

MODEL ANSWER

CODE : AS- 2405 MBA I SEM. 2013

SUBJECT :MANAGERIAL ECONOMICS

Section A

SHORT ANSWER TYPE QUESTION

1. Explain managerial decision making process

Ans: **Decision making** can be regarded as the [cognitive process](#) resulting in the selection of a course of action among several alternative scenarios. Every decision making process produces a final choice The output can be an action or an opinion of choice.

Decision making steps[

Each step in the decision making process may include social, cognitive and cultural obstacles to successfully negotiating dilemmas. It has been suggested that becoming more aware of these obstacles allows one to better anticipate and overcome them.¹ The Arkansas Program presents eight stages of [moral](#) decision making based on the work of [James Rest](#):

1. Establishing community: creating and nurturing the relationships, norms, and procedures that will influence how problems are understood and communicated. This stage takes place prior to and during a moral dilemma
2. Perception: recognizing that a problem exists
3. Interpretation: identifying competing explanations for the problem, and evaluating the drivers behind those interpretations
4. Judgment: sifting through various possible actions or responses and determining which is more justifiable
5. Motivation: examining the competing commitments which may distract from a more moral course of action and then prioritizing and committing to moral values over other personal, institutional or social values
6. Action: following through with action that supports the more justified decision. Integrity is supported by the ability to overcome distractions and obstacles, developing implementing skills, and ego strength
7. Reflection in action
8. Reflection on action

Other decision making processes have also been proposed. One such process, proposed by Dr. Pam Brown of [Singleton Hospital in Swansea, Wales](#), breaks decision making down into seven steps:¹

1. *Outline your goal and outcome.*
2. *Gather data.*
3. *Develop alternatives (i.e., brainstorming)*
4. *List pros and cons of each alternative.*
5. *Make the decision.*
6. *Immediately take action to implement it.*
7. *Learn from and reflect on the decision.*

2. What is cross elasticity of demand?

Ans:

Definition of 'Cross Elasticity Of Demand'

An economic concept that measures the responsiveness in the quantity demand of one good when a change in price takes place in another good. The measure is calculated by taking the percentage change in the quantity demanded of one good, divided by the percentage change in price of the substitute good:

$$E_c = \frac{P_1^A + P_2^A}{Q_1^B + Q_2^B} \times \frac{\Delta Q^B}{\Delta P^A}$$

Where :

P_1^A = The price of good A at time period 1

P_2^A = The price of good A at time period 2

Q_1^B = The quantity demanded of good B at time period 1

Q_2^B = The quantity demanded of good B at time period 2

ΔQ^B = The change in the quantity demanded of good B

ΔP^A = The change in price of good A

3. What do you mean by sample survey?

Ans: In **statistics**, **survey sampling** describes the process of selecting a sample of elements from a target **population** in order to conduct a survey. A **survey** may refer to many different types or techniques of observation, but in the context of survey sampling it most often involves a questionnaire used to measure the characteristics and/or attitudes of people. Different ways of contacting members of a sample once they have been selected is the subject of **survey data collection**. The purpose of **sampling** is to reduce the cost and/or the amount of work that it would take to survey the entire target population. A survey that measures the entire target population is called a **census**.

Survey samples can be broadly divided into two types: probability samples and non-probability samples. Probability-based samples implement a sampling plan with specified probabilities (perhaps adapted probabilities specified by an adaptive procedure). Probability-based sampling allows design-based inference about the target population. The inferences are based on a known objective probability distribution that was specified in the study protocol. Inferences from probability-based surveys may still suffer from many types of bias.

4. What is constant rate of return?

Ans: In **economics**, **returns to scale** and **economies of scale** are related terms that describe what happens as the scale of production increases in the long run, when all **input** levels including physical **capital** usage are variable (chosen by the firm). They are different terms and should not be used interchangeably. The term **returns to scale** arises in the context of a firm's **production function**. It explains the behaviour of rate of increase in the output/production to the subsequent increase in the inputs i.e. the factors of production in the long run. In the long run all factors of production are variable and subject to change due to a given increase in size/scale. The laws of Returns to scale is a set of three inter-related and chronological laws (stages): Law of Increasing Returns to Scale, Law of Constant Returns to Scale, and Law of Diminishing returns to Scale. If output increases by that

same proportional change then there are **constant returns to scale**(CRS). If output increases by less than that proportional change, there are **decreasing returns to scale** (DRS). If output increases by more than that proportional change, there are **increasing returns to scale** (IRS). In mainstream microeconomics, the returns to scale faced by a firm are purely technologically imposed and are not influenced by economic decisions or by market conditions (i.e., conclusions about returns to scale are derived from the specific mathematical structure of the production function *in isolation*).

5. Describe opportunity cost?

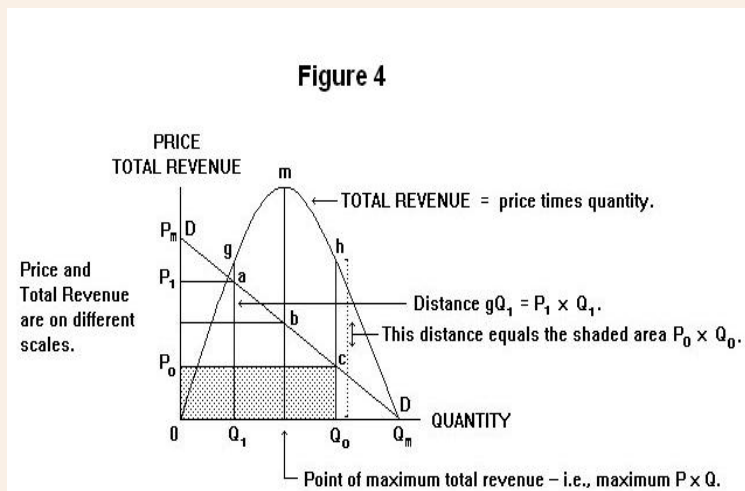
Ans: Unlike most costs discussed in economics, an opportunity cost is not always a number. The opportunity cost of any action is simply the next best alternative to that action - or put more simply, "What you would have done if you didn't make the choice that you did".

I have a number of alternatives of how to spend my Friday night: I can go to the movies, I can stay home and watch the baseball game on TV, or go out for coffee with friends. If I choose to go to the movies, my opportunity cost of that action is what I would have chose if I had not gone to the movies - either watching the baseball game or going out for coffee with friends. Note that an opportunity cost only considers the **next best** alternative to an action, not the entire set of alternatives.

Opportunity costs are usually easier to understand if you have an example. The article "[Baseball Players and Opportunity Costs](#)" gives an example of how opportunity costs can be used in practice.

6. Discuss the concept of revenue and supply?

Ans: The total revenue to the seller of a commodity, or total expenditure by the purchaser, is obtained by multiplying the price by the quantity. It appears in Figure 4 as the area of a rectangle whose bottom left corner is the origin and top right corner is a point on the demand curve. The top left and bottom right corners equal price and quantity respectively. The shaded rectangle in Figure 4, for example, gives the total revenue at point **c** on the demand curve---the product of the price P_0 and the quantity Q_0 . The total revenue at point **a** is the rectangle $P_1 a Q_1 0$.



It is also clear in the above Figure that the total revenue varies as we move along the demand curve. **The total revenue at zero quantity and price P_m is zero. As we move down along the demand curve, the total**

revenue increases, reaching its maximum at the point b (which is middle-distant from the two ends of the curve) and then declines, reaching zero again at price zero and quantity Q_m .

Definition of 'Supply'

A fundamental economic concept that describes the total amount of a specific good or service that is available to consumers. Supply can relate to the amount available at a specific price or the amount available across a range of prices if displayed on a graph. This relates closely to the demand for a good or service at a specific price; all else being equal, the supply provided by producers will rise if the price rises because all firms look to maximize profits.

7. Explain any four features of oligopoly?

Ans: The term oligopoly is derived from two Greek words, Oleg's and 'Pollen'. Oleg's means a few and Pollen means to sell thus. Oligopoly is said to prevail when there are few firms or sellers in the market producing and selling a product. Oligopoly is often referred to as "competition among the few". In brief oligopoly is a kind of imperfect market where there are a few firm in the market, producing either and homogeneous product or producing product which are close but not perfect substitutes of each other.

There is no such border line between a few and many. Usually oligopoly is understood to prevail when the numbers of sellers of a product are two to ten. Oligopoly is of two types-oligopoly without product differentiation or pure. Oligopoly and oligopoly with product differentiation.

Characteristics of Oligopoly:

1. Interdependence:

The firms under oligopoly are interdependent in making decision. They are interdependent because the number of competition is few and any change in price & product etc by an firm will have a direct influence on the fortune of its rivals, which in turn retaliate by changing their price and output. Thus under oligopoly a firm not only considers the market demand for its product but also the reactions of other firms in the industry. No firm can fail to take into account the reaction of other firms to its price and output policies. There is, therefore, a good deal of interdependences of the firm under oligopoly.

2. Importance of advertising and selling costs:

The firms under oligopolistic market employ aggressive and defensive weapons to gain a greater share in the market and to maximise sale. In view of this firms have to incur a great deal on advertisement and other measures of sale promotion. Thus advertising and selling cost play a great role in the oligopolistic market structure. Under perfect competition and monopoly expenditure on advertisement and other measures is unnecessary. But such expenditure is the life-blood of an oligopolistic firm.

3. Group behaviour:

Another important feature of oligopoly is the analysis -of group behaviour. In case of perfect competition, monopoly and monopolistic competition, the business firms are assumed to behave in such a way as to maximize their profits. The profit-maximizing behaviour on his part may not be valid. The firms under oligopoly are interdependent as they are in a group.

4. Indeterminateness of demand curve:

This characteristic is the direct result of the interdependence characteristic of an oligopolistic firm. Mutual interdependence creates uncertainty for all the firms. No firm can predict the consequence of its price-output policy. Under oligopoly a firm cannot assume that its rivals will keep their price unchanged if he makes change in its own price. As a result, the demand curve facing an oligopolistic firm loses its determinateness.

The demand curve as is well known, relates to the various quantities of the product that could be sold at different levels of prices when the quantity to be sold is itself unknown and uncertain the demand curve can't be definite and determinate.

5. Elements of monopoly:

There exist some elements of monopoly under oligopolistic situation. Under oligopoly with product differentiation each firm controls a large part of the market by producing differentiated product. In such a case it acts in its sphere as a monopolist in lining price and output.

6. Price rigidity:

Under oligopoly there is the existence price rigidity. Prices tend to be rigid and sticky. If any firm makes a price-cut it is immediately retaliated by the rival firms by the same practice of price-cut. There occurs a price-war in the oligopolistic condition. Hence under oligopoly no firm resorts to price-cut without making price-output decision with other rival firms. The net result will be price -finite or price-rigidity in the oligopolistic condition.

8. What is transfer pricing?

Ans:

Definition of 'Transfer Price'

The price at which divisions of a company transact with each other. Transactions may include the trade of supplies or labour between departments. Transfer prices are used when individual entities of a larger multi-entity firm are treated and measured as separately run entities.

Also known as "transfer cost".

In managerial accounting, when different divisions of a multi-entity company are in charge of their own profits, they are also responsible for their own "Return on Invested Capital". Therefore, when divisions are required to transact with each other, a transfer price is used to determine costs. Transfer prices tend not to differ much from the price in the market because one of the entities in such a transaction will lose out: they will either be buying for more than the prevailing market price or selling below the market price, and this will affect their performance.

In addition, transfer pricing is a great way to move goods from one company division or department to another without generating a lot of postings on the accounts receivable and accounts payable books. The value of the goods is simply moved from one division to the other, a process that greatly simplifies the process. Normally, there is a simple form that accompanies the physical transfer of the goods, and it is used by both the sender and the recipient to make appropriate posts in company accounting records. This process eliminates the necessity for invoices, tariffs, internal bills of lading, and other documents that would normally apply to a new purchase using an outside vendor.

While the main purpose of transfer pricing is to enhance the overall value of the corporate family of companies, there are instances when this type of transaction can be abused. This is especially true when transfers to

international locations are conducted. Today, many countries have regulations to help prevent the use of this pricing method as a means of evading taxes or similar unethical and illegal activities.

9. What do you mean by recession in business cycle?

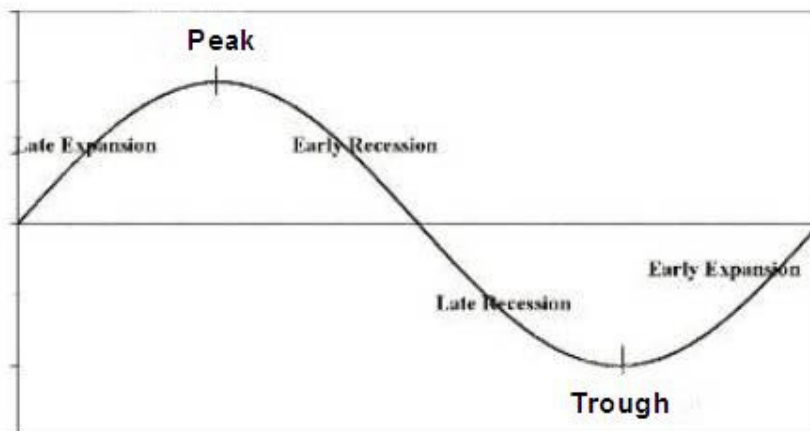
Ans:

Definition of 'Recession'

A significant decline in activity across the economy, lasting longer than a few months. It is visible in industrial production, employment, real income and wholesale-retail trade. The technical indicator of a recession is two consecutive quarters of negative economic growth as measured by a country's gross domestic product (GDP); although the National Bureau of Economic Research (NBER) does not necessarily need to see this occur to call a recession.

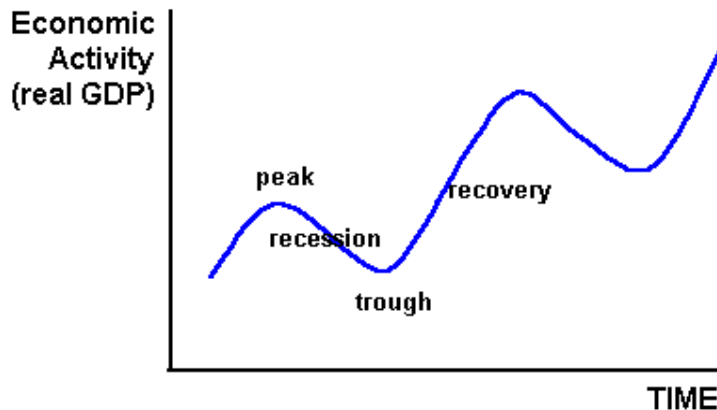
Recession is a normal (albeit unpleasant) part of the business cycle; however, one-time crisis events can often trigger the onset of a recession. The global recession of 2008-2009 brought a great amount of attention to the risky investment strategies used by many large financial institutions, along with the truly global nature of the financial system. As a result of such a wide-spread global recession, the economies of virtually all the world's developed and developing nations suffered extreme set-backs and numerous government policies were implemented to help prevent a similar future financial crisis.

A recession generally lasts from six to 18 months, and interest rates usually fall in during these months to stimulate the economy by offering cheap rates at which to borrow money.



10. What is creeping inflation?

Ans: Circumstance where the inflation of a nation increases gradually, but continually, over time. This tends to be a typically pattern for many nations. Although the increase is relatively small in the short-term, as it continues over time the effect will become greater and greater.



Section B

LONG ANSWER TYPE QUESTION

Question 2: Managerial Economics bridges the gap between economic theory and business practice .

Explain.

Ans.

The discipline of managerial economics deals with aspects of economics and tools of analysis, which are employed by business enterprises for decision-making. Business and industrial enterprises have to undertake varied decisions that entail managerial issues and decisions. Decision-making can be delineated as a process where a particular course of action is chosen from a number of alternatives. This demands an unclouded perception of the technical and environmental conditions, which are integral to decision making. The decision maker must possess a thorough knowledge of aspects of economic theory and its tools of analysis. The basic concepts of decision-making theory have been culled from microeconomic theory and have been furnished with new tools of analysis. Statistical methods, for example, are pivotal in estimating current and future demand for products.

The methods of operations research and programming proffer scientific criteria for maximizing profit, minimizing cost and determining a viable combination of products. Decision-making theory and game theory, which recognize the conditions of uncertainty and imperfect knowledge under which business managers operate, have contributed to systematic methods of assessing investment opportunities. Almost any business decision can be analyzed with managerial economics techniques. However, the most frequent applications of these techniques are as follows:

- **Risk analysis:** Various models are used to quantify risk and asymmetric information and to employ them in decision rules to manage risk.

- **Production analysis:** Microeconomic techniques are used to analyze production efficiency, optimum factor allocation, costs and economies of scale. They are also utilized to estimate the firm's cost function.

- **Pricing analysis:** Microeconomic techniques are employed to examine various pricing decisions. This involves transfer pricing, joint product pricing, price discrimination, price elasticity estimations and choice of the optimal pricing method.

- **Capital budgeting:** Investment theory is used to scrutinize a firm's capital purchasing decisions.

CHARACTERISTICS OF MANAGERIAL ECONOMICS

1. **Microeconomics:** It studies the problems and principles of an individual business firm or an individual industry. It aids the management in forecasting and evaluating the trends of the market.

2. **Normative economics:** It is concerned with varied corrective measures that a management undertakes under various circumstances. It deals with goal determination, goal development and achievement of these goals. Future planning, policy-making, decision-making and optimal utilisation of available resources, come under the banner of managerial economics.
3. **Pragmatic:** Managerial economics is pragmatic. In pure micro-economic theory, analysis is performed, based on certain exceptions, which are far from reality. However, in managerial economics, managerial issues are resolved daily and difficult issues of economic theory are kept at bay.
4. **Uses theory of firm:** Managerial economics employs economic concepts and principles, which are known as the theory of Firm or 'Economics of the Firm'. Thus, its scope is narrower than that of pure economic theory.
5. **Takes the help of macroeconomics:** Managerial economics incorporates certain aspects of macroeconomic theory. These are essential to comprehending the circumstances and environments that envelop the working conditions of an individual firm or an industry.

Knowledge of macroeconomic issues such as business cycles, taxation policies, industrial policy of the government, price and distribution policies, wage policies and antimonopoly policies and so on, is integral to the successful functioning of a business enterprise.

6. **Aims at helping the management:** Managerial economics aims at supporting the management in taking corrective decisions and charting plans and policies for future.
7. **A scientific art:** Science is a system of rules and principles engendered for attaining given ends. Scientific methods have been credited as the optimal path to achieving one's goals.

Managerial economics has been is also called a scientific art because it helps the management in the best and efficient utilization of scarce economic resources. It considers production costs, demand, price, profit, risk etc. It assists the management in singling out the most feasible alternative. Managerial economics facilitates good and result oriented decisions under conditions of uncertainty.

8. **Prescriptive rather than descriptive:** Managerial economics is a normative and applied discipline. It suggests the application of economic principles with regard to policy formulation, decision-making and future planning. It not only describes the goals of an organization but also prescribes the means of achieving these goals.

Managers study managerial economics because it gives them insight to reign the functioning of the organization. If manager uses the principles applicable to economic behaviour in a reasonably, then it will result in smooth functioning of the organization.

Managerial Economics is a Science

Managerial Economics is an essential scholastic field. It can be compared to science in a sense that it fulfils the criteria of being a science in following sense:

Science is a Systematic body of Knowledge. It is based on the methodical observation. Managerial economics is also a science of making decisions with regard to scarce resources with alternative applications. It is a body of knowledge that determines or observes the internal and external environment for decision making.

In science any conclusion is arrived at after continuous experimentation. In Managerial economics also policies are made after persistent testing and trailing. Though economic environment consists of human variable, which is unpredictable, thus the policies made are not rigid. Managerial economist takes decisions by utilizing his valuable past experience and observations.

Science principles are universally applicable. Similarly policies of Managerial economics are also universally applicable partially if not fully. The policies need to be changed from time to time depending on the situation and attitude of individuals to those particular situations. Policies are applicable universally but modifications are required periodically.

Managerial Economics requires Art

Managerial economist is required to have an art of utilizing his capability, knowledge and understanding to achieve the organizational objective. Managerial economist should have an art to put in practice his theoretical knowledge regarding elements of economic environment.

Managerial Economics for administration of organization

Managerial economics helps the management in decision making. These decisions are based on the economic rationale and are valid in the existing economic environment. Managerial economics is helpful in optimum resource allocation. The resources are scarce with alternative uses. Managers need to use these limited resources optimally. Each resource has several uses. It is manager who decides with his knowledge of economics that which one is the preeminent use of the resource.

Managerial Economics has components of micro economics

Managers study and manage the internal environment of the organization and work for the profitable and long-term functioning of the organization. This aspect refers to the micro economics study. The managerial economics deals with the problems faced by the individual organization such as main objective of the organization, demand for its product, price and output determination of the organization, available substitute and complimentary goods, supply of inputs and raw material, target or prospective consumers of its products etc.

Managerial Economics has components of macro economics

None of the organization works in isolation. They are affected by the external environment of the economy in which it operates such as government policies, general price level, income and employment levels in the economy, stage of business cycle in which economy is operating, exchange rate, balance of payment, general expenditure, saving and investment patterns of the consumers, market conditions etc. These aspects are related to macro economics.

Managerial Economics is dynamic in nature

Managerial Economics deals with human-beings (i.e. human resource, consumers, producers etc.). The nature and attitude differs from person to person. Thus to cope up with dynamism and vitality managerial economics also changes itself over a period of time.

The scope of managerial economics refers to its area of study. Managerial economics dealing the decisional problems of both business and non business organizations. Managerial economics giving solution to the problems of non-profit organizations like schools, hospital etc., also.

In general, the scope of managerial economics comprehends all those economic concepts, theories and tools of analysis which can be used to analyze the business environment and to find solutions to practical business problems. In other words, managerial economics is economics applied to the analysis of business problems and decision-making. Broadly speaking, it is **applied economics**.

The areas of business issues to which economic theories can be directly applied may be broadly divided into two categories:

- (A) Operational or internal issues, and
- (B) Environmental or external issues.

A) Operational/internal issues

Operational problems are of internal nature. They include all those problems which arise within the business organization and fall within the purview and control of the management. Some of the basic internal issues are: (i) choice of business and the nature of product, *i.e.*, what to produce; (ii) choice of size of the firm, *i.e.*, how much to produce; (iii) choice of technology, *i.e.*, choosing the factor-combination; (iv) choice of price, *i.e.*, how to price the commodity; (v) how to promote sales; (vi) how to face price competition; (vii) how to decide on new investments; (viii) how to manage profit and capital; (ix) how to manage inventory, *i.e.*, stock of both finished goods and raw materials. These problems may also figure in forward planning. The following aspects may be said to fall under internal issues:

1. **Demand analysis and Forecasting:** - The demands for the firm product would change in response to change in price, customer's income, his taste etc. which are the determinants of demand. A study of the determinants of demand is necessary for forecasting future demand of the product.
2. **Cost analysis:** - Estimation of cost is an essential part of managerial problems. The factors causing variation of cost must be found out and allowed for it management to arrive at cost estimates. This will help for more effective planning and sound pricing practices.
3. **Pricing Decisions:** - The firm's aim to profit which depends upon the correctness of pricing decisions. Pricing is an important area of managerial economics. Theories regarding price fixation help the firm to solve the price fixation problems.
4. **Profit Analysis:** - Business firms working for profit and it is an important measure of success. But firms working under conditions of uncertainty. Profit planning becomes necessary under the conditions of uncertainty.
5. **Capital budgeting:** - The business managers have to take very important decisions relating to the firm's capital investment. The manager has to calculate correctly the profitability of investment and to properly allocate the capital. Success of the firm depends upon the proper analysis of capital project and selecting the best one.
6. **Production and supply analysis:** - Production analysis is narrower in scope than cost analysis. Production analysis proceeds in physical terms while cost analysis proceeds in monetary terms. Important aspects of supply analysis are; supply schedule, curves and functions, law of supply...

B) Environmental or external issues

It refers to the general business environment in which the firm operates. A study of economic environment should include:

1. The types of economic system in the country.
2. The general trend in production, employment, income, prices, savings and investments.
3. Trends in the working of financial institutions like banks, financial corporations, insurance companies etc.
4. Magnitude and trends in foreign trade.
5. Trends in labour and capital market.
6. Government economic policies viz., industrial policy, monetary policies, fiscal policy, price policy etc.
7. Social factors like the value system of the society, property rights, customs and habits,
8. Social organizations like trade unions, consumers' cooperatives and producers unions,
9. *Political environment* is constituted of such factors as political system democratic, authoritarian, socialist, or otherwise; state's attitude towards private business, size and working of the public sector and political stability, and
10. the degree of openness of the economy and the influence of MNCs on the domestic markets.

GAP BETWEEN THEORY AND PRACTICE

It is widely known that there exists a gap between theory and practice in all walks of life, more so in the world of economic thinking and behaviour. A theory which appears logically sound may not be directly applicable in practice.

Similarly the real economic world is extremely complex. The reason is that in an economy, everything is inter-linked. Economic decisions and economic activities of economic entities – individuals, households, firms and the government are, therefore interconnected and interdependent. Change in one important economic variable generates a wave of changes, beginning with a change in the directly related areas, which create counter changes. In economy terminology, a change in one economic variable causes change in a large number of related variables. As a result, the entire economic environment changes. An altering economic environment changes people's economic goals, motivations and aspirations which in turn, change manager's decisions. In fact, decision-making becomes a continuous process. The entire system looks "hopelessly chaotic". Under the condition of changing environment and economic decisions, it is extremely difficult to predict human behaviour.

On the contrary, economic theories are rather simplistic because they are propounded on the basis of economic models built on simplifying assumptions –most economic models assume away the interdependence of economic variables. In fact, through these models, economists create a simplified world with its restrictive boundaries. It is from such models that they derive their own conclusions and formulate their theories. It is another thing that some economic, rather econometric, models are more complex than the real world itself. Although economic models are said to be an extraction from the real world, how close it is to reality depends on how realistic are the assumptions of the model. The assumptions of economic models are often claimed to be unrealistic. The most common assumption of the economic models is the *ceteris paribus* assumption, i.e., other things remain constant. For example, consider the law of demand. It states that demand for a commodity changes in reverse direction of the change in its price, other things remaining constant. The "other things" include consumers income, prices of substitute and complementary goods, consumer's tastes and preferences, advertisement, consumer's expectations about the commodity future price, 'demonstration effect', and 'snob effect', etc.

In reality, however, these factors do not remain constant. Since 'other things' do not remain constant, the *ceteris paribus* assumption is alleged to be the most unrealistic assumption. Nevertheless, the law of demand does state the nature of relationship between the demand for a product and its price, in isolation of the factors determining the demand for that product.

Economic theories are no doubt, hypothetical in nature but not away from reality. Economic theories are, in fact, a caricature of reality. In their abstract form, however, they do look divorced from reality. Besides, abstract economic theories cannot be straightaway applied to real life problems. This should, however, not mean that economic models and theories do not serve any useful purpose. 'Microeconomic theory facilitates the understanding of what would be a hopelessly complicated confusion of billions of facts by constructing simplified models of behaviour, which are sufficiently similar to the actual phenomenon and thereby help in understanding them'. Nevertheless, it cannot be denied that there is apparently a gap between economic theory and practice. This gap arises mainly due to the inevitable gap between the abstract world of economic models and the real world.

How Managerial Economics fills the Gap

There is undeniably a gap between economic theory and the real economic world. But at the same time, it is also a mistaken view that economic theories can be directly applied to business decision-making. As already mentioned, economic theories do not offer a custom – made or readymade solution to business problems but what they actually do is to provide a framework for logical economic thinking and analysis. The need for such a framework arise because the real economic world is too complex to permit considering every bit of relevant facts that influence economic decisions. In the words of Keynes, "The objective of [economic] analysis is not to provide a machine, or method of

blind manipulation, which will furnish an infallible answer, but to provide ourselves with an organized and orderly method of thinking our particular problem. In the opinion of Boulding, the objective of economic analysis is to present the 'map' of reality rather than a perfect picture of it. In fact, economic analysis presents us with a road map; it guide us to the destination, but does not carry us there.

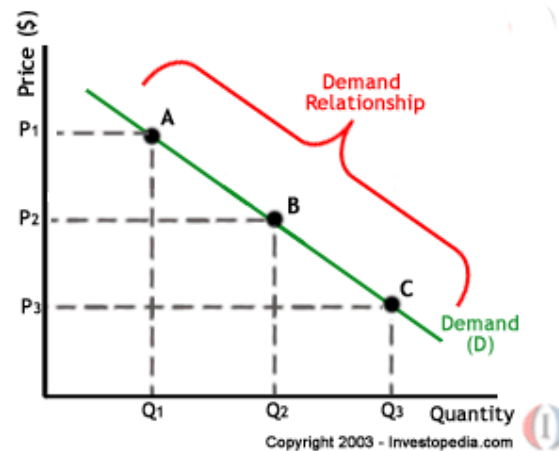
Here, as mentioned earlier managerial economics can also be compared with medical science. Just as the knowledge of medical science helps in diagnosing the disease and prescribing an appropriate medicine, managerial economics helps in analysing the business problems and in arriving at an appropriate decision.

On one side there is the complex business world and on the other are abstract economic theories. The big gap between the problems of logic that intrigue economic theorists and the problems of policy that plague practical management needs to be bridged in order to give executive access to the practical contributions that economic thinking can make to top management policies. Managerial decision-makers deal with the complex, rather chaotic, business conditions of the real world and have to find the way to their destination i.e., achieving the goal that they set for themselves. Managerial economics applies economic logic and analytical tools to shift wheat from chaff. The economic logic and tools of analysis guide them in

1. Identifying their problems in achieving their goal,
2. Collecting the relevant data and related facts,
3. Processing and analysing the facts,
4. Drawing relevant conclusions,
5. Determining and evaluating the alternative means to achieve the goal and
6. Taking a decision without application of economic logic and tools of analysis, business decisions are most likely to be irrational and arbitrary, which are often counter-productive.

Ques. 3

❖ Distinguish between:



- 1) Demand function and demand schedule

Ans: **1. Demand Function:**

A demand function of an individual buyer is an algebraic form of expressing his demand behavior. In it, the quantity demanded period of time is expressed as a function of (that is, determined by) several variables. A demand function may be in a generalized form or a specific form. the latter case, the function describes the exact manner in which quant demanded is supposed to vary in response to a change in one or mo independent variables. Some typical examples of a demand function for good X are:

(i) $D_x = f(P_x, Y, T)$; and

(ii) $D_x = 2000 - 10P_x$.

Here, D_x denotes quantity of good demanded, P_x denotes the price of good Y represents income level of the consumer and T is a measure of his taste: and preferences.

2. Demand Schedule:

A demand schedule is a tabular form of describing the shifts in quantity demanded of a good in response to shifts in its price per unit, while all non-price determining variables are remains unchanged. A demand schedule has two columns, namely (i) price per unit of the good (P_x), and. (ii) quantity demanded per period (D_x). The demand schedule is a set of pairs of values of values of P_x and D_x . The first column records the hypothetical values of P_x , and the second column records the corresponding quantity (D_x) which the consumer would decide to buy if faced by that price.

2) Individual demand and market demand:

Ans: Individual Demand Curve

The individual demand curve represents the quantity of a good that a consumer will buy at a given price, holding all else constant. For example, consumer A might buy zero oranges at \$1 each, one orange at 75 cents each, and two at 50 cents each, while consumer B might buy one at \$1, two at 75 cents, and three at 50 cents. When charted on a grid with price on the vertical axis and quantity purchased on the horizontal axis, these points form the individual demand curves for consumers A and B.

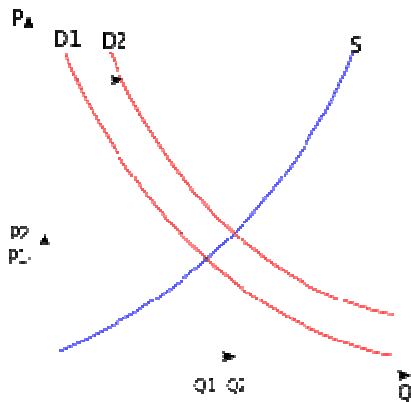
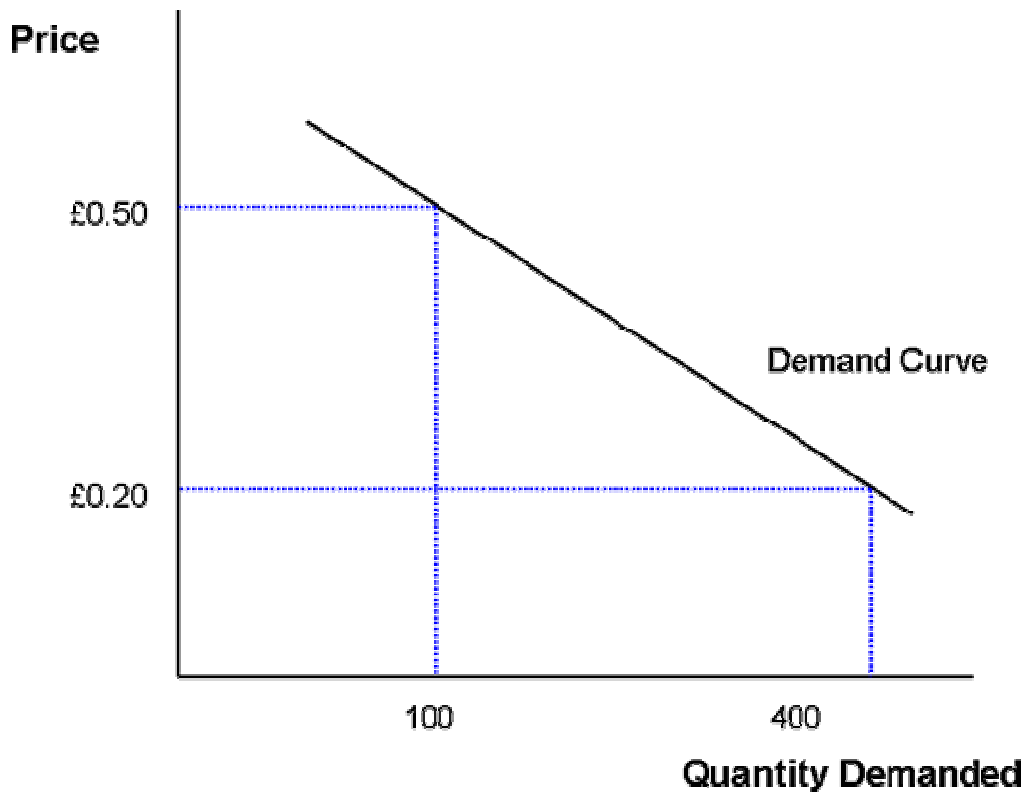
Market Demand Curve

The market demand curve is the sum of all the individual demand curves in the market. If the entire market consisted of only the two consumers mentioned above, the total demand for oranges at a price of \$1 would be one orange, because A would buy none and B would buy one. At a price 50 cents, the market demand would be five oranges, summing A's two oranges and B's three. For a single good, adding all the individual demand curves of the millions of consumers in the market makes the total market demand curve.

3) Demand curve

Ans: In **economics**, the **demand curve** is the **graph** depicting the relationship between the price of a certain **commodity** and the amount of it that consumers are willing and able to purchase at that given price. It is a graphic representation of a demand schedule.^[1] The demand curve for all consumers together follows from the demand curve of every individual consumer: the individual demands at each price are added together.

Demand curves are used to estimate behaviours in **competitive markets**, and are often combined with **supply curves** to estimate the **equilibrium price** (the price at which sellers together are willing to sell the same amount as buyers together are willing to buy, also known as **market clearing price**) and the equilibrium quantity (the amount of that good or service that will be produced and bought without surplus/excess supply or shortage/excess demand) of that market.^[2] In a monopolistic market, the demand curve facing the monopolist is simply the market demand curve.



❖ Ques. 4 Explain the statistical method of demand forecasting

Ans:

Complex Statistical Methods

- 1) **Time series analysis or trend method:** Under this method, the time series data on the under forecast are used to fit a trend line or curve either graphically or through statistical method of Least Squares. The trend line is worked out by fitting a trend equation to time series data with the aid of an estimation method. The trend equation could take either a linear or any kind of non-linear form. The trend method outlined above often yields a dependable forecast

- The advantage in this method is that it does not require the formal knowledge of economic theory and the market, it only needs the time series data. The only limitation in this method is that it assumes that the past is repeated in future. Also, it is an appropriate method for long-run forecasts, but inappropriate for short-run forecasts. Sometimes the time series analysis may not reveal a significant trend of any kind. In that case, the moving average method or exponentially weighted moving average method is used to smoothen the series

.2) Barometric techniques or lead or lag methods:

- This consists in discovering a set of series of some variables which exhibit a close association in their movement over a period or time.
- For example, it shows the movement of agricultural income (AY series) and the sale of tractors (ST series). The movement of AY is similar to that of ST, but the movement in ST takes place after a year's time lag compared to the movement in AY. Thus if one knows the direction of the movement in agriculture income (AY), one can predict the direction of movement of tractors' sale (ST) for the next year. Thus agricultural income (AY) may be used as a barometer (a leading indicator) to help the short-term forecast for the sale of tractors.
- Generally, this barometric method has been used in some of the developed countries for predicting business cycles situation. For this purpose, some countries construct what are known as 'diffusion indices' by combining the movement of a number of leading series in the economy so that turning points in business activity could be discovered well in advance. Some of the limitations of this method may be noted however. The leading indicator method does not tell you anything about the magnitude of the change that can be expected in the lagging series, but only the direction of change. Also, the lead period itself may change overtime. Through our estimation we may find out the best-fitted lag period on the past data, but the same may not be true for the future. Finally, it may not be always possible to find out the leading, lagging or coincident indicators of the variable for which a demand forecast is being attempted.

3) Simultaneous equations Methods

- Here is a very sophisticated method of forecasting. It is also known as the 'complete system approach' or 'econometric model building'. In your earlier units, we have made reference to such econometric models. Presently we do not intend to get into the details of this method because it is a subject by itself. Moreover, this method is normally used in macro-level forecasting for the economy as a whole; in this course, our focus is limited to micro elements only. Of course, you, as corporate managers, should know the basic elements in such an approach. The method is indeed very complicated. However, in the days of computer, when package programmes are available, this method can be used easily to derive meaningful forecasts. The principle advantage in this method is that the forecaster needs to estimate the future values of only the exogenous variables unlike the regression method where he has to predict the future values of all, endogenous and exogenous variables affecting the variable under forecast. The values of exogenous variables are easier to predict than those of the endogenous variables. However, such econometric models have limitations, similar to that of regression method.
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- ❖ Ques. 5 How will you define economics of scale ? what are the sources of internal and external economies of scale.

Ans: Definition of 'Economies Of Scale'

The cost advantage that arises with increased output of a product. Economies of scale arise because of the inverse relationship between the quantity produced and per-unit fixed costs; i.e. the greater the quantity of a good produced, the lower the per-unit fixed cost because these costs are shared over a larger number of goods. Economies of scale may also reduce variable costs per unit because of operational efficiencies and synergies. Economies of scale can be classified into two main types: *Internal* – arising from within the company; and *External* – arising from extraneous factors such as industry size

“Economies of scale” is a simple concept that can be demonstrated through an example. Assume you are a small business owner and are considering printing a marketing brochure. The printer quotes a price of \$5,000 for 500 brochures, and \$10,000 for 2,500 copies. While 500 brochures will cost you \$10 per brochure, 2,500 will only cost you \$4 per brochure. In this case, the printer is passing on part of the cost advantage of printing a larger number of brochures to you. This cost advantage arises because the printer has the same initial set-up cost regardless of whether the number of brochures printed is 500 or 2,500. Once these costs are covered, there is only a marginal extra cost for printing each additional brochure.

Economies of scale can arise in several areas within a large enterprise. While the benefits of this concept in areas such as production and purchasing are obvious, economies of scale can also impact areas like finance. For example, the largest companies often have a lower cost of capital than small firms because they can borrow at lower interest rates. As a result, economies of scale are often cited as a major rationale when two companies announce a merger or takeover.

However, there is a finite upper limit to how large an organization can grow to achieve economies of scale. After reaching a certain size, it becomes increasingly expensive to manage a gigantic organization for a number of reasons, including its complexity, bureaucratic nature and operating inefficiencies. This undesirable phenomenon is referred to as "diseconomies of scale".

Internal economics:

internal economies are built into the shape of the long-run average cost curve (scale curve), because they are internal to the firm, and accrue to it from its own action, as it expands the level of its output, i.e. it increases its plant size. In other words, they are independent of the changes in size of the rest of the firms in the industry. As is obvious, these occur only in the long-run. External economies arise outside the firm.

These exist if the expansion in scale of the whole industry or group of firms results in a fall in costs of each individual firm. These are independent of the actions of the firm, i.e. they are external to it. They may also arise

from improvement of the environment in which the firm operates.

These are not built into the shape of the cost curves of the firm. Their effect is to reduce the cost, say by a reduction in the prices of the factors of production employed by the firm, or by reduction in the amount of inputs per unit of output. This effect is shown by a downward shift of the cost curve, both the short-run and the long-run.

Let us briefly look at the classification and sources of internal economies of scale:

Internal economies may be achieved within a particular plant, or they may also arise from an increase in the number of plants, whether the firm continues to produce the same product in the new plant, or it starts producing other products. Thus, internal economies are either single-plant (intra-plant), or they are multi-plant (inter-plant). Here, we shall only analyze single-point internal economies. Let us look at the various types of such economies and their causes.

To begin with, economies of scale are either real economies or pecuniary economies. Let us first look at the real economies that are in non-monetary terms, and arise as a result of all real benefits to a firm, and pecuniary economies are in monetary terms. Depending upon the source of real benefit, real economies are further classified as discussed below:

Production Economies: these refer to real benefits that arise because of production activities. There may be various reasons for this: (a) they may arise from labour because of specialization and skills, time-saving, introduction of tools and techniques facilitating work, and because of cumulative effect of long-period experience of workers. Such production economies are termed as labour economies; (b) they may arise from 'fixed capital', i.e. all types of machinery and other equipment because of specialization of capital and indivisibilities of the modern industrial techniques of production, set-up costs (which are involved when multi-purpose machinery is deployed), initial fixed costs, technical-geometric relationships between particular equipment and the corresponding inputs, and because of the existing reserve-capacity in cases of unforeseen breakdown of machinery. Such production economies are termed as technical-capital economies; (c) they may arise from inventories of spare parts, raw materials, and finished product that are maintained by firms to meet random changes. Such production economies are called inventory economies.

Selling or Marketing Economies: These are real economies which are related to the distribution of the product. These may be due to advertisement, large-scale sales promotion, exclusive agreements with distributors, and change in the model or style of the product. It is seen that the per unit cost in respect of each of these increases by less than proportionately with output, at least up to a certain scale.

Managerial Economies: These are real economies which are related with management, and since the management is connected with both production and marketing, these are partly production and partly market-oriented. They may arise because of specific expertise of management personnel, resulting from decentralization of decision-making, specially in large firms, and also because of modernization and mechanization of managerial functions. Whether managerial costs continue to decline at large scales of output is a question which

is highly disputed in managerial economics.

Transport and Storage Economies: These are real economies which are once again partly production-oriented and partly marketing-oriented. They arise in the process of transportation and storing of both raw materials or inputs, and finished products. Storage costs fall with size, but there is nothing definite about transport costs. Much depends on the nature of transport facilities available to the firm, and the share of transport costs in the total cost.

Let us now look at the pecuniary economies. These may arise to the firm in the large operations because of a number of factors:

- Lower (discounted) prices as a result of bulk-buying of raw materials and intermediate products;
- Lower rates at which the credit is available to the firm, or lower cost of external finance;
- Lower advertisement/publicity cost;
- Lower transport costs;
- Lower wages etc. due to the monopolistic tendencies, or due to the social recognition enjoyed by employees for working with large firms;

As we have said earlier, all such internal economies of scale, real and pecuniary are built into the long-run average cost curve of the firm. It is for this reason that this curve is also called the scale curve. In other words, the long-run average cost curve is an aggregation of the various costs a firm has to incur in the process of production.

There is a good amount of controversy with respect to the shape of the long-run average cost curve. Majority of the empirical cost studies, however, disapprove of the traditional U-shaped costs, and support the view that the long-run cost is L-shaped.

External economies of scale:

External economies of scale refer to the entire industry that a company is in. This refers to how many companies are in competition, the similarity of products, and the pricing range of companies. When there are too little or too many companies in competition, the market equilibrium is not the most efficient outcome.

External economies of scale occur outside of a firm but within an industry. For example investment in a better transportation network servicing an industry will result in a decrease in costs for a company working within that industry.

Another example is the development of research and development facilities in local universities that several businesses in an area can benefit from. Likewise, the relocation of component suppliers and other support businesses close to the centre of manufacturing are also an external cost saving.

Agglomeration economies may also result from the clustering of similar businesses in a distinct geographical location e.g. software businesses in Silicon Valley or investment banks in the City of London.

Formula One and External Economies of Scale

Britain has a history of providing a base for some of the most successful teams in Formula One. McLaren are based in Woking but Renault, Honda, Williams and Red Bull are all clustered in the east Midlands. Partly this is an accident of history - namely the availability of disused airfields after the war.

But the cluster of F1 teams is also a good example of the external economies of scale that can be generated when a group of producers develop and expand in a relatively small geographical area.

Most of the teams currently racing are based in the UK, along with their R&D operations. A whole network of industries, such as component suppliers, engineering and design firms, have sprung up in Britain, mostly in central England, to serve the sport both here and abroad. F1 also helps to support a far larger motorsport industry in the UK, for example rally car racing and all its associated industries.

Ques. 6 Show how the firms make equilibrium under monopolistic situation?

Ans: *Monopolistic competition* is a market structure in which there are many firms selling differentiated products. Many sellers of the product, but the product of each seller is a bit different from the product of other sellers. This product differentiation manifest itself in trade mark, name of the brand etc.

Features of monopolistic competition

1. Product differentiation
2. A large number of firms
3. Freedom of entry & exit
4. Sellers have some influence over the price
5. Product variation
6. Heavy expenditure on advertisement & other selling costs.
7. Large Number of Sellers
8. Concept of Group
9. Two Dimensional Competition
10. Absence of Interdependence
11. Selling Cost
12. Falling Demand Curve

Price-Output Determination (Equilibrium) Under Monopolistic Competition

Under monopolistic competition, different firms produce different varieties of the product. Therefore, different prices for them will be determined in the market depending upon their respective demand and cost conditions. Each firm under monopolistic competition seeks to achieve equilibrium or profit maximising position as regards :

Price and output

Product adjustment and

Adjustment of selling costs. In other words, the producer under monopolistic competition must make optimal adjustments not only in the price charged and as regards the quantity of output sold but also in the design of the product and the way in which he promotes the sales.

While monopolistic competition is characteristically closer to perfect competition, it is characteristically closer to monopoly in regard to pricing and output determination. Like a monopolist, a monopolistic competitor forces a downward sloping demand curve having a smaller slope. This demand curve is the product of

(a) **Short Run Equilibrium:**

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- (b) the AR curve in the long run will be more elastic, since a large number of substitutes will be available in the long run. Therefore, in the long run, equilibrium is established when firms are earning only normal profits. Now profits are normal only when $AR = AC$. It is further illustrate with the diagram:

Long Run Equilibrium:

Under monopolistic competition, the supernormal profit in the long run is disappeared as new firms are entered into the industry. As the new firms are entered into the industry, the demand curve or AR curve will shift to the left, and therefore, the supernormal profit will be competed away and the firms will be earning normal profits. If in the short run firms are suffering from losses, then in the long run some firms will leave the industry so remaining firms are earning normal profits. (explain with graph)

Ques. No 7 What is transfer pricing ? how is transfer price determined?

Ans. **Transfer Pricing**

Large size firms often divide their production into different product divisions or their subsidiaries. Growing firms add new divisions or departments to the existing ones. The firms then transfer some of their activities to other divisions. The goods and services produced by the new divisions are used by the parent organization. In other words, the parent division buys the product of its subsidiaries. Such firms face the problem of determining an appropriate price for the product transferred from one division or subsidiary to the parent body. This problem becomes much more difficult when each division has a separate profit function to maximize. Pricing of intra-firm 'transfer product' is referred to as 'transfer pricing'. One of the most systematic treatments of the transfer pricing technique has been provided by Hirshleifer. We will discuss here briefly his technique of transfer pricing.

Let us suppose that a refrigeration company established a decade ago used to produce and sell refrigerators fitted with compressors bought from a compressor manufacturing company. Now the refrigeration company decides to set up its own subsidiary to manufacture compressors. Let us also assume:

- (i) both parent and subsidiary companies have their own profit functions to maximize and
- (ii) the refrigeration company has the option of using all the compressors produced by its subsidiary and/or to sell the compressors in a competitive market and its demand is given by a straight horizontal line.

Given the model, transfer pricing is discussed under two conditions.

- (i) The parent company uses the entire output of its subsidiary and there is no external market for the compressors and
- (ii) There does exist a competitive market for the compressor and refrigeration company sells also in the

open market.

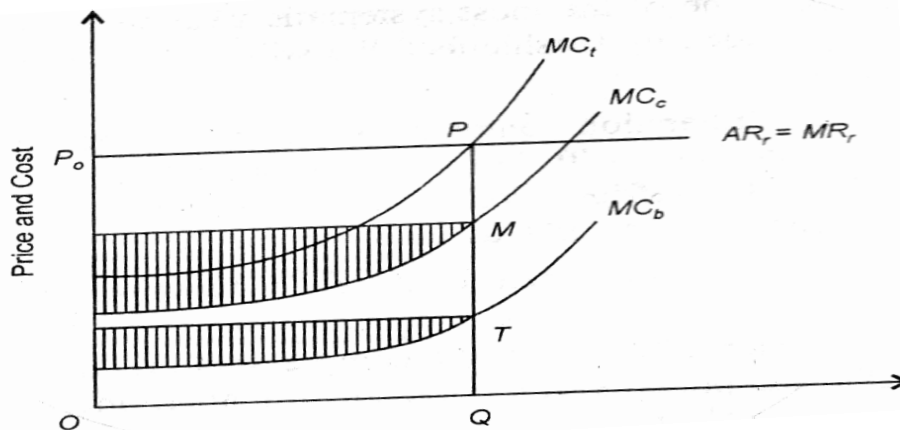
Let us begin our analysis of transfer pricing model by assuming that there is no external market for the compressors. We will later drop this assumption and assume that there is an external market for the compressors and discuss the technique of transfer pricing under both the alternative conditions.

Transfer Pricing Without External Market

When refrigeration company uses its entire compressor output, it has to set an appropriate price for the compressors so that the profit of its subsidiary too is maximum. To deal with the 'transfer pricing' problem, let us first look into the pricing and output determination of the final product, i.e., refrigerators. Since the refrigeration company sells its refrigerators in a competitive market, the demand for its product is given by a straight horizontal line as shown by the line $AR_r = MR_r$ in picture 01.

The marginal cost of intermediate good, i.e., compressor, is shown by MC_c curve and that of the refrigerator body by MC_b . The MC_c and MC_b added vertically give the combined marginal cost curve, the MC_t . At output OQ , for example, $TQ + MQ = PQ$. The MC_t intersects line $AR_r = MR_r$ at point P . An ordinate drawn from point P down to the horizontal axis determines the most profitable outputs of refrigerator bodies and compressors, each at OQ . Thus, the output of both refrigerator bodies and compressors is simultaneously determined. Since at OQ level of output, the firm's

$MC_t = MR_r$, the refrigerator company maximizes its profits from the final product, the refrigerators.



Picture:01. Price determination of the final product (refrigerators)

Now, let us find the price of the compressors. The question that arises is: what should be the price of the compressors so that the compressor manufacturing division too maximizes its profit? The answer to this question can be obtained by applying the profit maximization rule, profit is maximum where $MC = MR$. This rule requires equalizing MC and MR in respect of compressors. The marginal cost curve for the compressors is given by MC_c in picture 01.

The firm therefore has to obtain the marginal revenue for its compressors. The marginal revenue of the compressors (MR_c) can be obtained by subtracting the non-compressor marginal cost of the final good from the MR_r . Thus,

$$MR_c = MR_r - (MC_t - MC_c)$$

For example, in pic:01, at output OQ , $MR_c = PQ$, $MC_t = PQ$, and $MC_c = MQ$.

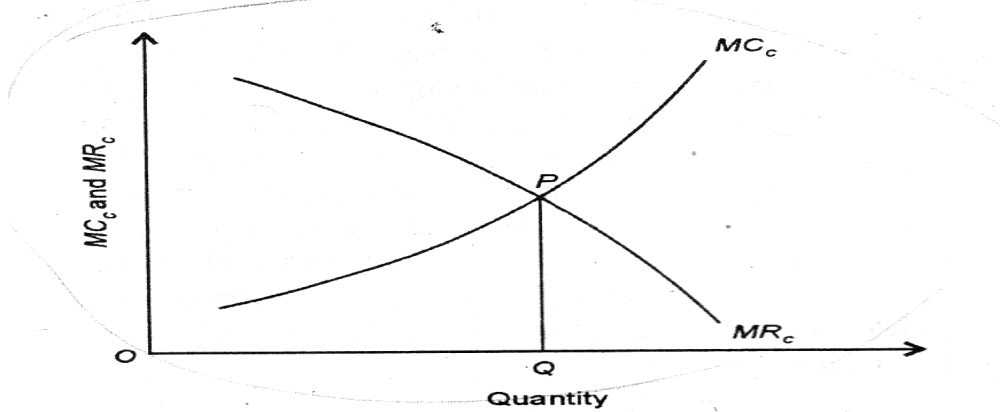
$$MR_c = PQ - (PQ - MQ)$$

$$PQ - PM = MQ$$

or, since in pic.:01, $PQ - MQ = PM$, and $PM = TQ$, therefore,
 $MR_c = PQ - TQ = PT$ and $PT = MQ$

We may recall that, when price is constant, $AR_r = MR_r$, i.e., MR_r is constant as shown in pic.:01.

In contrast, however, MC_c is a rising function. Thus, $MR_r - MC_c$ will be a decreasing function. Notice the vertical distance between $AR_r = MR_r$ line, and MC_c curve is decreasing as shown in pic.:01. When MR_c (which equals $MR_r - MC_c$) is obtained for different levels of output and graphed, it yields a curve like MR_c curve shown in pic.:02. The MC_c curve (which is the same as MC_c curve in pic.:01) intersects the MR_c at point P. At point P, $MR_c = MC_c$ and output is OQ . Thus, the price of compressors is determined at PQ in pic.:02. This price enables the compressor division to maximize its own profit.

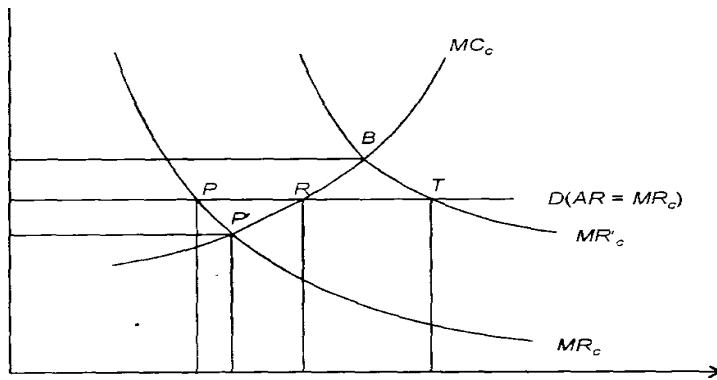


Pic.:02. Determination of Transfer Price.

Transfer Pricing with External Competitive Market

We have discussed above the transfer pricing under the assumption that there is no external market for the compressors. It implies that the refrigeration company was the sole purchaser of its own compressors and that the compressor division had no external market for its product. Let us now discuss the transfer pricing technique assuming that there is an external market for the compressors. The existence of the external market implies that the compressor division has the opportunity to sell its surplus production to other buyers and the refrigeration company can buy compressors from other sellers if the compressor division fails to meet its total demand. For simplicity sake, let us assume also that the external market is perfectly competitive. Determination of transfer price under these conditions is a little more complicated task.

The method of transfer pricing with external market is illustrated in Pic.:03. Since the compressor market is perfectly competitive, the demand for compressors is given by a straight horizontal line as shown by the line P_2D . In that case $AR = MR$. The marginal cost curve of the compressors is shown by MC_c . The MR_c curve shows the marginal net revenue from the compressors, (Pic.:03). Note that in the absence of the external market, the transfer price of compressors would have been fixed at $OP_1 = P'Q_2$, i.e., the price where $MR_c = MC_c$. At this price the parent company would have bought compressors from its subsidiary only. But, since compressors are to be produced and sold under competitive conditions, the effective marginal cost of the compressor to the refrigeration company is the market price of the compressor, i.e., OP_2 . Besides, the price OP_2 , is also the potential MR for the compressor division. Therefore, in order to maximize its profit, the firm sets compressor's price at point P where $MR_c > MC_c$. Thus, the transfer price of compressor will be fixed at PQ_1 and the refrigeration company would buy OQ_1 compressors from the compressor division.



Pic.:03 Determination of Transfer Price with External Market

The total output of compressors is determined at a level where MC_c , intersects the demand line, $D(AR = MR)$. That is, profit maximizing level of output is determined by point R . At point R , the total output of compressors is OQ_3 . Of this, OQ_1 is bought by the refrigeration company itself and the remaining output, $Q_1 Q_3$ is sold in the external market, both at price OP_2 . At this level of output and price, the compressor division maximizes its profit.

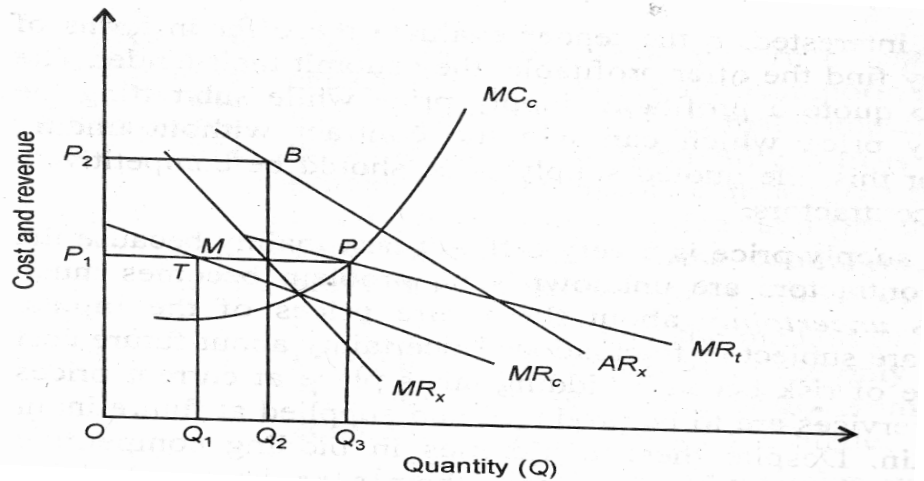
Shift in MR, and Transfer Price

Let us now consider how transfer price is determined when MR_c , shifts upward to the right. The MR_c , may shift upward because of an increase in demand causing an upward shift in $AR = MR$. Let the MR_c , in Pic.:03 shift to MR'_c , which intersects with MC_c , at point B . In the absence of an external market, the refrigeration company would have set transfer price of compressors at OP_3 —a price higher than the free market price OP_2 . But, since there is an external market in which a lower price is given at OP_2 , the transfer price cannot exceed the market price or else the refrigeration company would not be in a position to maximize its profit. Nor can the transfer price be less than the market price, otherwise the compressor division would not be able to maximize its profit. Thus, if there is an external market in which market price of an intermediary product is given, then the problem is to determine the quantity to be produced by the subsidiary and the quantity to be purchased from the external market. Pic.:03 shows that after the shift in MR_c , curve to MR'_c , the demand for compressors by the refrigeration company increases to OQ_4 where $AR = MR = MR'_c$. But the subsidiary company cannot produce OQ_4 units of compressors, given its MC_c , and the market price. It will, therefore, produce only OQ_3 number of compressors, which equalizes MC_c , with MR at point R . Given the market price, OQ_3 is the most profitable output of compressors. Therefore, the difference between the total demand and the total internal supply from the subsidiary, i.e., $OQ_4 - OQ_3 = Q_3 Q_4$, will be bought in the external market, at price $OP_2 = TQ_4$. Thus, the refrigeration company will buy OQ_3 compressors from its compressor division and buy $Q_3 Q_4$ in the external market.

Transfer Pricing Under Imperfect External Market

When the refrigerator market is imperfect, the compressor division faces a demand curve with a negative slope in the external market, instead of a straight horizontal demand line. The downward sloping demand curve makes transfer pricing a much more complicated task. To illustrate the transfer pricing technique under imperfect market conditions in the external market, let us suppose (i) that the average and marginal revenue curves for the compressors are given by AR_x and MR_x , respectively, in Pic.:04 and (ii) that the 'marginal net revenue' from the internal use of compressors and the marginal cost of producing compressors are represented by MR_c and MC_c respectively. With a view to maximizing the overall profit, the refrigeration company will determine the output of compressors where $MC_c = MR_c + MR_x$, i.e., where marginal cost of compressors equals the composite marginal

revenue. The composite marginal revenue is obtained through horizontal summation of the MR_c , and MR_x curves as shown by MR_t in Pic.:04



Pic.:02 Determination of Transfer Price

As shown in Pic.:04, MC_c intersects MR_t at point P which determines the profit maximizing output of compressors at OQ_3 . The compressor division can maximize its profit by dividing its output between the refrigeration company and the external market so as to equalize its MC and MR in both the markets—internal and external. If a line (PP_1) is drawn from point P parallel to the horizontal axis to the vertical axis, it intersects MR_x at point M and MR_c at point T . The points of intersection (T and M) determine the share of refrigeration company and the external market in the total output OQ_3 . At point M , $MC_c = MR_x$ and at point T , $MC_c = MR_c$. Thus, the refrigeration company, the parent body, will buy OQ_1 for internal use and sell OQ_2 in the open market. Note that $OQ_1 + OQ_2 = OQ_3$. The profit maximizing price in the external market is $OP_2 (= BQ_2)$ and the profit maximizing transfer price is set at OP_1 . With these prices and output, both refrigeration company and compressor division maximize their respective profits.

Ques. 8 Describe the pure monetary theory and overinvestment theory of business cycle?

MEANING

The term business cycle refers to a phenomenon that a cyclical economic expansion and economic contraction cycle in the economy. Business cycle means the economic incident or incidents which occur regularly at a certain time and causes alternative changes in prices and the situation of employment.

The **business cycle** is the periodic but irregular up-and-down movements in economic activity, measured by fluctuations in real GDP and other macroeconomic variables. If you're looking for information on how various economic indicators and their relationship to the business cycle, please see A Beginner's Guide to Economic Indicators. A business cycle is not a regular, predictable, or repeating phenomenon like the swing of the pendulum of a clock. Its timing is random and, to a large degree, unpredictable. A business cycle is identified as a sequence of four phases:

- Is like a roller coaster it has it's ups and downs.
- These ups and downs are called Business Cycle.
- NATURE OF BUSINESS CYCLE
- The business cycle refers to the cyclical variation in economic activity is empirically captured in terms of the rate of growth of GDP, per capita income, level of employment, inflation rate and interest rates referred to as macro-economic variables are not constant, but fluctuation over time. The state of

prosperity and the state of depression that occur in the trade cycle are of the cumulative nature. What is shown by this is that, all states will cumulates such state which will direct this towards the opposite direction. Thought the states of prosperity and depression are not definite, both the states can continue being indefinite. As a result of this, one directs the other.

- **1. PERIODICITY**

- The pattern of contraction–trough–expansion–peak occurs over and over again. Business cycles are not periodic: Business cycles do not occur at regular predictable intervals. Some of the economists have given the views that there is regularity or periodicity in the fluctuations of the trade cycle or the state of prosperity and the state of depression occurs and completes in a fixed period. According to the economist Hanson, the general time period of the trade cycle is from 7 years to 10 years. In reality, business cycles are recurrent but not periodic. Therefore, span of trade cycle need to be identical or the same.

- **2. SYCHRONIZATION**

- Business cycles are fluctuations in aggregate economic activity, not fluctuations in a specific economic variable. Significant changes in total output, income, employment, and trade. The state of prosperity and the state of depression that occur in the trade cycle are of the cumulative nature. What is shown by this is that, all states will cumulates such state which will direct this towards the opposite direction. Thought the states of prosperity and depression are not definite, both the states can continue being indefinite. As a result of this, one directs the other.

- **3. CYCLICAL**

- The nature of trade cycle is generally cyclical. That is, after the creation of trade cycle the ups and downs fluctuations will be of recurrent and repetitive pattern. As a result, in the economy depression occurs after the state of prosperity after the state of depression continuously and cyclically.

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- **4. MOVEMENT IN ECONOMIC ACTIVITY**

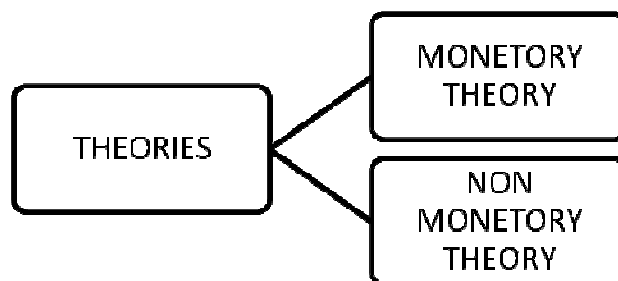
- A trade cycle is a wave-like movement in economic activity showing an upward trend and a downward trend in the economy. Movement of the trade cycle is just like the sea-waves. In capitalistic economy depression after prosperity and prosperity after depression occur in wave-like movement. Among these the movement of wave sometimes is excessively powerful and sometimes is less powerful. But whatever be the movement of the wave, the movement of one wave will be similar to the movement of the other wave.

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- **. DYNAMIC**

Business cycles cause changes in all sectors of the economy. Fluctuations occur not only in production and income but also in other variables like employment, investment, consumption, rate of interest, price level, etc

THEORIES OF BUSINESS CYCLE



MONETARY THEORY

Important monetary theories are as follows:

1. PURE MONETARY THEORY OF PROF. HAWTRAY:-

Prof. Hawtray was of the opinion that trade-cycles are purely a monetary problem. He was of the view that the situation of money inflation and money deflation cause the fluctuations in business activities.

Prof. Hawtray propounded that a change in the quantity of money causes trade-cycles. When quantity of money increases (either or due to the issue of fresh currency or due to the increase in supply of money by bank credit or to increase in velocity of money), phase of prosperity starts because due to an increase in the quantity of money, consumers get more money to spend. Their purchasing power increases and as a result, prices of goods and services start to increase.

2. OVER INVESTMENT THEORY:-

This theory was propounded by Prof. Hayek. Prof. Hayek was of the opinion that trade-cycle occurs due to difference between natural rate of interest and actual rate of interest. Difference between these two rates of interest causes significant increase or decrease in the prices of goods and services. This theory is based upon the assumption that savings and investments are always equal. It can be possible only when the capital is created and generated through savings only.

Ques. 9 Write Short Notes:

I Importance of inflation: Inflation is an upward movement in price level. In ordinary language, inflation means rising prices. Due to rise in price purchasing power of money declines

When the prices of most goods and services are rising over time, the economy is said to be experiencing inflation. The word "**inflation**" refers to a general rise in prices measured against a standard level of purchasing power

Inflation refers to a continuous rise in general price level which reduces the value of money or purchasing power over a period of time.

It is important to note that increase in supply of money does not always mean inflation. When money supply increases, it partly results in increase of output (GNP) and partly increases in prices. Thus, inflation is generally associated with an abnormal increase in quantity of money resulting in abnormal rise in prices.

Definition of Inflation

According to Crothers,

"Inflation is a state in which the value of money is falling i.e. the prices are rising."

According to Coulbourn,

"Inflation is too much of money chasing too few goods."

IMPORTANCE OF INFLATION

- **NEGATIVE IMPORTANCE**

1. **ECONOMIC GROWTH** – Since 1984, inflation control has become the unquestioned mantra of economic policymakers worldwide. Even a whisper of "the I-word" by Alan Greenspan in the financial press creates havoc in global stock markets. Based in part on the 1973 to 1984 period of macroeconomic distress experienced by OECD countries, when inflation reached an average rate of 13 percent, monetary policymakers have assumed that faster sustainable growth can only occur in a climate where the inflation monster is tamed.

In the long terms, inflation will create an unfavorable economic environment of low business confidence and general consumer pessimism. Business become less likely to undertake capital investment and it becomes more likely that economic growth is stagnated by sluggish levels of economic demand and expenditure.

For example, reducing inflation by one percentage point when the rate is 20 percent may increase growth by 0.5 percent. But, at a 5 percent inflation rate, output increases may be 1 percent or higher. It is therefore more costly for a low inflation country to concede an additional point of inflation than it is for a country with a higher starting rate.

1. **INCOME INEQUALITY** - Inflation can also cause higher levels of inequality in income distribution, because lower level earners need to spend higher proportion of income to purchase goods and services, leading to low income households having reduced level of discretionary measures

Fears of inflation have been misplaced, since there is little evidence that without wage resistance, which depends on the bargaining position of workers, there could be systematic inflation pressures. Last time that workers tried to push back and increase wages was in the 1970s, in which labor's stronger position, and employers' resistance to workers' demands, resulted in high levels of industrial conflict.

That's is why higher commodity prices in the 1970s, including the oil shocks, led to high inflation back then, but has had a marginal impact this time around. This also suggests that the low inflationary pressures in recent times – Bernanke's Great Moderation – have less to do with Central Bank 'credible' policies than with the attack on unions and workers' rights.

EXTERNAL STABILITY – Inflation contributes to business cost of production (COP), making exports less competitive because they become relatively more expensive. This negatively impacts upon balance of goods and services, and thus causes COD to deteriorate.

For example, in the late 1980s Australia experienced a significant increase in the current account deficit. At that time, monetary policy was tightened in an effort to reduce demand for imports. The impact of this approach was two-fold. First, demand for domestic products fell also. And secondly, with the increase in interest rates the AUD also appreciated. The increasing AUD made imports more affordable, and so demand for imports actually *increased*, the opposite of that which was intended. As a result of this, Australia experienced "the recession that we had to have".

Since that time, the approach to external stability has been significantly refined. Monetary policy is now used primarily to target inflation – a domestic goal. However, in so doing the RBA is also ensuring that the international competitiveness of the Australian economy is being maintained in the medium term.

RESOURCE ALLOCATION - Inflation represents inefficiency in resource allocation because it adds to COP, and reduces the stability of business to invest in capital works which will increase aggregate supply and deficiency in long run.

FULL EMPLOYMENT – Due to dampened levels of demand production level and employment should fall, because business do not want to produce goods and services which will not be purchased by customer.

Full **employment** implies that the available factor inputs including labor and capital resources are being fully utilized. It does not mean zero unemployment since there will always be some people who are jobless at the prevailing wage rates - **frictional and structural unemployment** are an inevitable feature of a modern economic system. Conventional view is that full-employment can lead to inflationary pressures within an economy as high demand for goods and services leads to higher demand-pull inflation. And increasing demand for factor resources drives their prices up too - leading to cost-push inflation.

That said if prices are rising at a faster rate, the obvious **short-term policy responses** are:

- (1) A **tightening of monetary policy** via higher interest rates or measures designed to control the supply of money and credit (quantitative tightening!)
- (2) A **deflationary fiscal policy** i.e. through higher direct taxes or an attempt to control government spending.

LESS COMPETITIVE – If one country has a much higher rate of inflation than others for a considerable period of time, this will make its exports less price competitive in world markets. Eventually this may show through in reduced export orders, lower profits and fewer jobs, and also in a worsening of a country's trade balance. A fall in exports can trigger negative multiplier and accelerator effects on national income and employment. If a country has a higher rate of inflation than that of its trading partners, then this will make its exports less competitive, and will make imports from lower-inflation trading partners more attractive. This may lead to fewer export revenues and greater expenditure on imports, thus worsening the trade balance.

2 Cost Output Relationship

Introduction of cost.

The term 'cost' means different things to different persons. For business executives, the use of cost figures is very important in the determination of profit. For the managerial economist, the cost analysis has a specific purpose namely to solve managerial problem. This call for an economic analysis of the data about what costs are appropriate for different decisions.

Cost is the expense incurred in producing a commodity. The cost of production is the most important force governing the supply of a product. The cost of producing a unit of product is determined by the price of product. The cost of producing a unit of product is determined by the price of factor inputs used in the production of a product. If the prices of the factor. Inputs are high; the cost of production also will be high. While determining. The profit, the cost is compared with the revenue depends upon the price of the product of the market. The business manager cannot control the price prevailing in the market, but he can control the cost by restricting the output.

Costs in the short run.

Introduction. Short run is defined as a period in which the firm can vary its output only the amount of variable factors such as labors and raw material. In the short, the qualities of fixed factors like capital equipment, building, and top management cannot be varied. In other words, in the short run, the firm cannot build a new plant or abandon an old plant. If the firm wants to increase production, it can do so only by increasing labors and raw material inputs. It has to overwork the existing capital equipments. It cannot increase output in the short run by enlarging the size of the existing plant or building a new plant of a larger size. Thus, short run is a period of time in which only quantities of the variable factors can be increased while fixed factor constant.

Total cost. The amount spent on the production of different level of a good is called total cost. According to Dooley "total cost of production is the sum of all expenditure incurred in producing a given volume of output". In the short period, total costs are of two types;

1). **Total fixed cost (TFC)**

2). **Total variable cost (TVC)**

$$TC = TFC + TVC$$

Here, TC = Total cost

TFC = Total Fixed Cost

TVC = Total Variable Cost

1). **Fixed cost.** In the short period, costs of fixed factors are called fixed cost. "Fixed costs are costs which do not change with changes in the quantity of output." Production may be maximum or of zero unit, but fixed costs remain the same. These costs are supplementary costs or indirect costs. Fixed cost includes, rent of building, interest on capital, license fees etc.

Antol murad define, "fixed costs are those cost, which do not change with the change in the quantity of output".

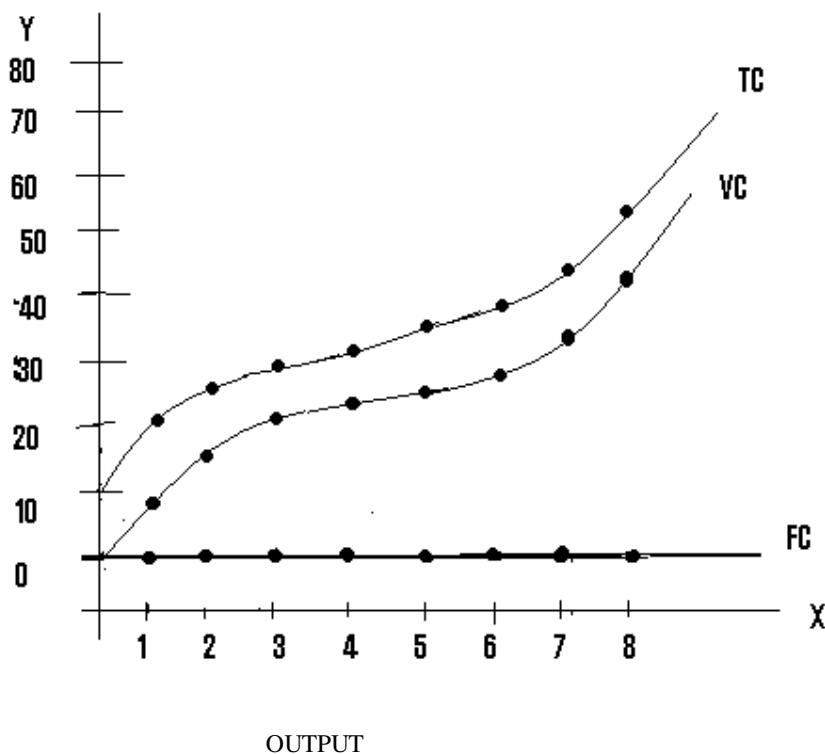
Left witch, rightly opines, "Fixed cost are those cost which are constant with the change in the quantity".

Quantity of output. When output is zero, fixed cost is rupees 10. When output increase to 2 units or 4 units. Fixed cost remains 10. In the figure, the fixed cost curve is a horizontal curve or is a parallel curve to ox axis, since the cost is constant at Rs 10.

2). **Variable cost.** Variable costs are those costs, which are incurred on the use of variable factors of the production. Variable cost varies with level of output. In other words, costs undergo a change with the change in the output. As output falls these costs also fall and if output rises these costs also rise. These are also called prime cost or direct costs. Variable cost includes expenses on raw material, wages on labour, etc.

In the words of Dooley, “variable cost is one which varies as the level of output varies.

Showing total, variable and fixed cost curve



Relationship between total, fixed and variable costs can be explained with the help of the schedule.

A. Total cost. It can be aggregating fixed cost and variable costs. With the increase in output, total cost also increase in output, total cost also increases. When the output is zero, total costs are Rs 10, because fixed costs are Rs. 10 although variable costs are zero. When output increases to 4 units, total costs go unto Rs. 70. As seen in the diagram. As seen in the diagram, fixed cost line represents fixed costs. Variable cost is the variable costs curve and total cost is the total cost curve. The latter represents the aggregate of fixed cost and variable cost

curves. Total cost curve begins from the starting point of fixed cost curve. At the point o output is zero, but fixed cost is Rs 10, so total cost is also Rs 10. Difference between total cost and variable cost is uniform and it is equivalent to fixed cost. Therefore, the distance between total cost curve and variable cost curve is uniform throughout their length. In other words total cost curve and variable cost curves are parallel.

B. Average Cost. Per unit cost of good is called its average fixed cost. The total average cost is the sum of average fixed cost and average variable cost. It is equal to the fixed cost divided by the quantity of output. Average fixed cost can be expressed as:

AFC diminishes with every increase in quantity in the output produced because the total fixed cost is spread out over a large number of units. As seen in the schedule the average fixed cost curve falls steeply in the beginning and then tends to be approaching X axis but never becomes zero. Diagrammatically, the average fixed cost curve will be rectangular hyperbola.

Average variable cost (AVC): It refers to the variable expenses per unit of output. The average variable cost is obtained by dividing total variable cost by the quantity of output produced. Symbolically, the average variable cost can be expressed as follows:

$$AVC = TVC / Q.$$

Here, AVC = Average Variable Cost

TVC = Total variable cost

Q = Quantity

As shown in the diagram, the average variable cost is falling, but it begins to rise after a certain point. It is so, because in the initial stages of the production the law of increasing returns operates which causes the cost to diminish. But, after a certain point, law of diminishing return sets in. when that happens, variable cost begins to increase. Law of variable proportions amounts for the U shape of average variable cost curve. In the initial stage of production of a commodity, average variable costs are falling. Then they are constant and ultimately have a tendency have to rise.

Average total cost: Average total cost refers to the cost per unit of output. Average cost is the total cost divided by output.

$$AC = TC / Q$$

Thus, average total cost or average cost is the sum of fixed cost and variable cost per unit of output, that is, the average fixed cost plus average variable cost. From this behavior of average total cost depend upon the behavior of average fixed cost and average variable cost fall causing average total cost to fall sharply. However, with the further increase in the output there is a sharp rise in average variable cost which more than offsets the fall in the average fixed cost thereby causing.

Average total cost to rise. It is evident from the data that from the beginning average total cost is diminish till it reaches the maximum value and then rises. Graphically, the average total cost becomes U shaped.

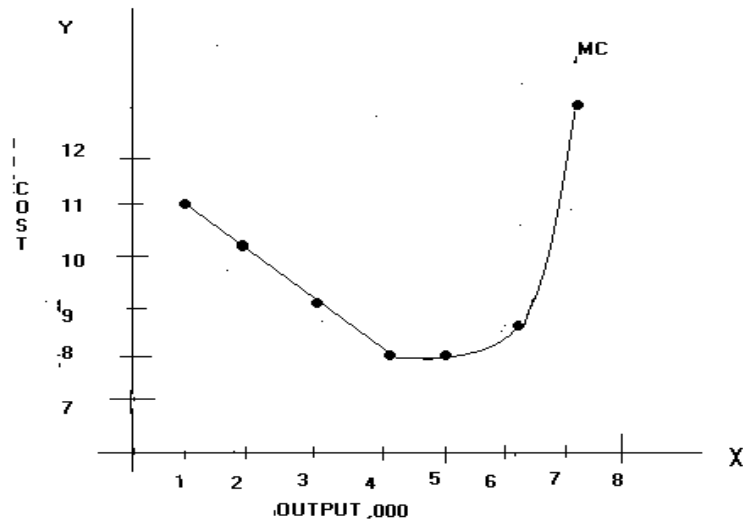
C. Managerial cost (MC). Managerial cost is the additional to total cost by the production of an additional unit of the commodity. It is also known as marginal cost of production. Marginal cost is important for deciding whether any additional output can be produced or not. It can be measured by applying the following formula:

$$MC = \Delta TC / \Delta Q$$

Here, MC = Marginal cost

TC = Change in Total Cost

TQ = Change in Total Quantity



Marginal cost is the cost of additional cost of produced. In other words, it is the change in the total cost resulting from the production of additional unit. It will be seen in the table that the total and marginal cost of producing one unit is Rs 10. The production of additional unit increase the total cost Rs 19, resulting in the additional (marginal) cost by 9. In the same way the marginal cost of producing 3rd, 4th, 5th unit amounts to 8, 7, 7 respectively. It may be concluded that total cost goes on increasing and marginal cost is also influenced by laws of returns. It will be seen that marginal cost curve is also U shaped indicating that marginal cost falls in the beginning due to the operation of law of return(decreasing cost) and ultimately it rises due to operation of law of increasing return(increasing cost).

Marginal cost is also U shaped. In the short period, marginal cost is not affected by fixed cost; it is affected only by variable cost. It is affected only by variable cost. In this way, it is the additional to the total variable cost in the short period by producing one more unit of commodity.

Average and Marginal Costs

For an analysis of price and output policy of a firm, average cost curves, that is, per unit cost curves, are more extensively used than total cost curves because they are more usable. Per unit cost curves are

- (a) the average total cost curve,
- (b) the average fixed cost curve,
- (c) the average variable cost curve
- (d) the marginal cost curve.

Average total cost (ATC) or simply average cost (AC) is obtained by dividing the total cost (TC) by output (O). Thus

$$AC = TC/O$$

Average fixed cost (AFC) is obtained when the total fixed cost (TFC) is divided by output(O).

Thus

$$\mathbf{AFC = TFC/O}$$

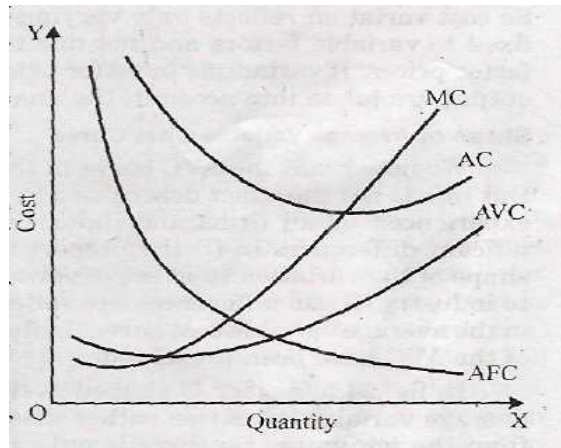
When the total variable cost is divided by output, we get average variable cost (AVC).

Thus

$$\mathbf{AVC = TVC/O}$$

The marginal cost (MC) is the change in total cost resulting from a one-unit change in output. Thus, for example, the marginal cost of the fifteenth unit is the change in total cost when the production is increased from fourteen units to fifteen units per period.

Graphically all the three average cost curves and marginal cost curve are presented in fig. . The pattern of cost variation, as shown in the figure, has some important



Characteristics:

(i) The average fixed cost curve (AFC) declines continuously. The greater the output of the firm, the smaller the average fixed cost will be. Since total fixed cost remains the same regardless of output, it is spread over more units of output as production increases. So it gets smaller and smaller and is like a rectangular hyperbola.

(ii) The average variable cost curve has some sort of a U-shape. It first falls reaches a minimum and then rises. Its U-shape can be explained in terms of the law of variable proportions. In stage I of the law, the average product of the variable factor increases throughout which means that the average variable costs decrease because the fixed factor is more fully and effectively utilized as more units of the variable factor are employed. In stage II of the law, the average product of the variable factor falls because, further increases in the variable factor, after ensuring the efficient utilization of the fixed factor, will cause the average product to decline. It means an increase in average variable cost.

(iii) The average total cost curve, which is also called simply average cost curve or over-all per unit cost, of output which is the vertical summation of AFC curve and AVC curve ($AC = AFC + AVC$) is, in the traditional theory, of U-shape. Its U-shape is determined by the efficiency with which both fixed and variable resources are used. In the beginning stage of production (stage I of the Law Variable Proportions), as more units of the variable factor are combined with the fixed factor, efficiency of both fixed and variable factors increases. So average cost declines. Once the optimum efficiency level is reached, though average fixed cost continues its fall, average variable cost begins to rise¹ at a rate higher than the decline in average fixed cost. Consequently average cost begins to rise. We should note from fig. 24.4 that the minimum point on the average variable cost curve lies at a lower level of output than does the minimum point on the average cost curve. The marginal cost curve intersects both AVC and AC at their lowest points and is also of U-shape. The mechanical formal properties of the family of cost curves can be put thus

"The curve MC necessarily intersects AVC and ATC at their respective minima; the minimum of ATC lies at a larger output than the minimum of AVC; the curve AFC is in every case of a given fixed shape—a so-called rectangular hyperbola

Cost In long run. Introduction.

The long run, is a period long enough to make all costs variable inclusive of such costs as are fixed in the short run. In the short run, variations in the output are only possible within the permitted range by the present fixed plant and equipment. But under the long run the entrepreneur has before him a number of alternatives that include the construction of various kinds and sizes of plant. Hence there are no fixed costs as a firm has a sufficient time to adopt its plant fully. So all costs become variable. While judging this, the long run costs will refer to the costs of producing different level of output by making changes in the size of plant or scale of production.

As all the cost is variable in the long run, the total of these costs is total cost of production. Long run average costs are the per unit cost of production at different level of output, by changing the size of plant or scale of production.

Any cost remain long run cost till a new level of output is achieved and as soon as a new level of output is archived, the long run cost become short run costs.

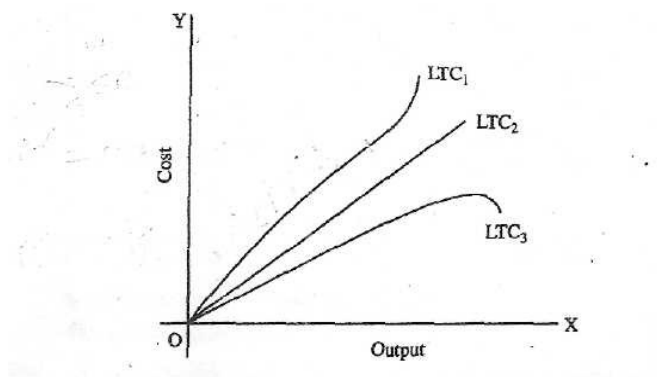
COSTS IN THE LONG RUN (TRADITIONAL CONCEPT)

In the long run all the costs become variable. There are three concepts of costs in the long-run namely,

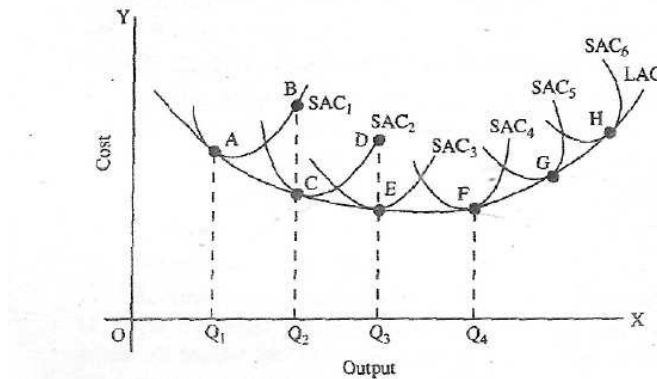
1. Long Run Total Cost.
2. Long Run Average Cost and
3. Long Run Marginal Cost.

1. Long Run Total Cost

According to Lebhafasky, "The long-run total cost of production. (LTC) is the least possible cost of producing any given level of output; when, all inputs are variable". LTC is always less or equal to the short run; total cost. LTC curve represents the least cost of different quantities of output. In the diagram three different types of long run total cost curves are shown. LTC₁ curve is drawn on the assumption that as output increases, cost initially increases at a demising rate and later at an] increasing rate. LTC₂ curve is drawn assuming that increase in output results in a constant rate of increase in the cost. LTC₃ curve is drawn on the assumption at as output increases, cost rises at a diminishing rate. The diagram indicates that all long run total cost curves begin from the point of origin while the short run total cost, begins from any point on OY axis. It means that all costs in long run being variable when quantity of output is zero, total costs are reduced to zero. But, the short run total costs never fall to zero.



2. Long run average cost curve or envelope curve: The long period is a running commentary of short periods. Thus in a sense, the long run consists of all possible short run situations In fact long period is a 'planning horizon' in the sense that the entrepreneurs can plan ahead. Thus, perhaps the best distinction is to say that the firm operates in the short run and plans in the long run. It is for this reason that the long period average cost curve is called a planning curve.



In the long run a firm has a number of alternatives with regard to scale of operations. It is assumed that for each scale of operation, there is an appropriate size of the plant. In the long period, the firm can install new plants in order to expand output, which is not possible in the short period. Moreover, in the long run it is possible to build a plant whose size leads to least average cost for any output.

Derivation of U-shaped long run average cost: It is imperative to point out that for plants of different sizes there are different appropriate short run average cost (SAC) curves corresponding to each -plant. If a firm desires to produce a particular output in the long period, it will then build a relevant plant and operate on the corresponding curve. It selects that short run plant which gives the lowest average cost of producing a desired volume of output. In the diagram, six short run average cost. Curves SAC₁, - SAC₂, SAC₃, SAC₄, SAC₅ and SAC₆ corresponding to six different plants are drawn. These six plants are only representatives of wide variety that could be constructed. Suppose the entrepreneur thinks that output (Q_1) .is most profitable to produce, the plant represented by SAC₁ will then be built because it will produce this output at the least possible cost per unit (Q_1A). To produce Q_2 output the producer can make use of plant represented by SAC₁. In this case cost per unit will decline from Q_1A to Q_2B which is the least cost of producing (Q_2) output. The producer can produce Q_2 output at least cost per unit