopoly
- 5) Syndicated and organized oligopoly

Characteristics or features of oligopoly

- Inter-dependence
- Importance of selling cost
- Indeterminateness of demand curve facing an Oligopolist
- Price rigidity
- Group behavior
- Element of monopoly

Duopoly

Duopoly is a special case of oligopoly. It is a situation in which there are only two firms. These two firms are producing either a standardized product or two products which are only slightly differentiated. One of the conditions of duopoly is the complete independence of the two sellers. Analysis of price and output determination under duopoly is a complex affair.

PRICING POLICIES

Pricing Policies

The formulation of price policy and setting of the price are important function of a business economist. Proper pricing enables the expansion of sales. The price helps in maximization of income of a firm. In short, setting proper price will enable increase in sales and income. Prices are important for consumers.

Objectives of pricing policy

- ✓ To maximize profits
- ✓ To establish stable prices
- ✓ To face competitive situation
- ✓ To capture the market
- ✓ To achieve a target return
- ✓ On ability to pay principle
- ✓ In the interest of firms in the long run

Pricing methods or Types

- The cost plus or Full-cost pricing
- Pricing for a rate of return
- Marginal cost pricing
- Going rate pricing
- Customary prices
- Differential pricing

Kinds of discrimination

- Personal discrimination
- Place discrimination
- Use discrimination

Degrees of price discrimination

- ✓ First degree
- ✓ Second degree

- ✓ Third degree

Other pricing methods

- Export pricing
- Peak load pricing
- Imitative pricing
- Intuitive pricing
- Experimental pricing
- Odd number and critical number pricing
- Cyclical pricing
- Administered price

Two accepted pricing strategies

The problem arises as to what prices should be charges for the new products in the initial stage. There are two pricing policies practically accepted by firms (a) high initial or skimming price (b) Low penetration price.

Profit

A business firm is an organization designed to make profits and profits are the primary measure of its success. Profit is the share of entrepreneurs in the national income. Profit is what remains after making payments to other factors of production.

Functions and purposes of profit

- Measure of performance
- Ensuring supply of future capital
- Premium to cover costs of staying in business

Reasons for aiming at reasonable profit

- ✓ Forestalling potential competition
- ✓ Preventing Govt's intervention
- ✓ Attainment of industry leadership
- ✓ Maintaining consumer goodwill
- ✓ Restraining demand for wage increases
- ✓ Accent on liquidity of the firm
- ✓ Avoiding risk

Aims of profit policy

- Rate adequate enough to attract equity capital
- Rate earned by other companies
- Normal rate of profit of the concern
- Rate sufficient to finance growth.

Profit forecasting methods

- ✓ Spot projection
- ✓ Break even analysis and environmental analysis

COSTS ANALYSIS

Cost of production is one of the most important considerations for a businessman. He has to consider all the factors affecting cost of production, before starting production. He has to take several decisions very carefully.

Factors affecting cost behavior

- Location
- Scope
- Size

Cost concepts

Definition of cost concepts is necessary to stress that cost estimates produced by conventional financial accounting are not correct for all managerial uses. It is also necessary since different business problems call for different kinds of costs.

- Actual cost and Opportunity cost
- Out of Pocket cost and Book cost
- Sunk cost, Shut-down cost and Abandonment cost
- Direct cost and Indirect cost
- Explicit and Implicit cost
- Past and future cost
- Differential cost and Incremental cost
- Controllable and Uncontrollable cost
- Escapable and Inescapable cost
- Urgent and Postponement cost
- Replacement and Historical cost

- Fixed and variable cost

Cost – Output Relationship

1. Total fixed cost

Total fixed costs include the costs incurred in obtaining plant and machinery, administration and management. Total fixed costs are the same for all levels of output. Fixed costs do not change with the change in output. Fixed costs remain constant in the short period

2. Total variable cost

Those costs which are incurred on the employment of variable factors of production such as labour, rawmaterials, power and fuel etc.

3. Total cost

Total cost is the sum of its total fixed cost and total variable cost. Total cost will increase with the increase in output.

4. Average fixed cost

AFC per unit of output will decrease steadily with each increase in the number of units produced.

5. Average variable cost

Its property is that at first it should decline with increasing output at low levels of production.

6. Average cost

Average cost is nothing but total cost divided by output.

7. Marginal cost

Marginal cost is the addition made to total cost when one more unit of the commodity is produced.

Break-Even-Analysis

In business, profit should not be left to chance. They should be planned. The break-even analysis is a useful technique in this connection. The break-even analysis is mainly concerned with the cost-volume-profit analysis.

Meaning

In the words of Matz and Curry, “Break even analysis indicated at what level costs and revenues are equilibrium”. Thus the break even analysis is concerned with the calculation of break-even point. The break-even point may be described as a specific level of volume of sales where revenues and costs agree exactly. It is also known as ‘no profit – no loss point’. The net income is zero.

Assumptions of BEA

- All costs are either perfectly variable or absolutely fixed over the entire range of production.
- All revenue is perfectly variable with the physical volume of output.
- The volume of production and the volume of sales are equal.
- In the case of multi product firm the product mix is required to be suitable.

Determination of BEP

Break-even point may be determined either in terms of physical units or in money terms.

BEP in terms of physical units

This method is useful for a single product firm. The break-even volume is the number of units of a product that must be sold to get enough revenue just to cover all expenditure, both fixed and variable cost but also gives a margin to contribute towards fixed costs. The break-even point is reached when enough number of units has been sold so that the total contribution margin of the units sold is equal to the fixed costs.

BEP in terms of sales value

The multi product firms find it more suitable to determine the break-even point in terms of total rupee value. Here again, the contribution margin would be equal to fixed costs. But the contribution margin is expressed as a ratio to sales.

Managerial uses of BEA

- ✓ Safety margin
- ✓ Volume needed to attain target profit
- ✓ Change in price
- ✓ Change in costs
- ✓ To expand capacity or not
- ✓ Effect of alternative prices
- ✓ Drop and / or add decisions
- ✓ Make or buy decision
- ✓ Choosing product mix
- ✓ Equipment selection

✓ Production planning

Limitation of BEA

- Used only if a good accounting system is maintained.
- Static in character
- BEP is not an effective tool for long range use.
- It ignores the fact that profits are also caused by other factors.
- The relationship is linear
- It is an exclusion of time lag.
- It is limited to a few products.