

. AU-6424

M.B.A. (First Semester) Examination, 2014-15

MANAGERIAL ECONOMICS

Model Answer

Section – A

Microeconomics is the study of particular markets, and segments of the economy. It looks at issues such as consumer behaviour, individual labour markets, and the theory of firms.

Micro economics is concerned with:

- Supply and demand in individual markets
- Individual consumer behaviour.
- Individual labour markets – e.g. demand for labor
- Externalities arising from production and consumption.

Macro economics is the study of the whole economy. It looks at ‘aggregate’ variables, such as aggregate demand, national output and inflation.

Macro economics is concerned with:

- Monetary / fiscal policy. e.g. what effect does interest rates have on whole economy?
- Reasons for inflation, and unemployment
- Economic Growth
- International trade and globalisation
- Reasons for differences in living standards and economic growth between countries.
- Government borrowing

2. Demand Schedule

- The demand schedule illustrates the relationship between price and quantity demanded by using a table of figures. The demand schedule generally consists of two columns: one for the price of a product and one for the quantity demanded at that price. The price column displays different price levels, arrayed from lowest to highest, or vice versa, while the quantity demanded column displays the quantity of that good or service demanded at each price level. The demand schedule for most products will show a reduction in quantity demanded as the price increases.

Demand Curve

- The demand curve is a visual form of the demand schedule. Economists depict the demand schedule on a two-dimensional graph, consisting of a vertical axis representing

price and a horizontal axis representing quantity demanded. The vertical axis displays different price levels from highest to lowest, while the horizontal axis displays different levels of demand. The apex of the vertical and horizontal axis has a value of zero for both quantity and price. Mankiw notes that the demand curve for most products slopes downward, indicating an increase in demand as the price declines.

"When there is an increase in price there will be a decrease in demand."

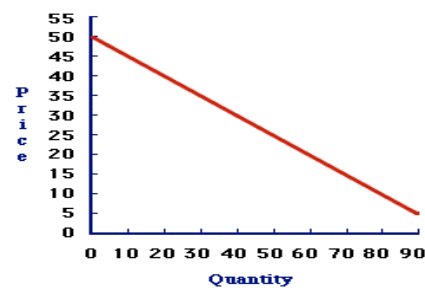
"When there is a decrease in price there will be an increase in demand."

Demand Schedule

	Price	Quantity Demanded
A	5	90
B	10	80
C	15	70
D	20	60
E	25	50
F	30	40
G	35	30
H	40	20
I	45	10
J	50	0

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Demand Curve



3. Utility refers to the satisfaction that a consumer obtains from the purchase and use of commodities and services.

Cardinal Utility

- Cardinal utility states that the satisfaction the consumer derives by consuming goods and services can be measured with numbers. Cardinal utility is measured in terms of *utils* (the units on a scale of utility or satisfaction). According to cardinal utility the goods and services that are able to derive a higher level of satisfaction to the customer will be assigned higher utils and goods that result in a lower level of satisfaction will be assigned lower utils. Cardinal utility is a quantitative method that is used to measure consumption satisfaction.

Ordinal Utility

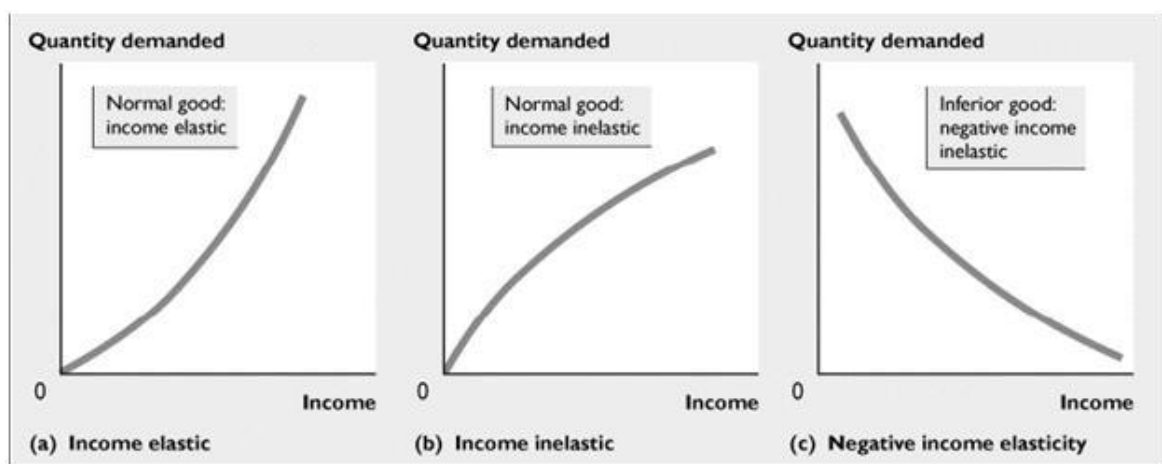
- Ordinal utility states that the satisfaction the consumer derives from the consumption of goods and services cannot be measured in numbers. Rather, ordinal utility uses a ranking system in which a ranking is provided to the satisfaction that is derived from consumption. According to ordinal utility, the goods and services that offer the customer a higher level of satisfaction will be assigned higher ranks and the opposite for goods and services that offer a lower level of satisfaction. The goods that offer the highest level of satisfaction in consumption will be provided the highest rank. Ordinal utility is a qualitative method that is used to measure consumption satisfaction.

4. Discuss of 'INCOME ELASTICITY OF DEMAND'

- A measure of the relationship between changes in the quantity demanded for a particular good and a change in real income. Income elasticity of demand is an economics term that refers to the sensitivity of the quantity demanded for a certain product in response to a change in consumer incomes. The formula for calculating income elasticity of demand is:

$$\text{Income Elasticity of Demand} = \% \text{ change in quantity demanded} / \% \text{ change in income}$$

For example, if the quantity demanded for a good increases for 15% in response to a 10% increase in income, the income elasticity of demand would be $15\% / 10\% = 1.5$. The degree to which the quantity demanded for good changes in response to a change in income depends on whether the good is a necessity or a luxury.



5.

V: **Fixed costs** are costs that do not vary with the level of production. They are the same if a firm produces one unit of their product or one million units. Fixed costs typically include such things as the rent on the building in which the firm produces its product. For example, a retailer must pay rent and utility bills irrespective of sales and the company is responsible for paying 100% of the monthly payments whether they produce one case of bottled water or 10,000 cases of bottled water.

$$FC + VC(Q) = TC$$

where FC is fixed costs, VC is variable costs, Q is quantity, and TC is total cost.

Variable costs are the costs that do vary with the level of production. variable costs are a direct function of production volume, rising whenever production expands and falling whenever it contracts. Examples of common variable costs include raw materials, packaging, and labour directly involved in a company's manufacturing process.

$$\text{Total Variable Cost} = \text{Total Quantity of Output} \times \text{Variable Cost Per Unit of Output}$$

Average cost per unit

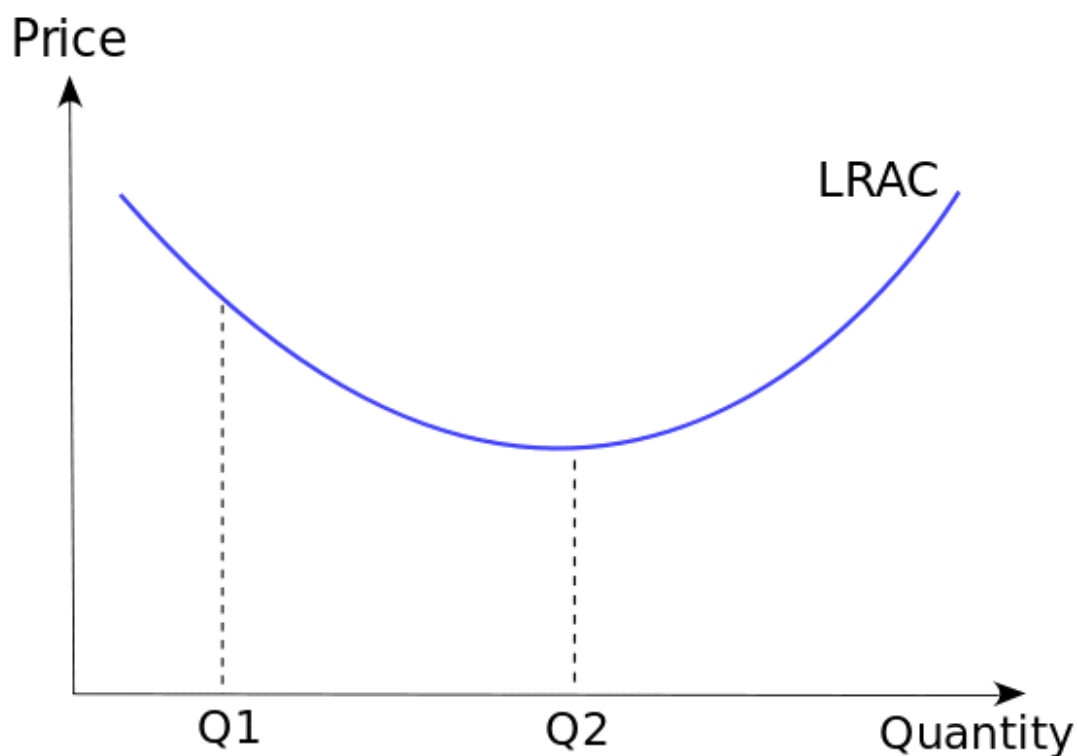
Average cost is equal to total cost divided by the number of goods produced (the output quantity, Q). It is also equal to the sum of average variable costs (total variable costs divided by Q) plus average fixed costs (total fixed costs divided by Q). Average costs may be dependent on the time period considered.

$$AC = \frac{TC}{Q}$$



6. Long-run average cost curve (LRAC)

The long-run average cost curve depicts the cost per unit of output in the long run—that is, when all productive inputs' usage levels can be varied. All points on the line represent least-cost factor combinations; points above the line are attainable but unwise, while points below are unattainable given present factors of production. The behavioural assumption underlying the curve is that the producer will select the combination of inputs that will produce a given output at the lowest possible cost. Given that LRAC is an *average* quantity, one must not confuse it with the long-run *marginal* cost curve, which is the cost of one more unit.^{[3]:232} The LRAC curve is created as an envelope of an infinite number of short-run average total cost curves, each based on a particular fixed level of capital usage.^{[3]:235} The typical LRAC curve is U-shaped, reflecting increasing returns of scale where negatively-sloped, constant returns to scale where horizontal and decreasing returns (due to increases in factor prices) where positively sloped. Contrary to the envelope is not created by the minimum point of each short-run average cost curve. This mistake is recognized as Viner's Error.



7. Perfect competition: In economic theory, **perfect competition** (sometimes called *pure competition*) describes markets such that no participants are large enough to have the market power to set the price of a homogeneous product. Because the conditions for perfect competition are strict, there are few if any perfectly competitive markets. Still, buyers and sellers in some auction-type markets, say for commodities (especially decentralised digital commodities) or some financial assets, may approximate the concept. As a Pareto efficient allocation of economic resources, perfect competition serves as a natural benchmark against which to contrast other market structures.

Basic structural characteristics:

Generally, a perfectly competitive market exists when every participant is a "price taker", and no participant influences the price of the product it buys or sells. Specific characteristics may include:

- **A large number buyers and sellers** – A large number of consumers with the willingness and ability to buy the product at a certain price, and a large number of producers with the willingness and ability to supply the product at a certain price.
- **No barriers of entry and exit** – No entry and exit barriers make it extremely easy to enter or exit a perfectly competitive market.
- **Perfect factor mobility** – In the long run factors of production are perfectly mobile, allowing free long term adjustments to changing market conditions.
- **Perfect information** - All consumers and producers are assumed to have perfect knowledge of price, utility, quality and production methods of products.

- **Zero transaction costs** - Buyers and sellers do not incur costs in making an exchange of goods in a perfectly competitive market.
- **Profit maximization** - Firms are assumed to sell where marginal costs meet marginal revenue, where the most profit is generated.
- **Homogeneous products** - The products are perfect substitutes for each other; i.e. the qualities and characteristics of a market good or service do not vary between different suppliers.
- **Non-increasing returns to scale** - The lack of increasing returns to scale (or economies of scale) ensures that there will always be a sufficient number of firms in the industry.
- **Property rights** - Well defined property rights determine what may be sold, as well as what rights are conferred on the buyer.
- **Rational buyers** - buyers capable of making rational purchases based on information given
- **No externalities** - costs or benefits of an activity do not affect third parties

8. **Discriminating monopoly:** Price discrimination refers to the practice of a seller of selling the same good at different prices to different buyers. A seller makes price discrimination between different buyers when it is both possible and profitable for him to do so. Price discrimination is not a very common phenomenon. It is very difficult to charge different prices for the identical good from different customers. Frequently, the product is slightly differentiated to successfully practice price discrimination.

- In the words of Mrs. John Robinson “The act of selling the same article, produced under single control at different prices to different buyers is known as price discrimination”. Also Prof. Stigler defines Price discrimination as “the sales of technically similar products at prices which are not proportional to marginal cost” As per this definition, a seller is indulging in price discrimination when is charging different prices from different buyers for the different varieties of the same good if the differences in prices are not the same as or proportional to the differences in the cost of producing them. For Example, If the manufacturer of a mobile of a given variety sells at Rs. 10,000/- to one buyer and at Rs. 11,000/- to another buyer, (Specific Model) he is practicing price discrimination.
- Price discrimination is not possible under perfect competition, even if the two markets could be kept separate. Since market demand in each market is perfectly elastic, every seller would try to sell in that market in which could get the highest price. Competition would make the price equal in both the markets. However, price discrimination is possible and profitable only when markets are imperfect.

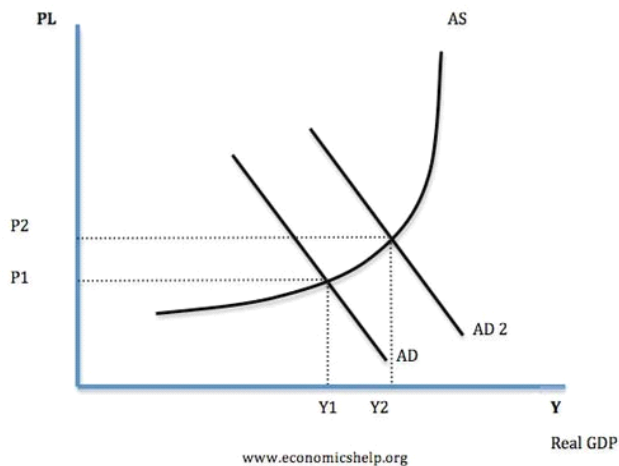
9. **Inflation:** Inflation means a sustained increase in the general price level. However, this increase in the cost of living can be caused by different factors. The main two types of inflation are

- Demand pull inflation – this occurs when the economy grows quickly and starts to ‘overheat’ – Aggregate demand (AD) will be increasing faster than aggregate supply (LRAS).

- Cost push inflation – this occurs when there is a rise in the price of raw materials, higher taxes, etc.

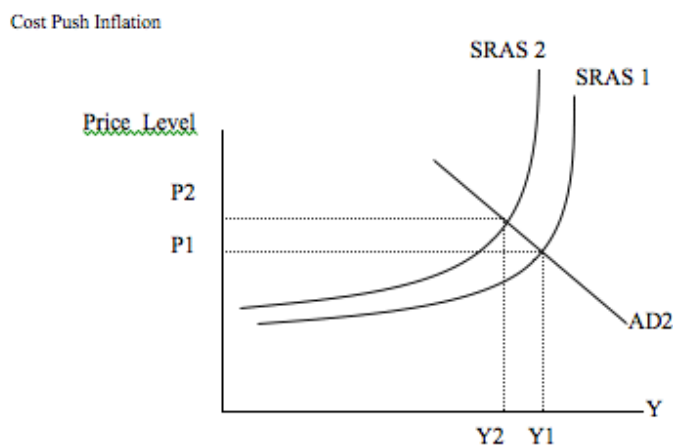
Demand Pull Inflation

- This occurs when AD increases at a faster rate than AS. Demand pull inflation will typically occur when the economy is growing faster than the [long run trend rate of growth](#). If demand exceeds supply, firms will respond by pushing up prices.



Cost Push Inflation

- This occurs when there is an increase in the cost of production for firms causing aggregate supply to shift to the left. Cost push inflation could be caused by rising energy and commodity prices. See: [Cost Push inflation](#)



Wage Push Inflation

- Rising wages tend to cause inflation. In effect this is a combination of demand pull and cost push inflation. Rising wages increase cost for firms and so these are passed onto consumers in the form of higher prices. Also rising wages give consumers greater disposable income and therefore cause increased consumption and AD. In the 1970s,

trades unions were powerful in the UK. This helped cause rising nominal wages; this was a significant factor in causing inflation.

Imported Inflation.

A depreciation in the exchange rate will make imports more expensive. Therefore, the prices will increase solely due to this exchange rate effect. A depreciation will also make exports more competitive so will increase demand.

10. **Business cycle:** The term business cycle (or economic cycle or boom–bust cycle) refers to fluctuations in aggregate production, trade and activity over several months or years in a market economy. The business cycle is the upward and downward movements of levels of gross domestic product (GDP) and refers to the period of expansions and contractions in the level of economic activities (business fluctuations) around its long-term growth trend.

- **Types of business cycle:** Dynamic forces operating in a capitalist economy create various kinds of economic fluctuations. These fluctuations can be classified as follows:-
- **Short-Time Cycle:** This trade cycle occur for a short period of time. It is also known as minor cycles. It lasts for about 3-4 years.
- **Secular Trends:** This trade cycle occurs for a long period of time and is known as Long term cycle. It lasts for about 4-8 years or more. It is also known as major cycle.
- **Seasonal Fluctuations:** This refers to trade cycles, which take place due to seasonal changes in the economy. For e.g. failure of monsoon can cause a downtrend in the economy which may be followed by a good monsoon and up to trend.
- **Irregular or Random Fluctuations:** These trade cycles are unpredictable and occur during a period of strikes, war, etc., causing a shock to the economic system.
- **Cyclic Fluctuation:** These fluctuations are wave-like changes in economic activity caused by recurring phases of expansion and contraction. There is an upswing from a trough (low point) to peak and downswing from the peak to trough caused due to economic changes in demand, or supply or various other factors.

Section B

2. The science of Managerial Economics has emerged only recently. With the growing variability and unpredictability of the business environment, business managers have become increasingly concerned with finding rational and ways of adjusting to an exploiting environmental change.

- The problems of the business world attracted the attentions of the academicians from 1950 onwards. Managerial economics as a subject gained popularity in the USA after the publication of the book “Managerial Economics” by Joel Dean in 1951.
- Managerial economics generally refers to the integration of economic theory with business practice. Economics provides tools managerial economics applies these tools to the management of business. In simple terms, managerial economics means the application of economic theory to the problem of management. Managerial economics may be viewed as economics applied to problem solving at the level of the firm.

- It enables the business executive to assume and analyse things. Every firm tries to get satisfactory profit even though economics emphasises maximizing of profit. Hence, it becomes necessary to redesign economic ideas to the practical world. This function is being done by managerial economics.

Managerial economists have defined managerial economics in a variety of ways:

- According to E.F. Brigham and J. L. Pappas, Managerial Economics is “the application of economic theory and methodology to business administration practice.”
- To Christopher Savage and John R. Small: “Managerial Economics is concerned with business efficiency”.
- Milton H. Spencer and Lonis Siegelman define Managerial Economics as “the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management.”
- In the words of Me Nair and Meriam, “Managerial Economics consists of the use of economic modes of thought to analyse business situations.”
- D.C. Hague describes Managerial Economics as “a fundamental academic subject which seeks to understand and analyse the problems of business decision making.”
- In the opinion of W.W. Haynes “Managerial Economics is the study of the allocation of resources available to a firm of other unit of management among the activities of that unit.”
- According to Floyd E. Gillis, “Managerial Economics deals almost exclusively with those business situations that can be quantified and dealt with in a model or at least approximated quantitatively.”
- The above definitions emphasise the interrelationship of economic theory with business decision making and forward planning.

Economic Theory and Managerial Theory:

- Economic Theory is a system of inter-relationships. Among the social sciences, economics is the most advanced in terms of theoretical orientations. There are well defined theoretical structures in economics. One of the most widely discussed structures is the postulation or axiomatic method of theory formulation.
- It insists that there is a logical core of theory consisting of postulates and their predictions which forms the basis of economic reasoning and analysis. This logical core of theory cannot easily be detached from the empirical part of the theory. Economics has a logically consistent system of reasoning. The theory of competitive equilibrium is entirely based on axiomatic method. Both in deductive inferences and inductive generalisations, the underlying principle is the interrelationships.
- Managerial theory refers to those aspects of economic theory and application which are directly relevant to the practice of management and the decision making process. Managerial theory is pragmatic. It is concerned with those analytical tools which are useful in improving decision making.

- Managerial theory provides necessary conceptual tools which can be of considerable help to the manager in taking scientific decisions. The managerial theory provides the maximum help to a business manager in his decision making and business planning. The managerial theoretical concepts and techniques are basic to the entire gamut of managerial theory.
- Economic theory deals with the body of principles. But managerial theory deals with the application of certain principles to solve the problem of a firm.
- Economic theory has the characteristics of both micro and macroeconomics. But managerial theory has only micro characteristics.
- Economic theory deals with a study of individual firm as well as individual consumer. But managerial theory studies only about individual firm.
- Economic theory deals with a study of distribution theories of rent, wages, interest and profits. But managerial theory deals with a study of only profit theories.
- Economic theory is based on certain assumptions. But in managerial theory these assumptions disappear due to practical situations.
- Economic theory is both positive and normative in character but managerial theory is essentially normative in nature.
- Economic theory studies only economic aspect of the problem whereas managerial theory studies both economic and non-economic aspects.

Nature of Managerial Economics:

- Managerial economics is a science applied to decision making. It bridges the gap between abstract theory and managerial practice. It concentrates more on the method of reasoning. In short, managerial economics is “Economics applied in decision making”.

Decision Making:

- Managerial economics is supposed to enrich the conceptual and technical skill of a manager. It is concerned with economic behaviour of the firm. It concentrates on the decision process, decision model and decision variables at the firm level. It is the application of economic analysis to evaluate business decisions.
- The primary function of a manager in business organisation is decision making and forward planning under uncertain business conditions. Some of the important management decisions are production decision, inventory decision, cost decision, marketing decision, financial decision, personnel decision and miscellaneous decisions. One of the hallmarks of a good executive is the ability to take quick decision. He must have the clarity of goals, use all the information he can get, weigh pros and cons and make fast decisions.
- The decisions are taken to achieve certain objectives. Objectives are the motivating factors in taking decision. Several acts are performed to attain the objectives quantitative techniques are also used in decision making. But it may be noted that acts and quantitative techniques alone will not produce desirable results. It is important to remember that other variables such as human and behavioural considerations,

technological forces and environmental factors influence the choices and decisions made by managers.

Scope of Managerial Economics:

- Managerial Economics is a developing subject. The scope of managerial economics refers to its area of study. Managerial economics has its roots in economic theory. The empirical nature of managerial economics makes its scope wider. Managerial economics provides management with strategic planning tools that can be used to get a clear perspective of the way the business world works and what can be done to maintain profitability in an ever changing environment.
- Managerial economics refers to those aspects of economic theory and application which are directly relevant to the practice of management and the decision making process within the enterprise. Its scope does not extend to macro-economic theory and the economics of public policy which will also be of interest to the manager. While considering the scope of managerial economics we have to understand whether it is positive economics or normative economics.

Positive versus Normative Economics:

- Most of the managerial economists are of the opinion that managerial economics is fundamentally normative and prescriptive in nature. It is concerned with what decisions ought to be made. The application of managerial economics is inseparable from consideration of values or norms, for it is always concerned with the achievement of objectives or the optimization of goals. In managerial economics, we are interested in what should happen rather than what does happen. Instead of explaining what a firm is doing, we explain what it should do to make its decision effective.

Positive Economics:

- A positive science is concerned with 'what is'. Robbins regards economics as a pure science of what is, which is not concerned with moral or ethical questions. Economics is neutral between ends. The economist has no right to pass judgment on the wisdom or folly of the ends itself. He is simply concerned with the problem of resources in relation to the ends desired. The manufacture and sale of cigarettes and wine may be injurious to health and therefore morally unjustifiable, but the economist has no right to pass judgment on these since both satisfy human wants and involve economic activity.

Normative Economics:

- Normative economics is concerned with describing what should be the things. It is, therefore, also called prescriptive economics. What price for a product should be fixed, what wage should be paid, how income should be distributed and so on, fall within the purview of normative economics?
- It should be noted that normative economics involves value judgments. Almost all the leading managerial economists are of the opinion that managerial economics is fundamentally normative and prescriptive in nature.
- It refers mostly to what ought to be and cannot be neutral about the ends. The application of managerial economics is inseparable from consideration of values, or norms for it is always concerned with the achievement of objectives or the optimisation of goals. In

managerial economics, we are interested in what should happen rather than what does happen. Instead of explaining what a firm is doing, we explain what it should do to make its decision effective. Managerial economists are generally preoccupied with the optimum allocation of scarce resources among competing ends with a view to obtaining the maximum benefit according to predetermined criteria. To achieve these objectives they do not assume *ceteris paribus*, but try to introduce policies. The very important aspect of managerial economics is that it tries to find out the cause and effect relationship by factual study and logical reasoning. The scope of managerial economics is so wide that it embraces almost all the problems and areas of the manager and the firm.

3. [Demand](#) drives economic growth. But what drives demand? In economics, there are five things that drive individual demand. There are six that drive [aggregate demand](#).

- businesses seek to increase demand for their goods and services so they can raise prices and boost [profits](#). Governments and [central banks](#) try to implement policies that increase demand to get the economy out of the contraction phase of the business, and slow down demand during the expansion phase.
- Even individuals try to raise demand for their services if they are wage-earners. Therefore, it pays (literally) for everyone to know what drives demand, and how to affect those determinants.

Demand Equation or Function

- The relationship between the five factors and demand is usually expressed as a formula, or function. The following formula tells you that the quantity demanded is a function of these five determinants:
- $qD = f(\text{price, income, prices of related goods, tastes, expectations})$
- What does this mean? The important thing to note is that the quantity demanded changes, not overall demand.

Determinant of demand:

- **Price** - The [law of demand](#) states that when prices rise, the quantity demanded falls. This also means that, when prices drop, demand will rise. People base their purchasing decisions on price, if all other things are equal. The reverse, of course, is also true. When demand rises, businesses will usually raise the price to avoid being out of stock and disappointing customers. Conversely, when demand falls, businesses will usually drop the price, even if only temporarily for a sale, to sell more of the good or service.
- **Income** - When income rises, so will the quantity demanded. When income falls, so will demand. However, even if your income doubles, you will buy twice as much of a particular good or service. There's only so many pints of ice cream you'd want to eat, no matter how rich you are. That's where the concept of marginal utility comes into the picture. The first pint of ice cream tastes delicious. You might have another. But after that the marginal utility starts to decrease to the point where you don't want any more. (At least until tomorrow.)

- **Prices of related goods or services** - The price of complementary goods or services raises the overall cost of using the good you demand, so you'll want less. For example, when gas prices rose to \$4 a gallon in 2008, the demand for Hummers fell. Gas is a complementary good to Hummers. The overall cost of driving a Hummer rose along with gas prices.
- The opposite reaction occurs when the price of a substitute rises. When that happens, people will want less of the good or service. That's why Apple constantly innovates with its iPhones and iPods. As soon as a substitute, such as the Droid, appears at a lower price, Apple comes out with a better product, so now the Droid isn't really a substitute.
- **Tastes** - This is the desire, emotion, or preference for a good or service. When tastes rise, so does the quantity demanded. Likewise, when tastes fall, it will depress the quantity demanded. This is what brand advertising is all about. Companies spend millions to make you feel strongly that you want a product.
- **Expectations** - When people expect that the value of something will rise, then they demand more of it. This explains the housing bubble of 2005. Housing prices rose, but people bought more because they expected the price to continue to go up. This drove prices even further, until the bubble burst in 2006. Between 2007 and 2011, housing prices fell 30%. However, the quantity demanded didn't rise because people expected prices to continue to fall thanks to record levels of foreclosures entering the market. When people expect prices to rise again, so will demand for housing.
- **Number of buyers in the market** -When the number of buyers in the market rises, so will the quantity demanded. This is another reason for the housing bubble. Low-cost mortgages increased the number of people who were told they could afford a house. The number of buyers actually increased, driving up the demand for housing. When they found they really couldn't afford the mortgage, especially when housing prices started to fall, they foreclosed. This reduced the number of buyers, and demand also fell.

Levels of incomes

- A key determinant of demand is the level of income evident in the appropriate country or region under analysis. As a generality, the higher the level of aggregate and/or personal income the higher the demand for a typical commodity, including forest products. More of a good or service will be chosen at a given price where income is higher. Thus determinants of demand normally utilize some form of income measure, including Gross Domestic Product (GDP).

Population

- Population is of course a key determinant of demand. Although all forest products do not necessarily enter final consumer markets, the actual markets are largely presumed to be functionally related to population. Growing populations are positively correlated to timber demands in the aggregate, as well as specifically to individual forest products. Frequently, population and income estimators are combined, as in the case of the use of Gross Domestic Product per capita.

End market indicators

- The use of end market indicators as determinants of demand is frequently incorporated into demand analysis. For example, much of the final use of forest products is linked to

construction (residential and total). Indicators and trends related to construction activities, or which are determinants of construction, provide indirect estimates of the influence of these activities as the source of derived demand for wood. Housing starts, public investments, interest rates, etc. can be highly correlated to timber demand.

Availability and price of substitute goods

- Consumption choices related to timber are also influenced by the alternative options facing users in the relevant marketplace. The availability of potential substitute products, and their prices, weighs heavily in determining the elasticity of demand, both in the short run (static) sense and over time (long run). Fuel wood, as a dominant use of timber in the Asia Pacific Region, reflects conditions of very limited options for energy sources at 'reasonable' prices. Rural low income or subsistence populations simply do not have 'options' regarding energy - they use wood or go without. Demand, at this basic level, is almost perfectly inelastic. The cost (if only implicit in terms of gathering time) does not materially affect consumption quantity.
- Suitability of alternative goods and services is, in part, a question of knowledge as well as availability. Market information regarding alternative products, quality, convenience, and dependability all influence choices. Under conditions of increased scarcity and rising prices for tropical hardwood panels, for example, users have a positive incentive to search for and investigate the suitability of alternatives that were previously overlooked or ignored.

4. The law of returns operates in the short period. It explains the production behavior of the firm with one factor variable while other factors are kept constant. Whereas the law of returns to scale operates in the long period. It explains the production behavior of the firm with all variable factors.

There is no fixed factor of production in the long run. The law of returns to scale describes the relationship between variable inputs and output when all the inputs, or factors are increased in the same proportion. The law of returns to scale analysis the effects of scale on the level of output. Here we find out in what proportions the output changes when there is proportionate change in the quantities of all inputs. The answer to this question helps a firm to determine its scale or size in the long run.

It has been observed that when there is a proportionate change in the amounts of inputs, the behavior of output varies. The output may increase by a great proportion, by in the same proportion or in a smaller proportion to its inputs. This behaviour of output with the increase in scale of operation is termed as increasing returns to scale, constant returns to scale and diminishing returns to scale. These three laws of returns to scale are now explained, in brief, under separate heads.

(1) Increasing Returns to Scale:

If the output of a firm increases more than in proportion to an equal percentage increase in all inputs, the production is said to exhibit increasing returns to scale.

For example, if the amount of inputs are doubled and the output increases by more than double, it is said to be an increasing returns return to scale. When there is an increase in the scale of production, it leads to lower average cost per unit produced as the firm enjoys economies of scale.

(2) Constant Returns to Scale:

When all inputs are increased by a certain percentage, the output increases by the same percentage, the production function is said to exhibit constant returns to scale.

For example, if a firm doubles inputs, it doubles output. In case, it triples output. The constant scale of production has no effect on average cost per unit produced.

(3) Diminishing Returns to Scale:

The term 'diminishing' returns to scale refers to scale where output increases in smaller proportion than the increase in all inputs.

For example, if a firm increases inputs by 100% but the output decreases by less than 100%, the firm is said to exhibit decreasing returns to scale. In case of decreasing returns to scale, the firm faces diseconomies of scale. The firm's scale of production leads to higher average cost per unit produced.

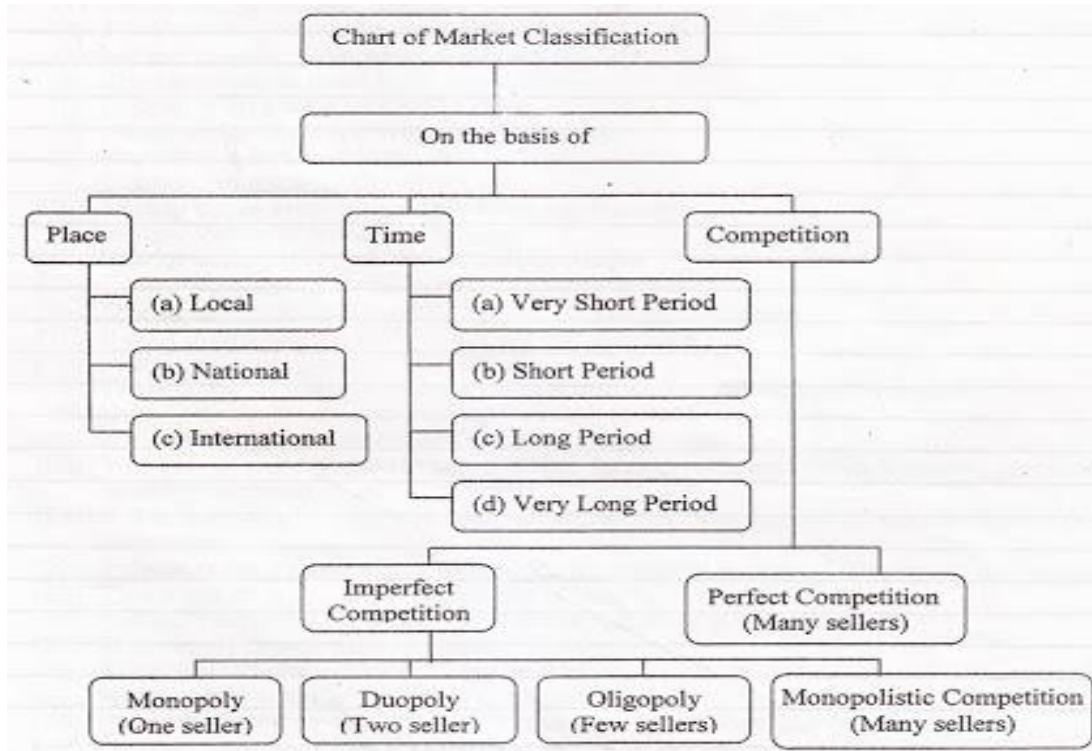
5. A set up where two or more parties engage in exchange of goods, services and information is called a market. Ideally a market is a place where two or more parties are involved in buying and selling.

Features of market

1. Size. The bigger the market size, the better.
2. Urgency. The more urgently people need the products in that market, the better. For example, pet rocks have no urgency, but medication does.
3. Speed to market. The faster you can go from getting the initial idea to beginning to make sales, the better.
4. High pricing potential. The higher you can charge per product, the better.
5. Low cost of acquiring new customers. The easier and cheaper it is to get new customers, the better.
6. Low cost and ease of delivering. The cheaper and easier it is to deliver your product, the better.
7. Uniqueness. The more unique your product is (or how you deliver it, or how you package it), the better.
8. Low upfront investment. The less resources you need to test the market, build the business and get started, the better.
9. Back-end and up-sell potential. The more related products you can sell to your existing clients, the better. You don't want to go into business whereby you can only sell one product one time to each customer and then that's it. There is now growth potential there. You need to be able to repeatedly sell the same customer.
10. Evergreen potential. The easier it is to continue selling and selling once in business, the better. For example, a product that can be sold for ever, like toilet paper or cooking oil, is better than one that is sold just once, like pet rocks.

11. Addressability. The easier it is to reach and communicate with your market, the better. For example, does your market congregate in “pools” like mailing lists or radio stations or places you can get access to?

Classification or Types of Market



Generally, the market is classified on the basis of:

- Place,
- Time and
- Competition.

On the basis of Place, the market is classified into:

- Local Market or Regional Market.
- National Market or Countrywide Market.
- International Market or Global Market.

On the basis of Time, the market is classified into:

- Very Short Period Market.
- Short Period Market.
- Long Period Market.
- Very Long Period Market.

On the basis of Competition, the market is classified into:

Perfectly Competitive Market Structure.

Imperfectly Competitive Market Structure.

Both these market structures widely differ from each other in respect of their features, price, etc. Under imperfect competition, there are different forms of markets like monopoly, duopoly, oligopoly and monopolistic competition.

A monopoly has only one or a single (mono) seller.

Duopoly has two (duo) sellers.

Oligopoly has little or fewer (oligo) number of sellers.

Monopolistic competition has many or several numbers of sellers.

6. Oligopoly

Market situation in which producers are so few that the actions of each of them have an impact on price and on competitors. Each producer must consider the effect of a price change on the others. A cut in price by one may lead to an equal reduction by the others, with the result that each firm will retain about the same share of the market as before but with a lower profit margin. Competition in oligopolistic industries thus tends to manifest itself in non-price forms such as advertising and product differentiation.

Oligopoly is a fairly common market organization. In the United States, both the steel and automobile industries (with three or so large firms) provide good examples of oligopolistic market structures. Probably the most important characteristic of an oligopolistic market structure is the interdependence of firms in the industry. The interdependence, actual or perceived, arises from the small number of firms in the industry. Unlike under monopolistic competition, however, if an oligopolistic firm changes its price or output, it has perceptible effects on the sales and profits of its competitors in the industry. Thus, an oligopolist always considers the reactions of its rivals in formulating its pricing or output decisions. There are huge, though not insurmountable, barriers to entry to an oligopolistic market. These barriers can exist because of large financial requirements, availability of raw materials, access to the relevant technology, or simply existence of patent rights with the firms currently in the industry. Several industries in the United States provide good examples of oligopolistic market structures with obvious barriers to entry, such as the automobile industry, where significant financial barriers to entry exist. An oligopolistic industry is also typically characterized by economies of scale. Economies of scale in production implies that as the level of production rises, the cost per unit of product falls from the use of any plant (generally, up to a point). Thus, economies of scale lead to an obvious advantage for a large producer. There is no single theoretical framework that provides answers to output and pricing decisions under an oligopolistic market structure. Analyses exist only for special sets of circumstances. One of these circumstances refers to an oligopoly in which there are asymmetric reactions of its rivals when a particular oligopolist formulates policies. If an oligopolistic firm cuts its price, it is met with price reductions by competing firms; if it raises the price of its product, however, rivals do not match the price increase. For this reason, prices may remain stable in an oligopolistic industry for a prolonged period.

Price Leadership

Price leadership is a model of oligopoly, where one firm sets prices and others follow. Because explicit price-fixing is illegal, firms sometimes rely on implicit pricing agreements to fix prices at the monopoly level. Under the model of price leadership, one of the oligopolists plays the role of price leader. The leading firm picks a price, and other firms match the price. Such an agreement allows firms to cooperate without actually discussing their pricing strategies.

The problem with an implicit pricing agreement is that it relies on indirect signals that are often garbled and misinterpreted. Suppose that two firms have cooperated for several years, both sticking to the cartel price. When one firm suddenly drops its price, the other firm could interpret the price cut in one of two ways:

- A change in market conditions. Perhaps the first firm observed a change in Demand or production cost and decides that both firms would benefit from a Lower price.
- Under-pricing. Perhaps the first firm is trying to increase its market share and profit at the expense of the second firm.

The first interpretation would probably cause the second firm to match the lower price of the first firm, and price-fixing would continue at the lower price. In contrast, the second interpretation could trigger a price war, undermining the price-fixing agreement.

The kinked demand curve model of oligopoly gets its name from its assumptions about how firms in an oligopoly respond when one firm changes its price. The model assumes that when one firm cuts its price, the other firms will match the price cut. But if one firm raises its price, other firms don't match the price hike.

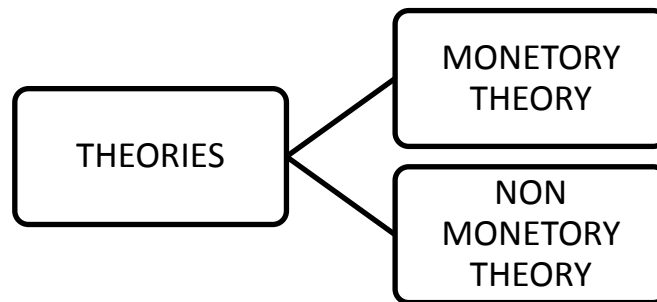
Firms can collude explicitly, as in the case of cartels, but this type of behaviour is illegal in many parts of the world. An alternative to overt collusion is tacit collusion, in which firms have an unspoken understanding that limits their competition. One way in which firms achieve this is price leadership, in which one firm serves as an industry leader and sets prices, while other firms raise and lower their prices to match. For example, the steel, cars, and breakfast cereals industries have all been accused of engaging in tacit collusion..

Tacit collusion can be difficult to identify. The fact that a price change by one firm is followed by similar price changes among other firms doesn't necessarily mean that tacit collusion exists. After all, in a perfectly competitive industry, economists expect prices to move together because all firms face similar changes in demand and the cost of inputs.

For example, imagine that a town has three gas stations. Without any way to communicate, all three will lower their prices in an attempt to capture the entire market, stopping only when marginal cost equals marginal revenue. If the firms could cooperate, however, they would be better off if all set the price of gas at \$0.20 above marginal cost. Each would have slightly lower sales but would have much higher revenue. Although explicit communication about prices is illegal, the firms might tacitly agree that whenever one station raises its prices, the other two will follow suit. In this way, all three can receive the benefits of oligopoly. The gas station that first raises its prices, and that the other two follow, is called the price leader.

7. Business Cycle Theory:

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 occur 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.

3. INNOVATION THEORY:-

This theory of trade-cycle was propounded by Prof. Schumpeter. He was of the opinion that innovations are regular feature of capitalist countries. These innovations change the present technologies of production by which whole of the economy is affected. Therefore, innovation should be regarded as an important cause of trade cycle. Prof. Schumpeter includes following in innovation-production of a New Product, Development of a new technology of production, Mechanical development. Development of new markets, Development of new forms of business organization, Development of new technologies of Management etc.

4. **SAVING AND INVESTMENT THEORY:-**

This theory was propounded by Prof. Keynes. Prof. Keynes did not elaborate a separate theory of business cycles. He has given an explanation of business cycle in his general theory. According to Prof. Keynes, important cause of trade cycle are the cyclical changes in the quantity of investment which arise due to the fluctuation in Marginal Efficiency of Capital (MEC). Amount of investment is affected by following two factors-

(i) Rate of interest, (ii) Marginal Efficiency of Capital. Out of these two factors also, Marginal Efficiency of Capital is the most important determinant of the amount of investment because the rate of interest stabilizes after a certain point.

NON-MONETARY THEORY

Non-Monetary Theory of Trade-Cycles are as follows:

1. **CLIMATE THEORY OR SUN-SPOT THEORY** – This theory was propounded by William Stanley Jevons. Prof. Jevons was of the view that trade-cycles are related with the spots which appear at sun in every 10-11 years. These spots affect the density and direction of the heat of sun which, in turn, causes changes in climate. If these changes result in the fall in rainfall, there will be an adverse effect on crops. Adverse effect on crops causes a setback to industries also. Consequently, there is an atmosphere of depression in the economy.
If on the contrary, changes in climate result in good rainfall it bears favorable effect on agriculture. Farmers get good crops which helps the development of industries also. As a result, the stage of recovery is arrived at in the economy which gradually converts into the stage of prosperity. These changes of climate also are cyclical and cause trade-cycles.
2. **PSYCHOLOGICAL THEORY** – This theory of trade-cycles was propounded by Prof. A.C. Pigou. According to Prof. Pigou, Trade-cycles occur due to the changes in the psychology of entrepreneurs. Prof. Pigou was of the opinion that the feeling of optimism and pessimism develop in the minds and hearts of entrepreneurs and these feelings cause trade-cycles. When big businessmen are optimistic towards their business and look forwards the development and bright future, the phase of recovery starts which gradually leads to the phase of prosperity. They make additional investments in their business and take more interest in expanding their activities. Many small businessmen follow them.
If, on the contrary, big businessmen are pessimistic towards their business, the phase of recession starts which leads to the phase of depression. Businessmen start to withdraw their investments and do not take much interest in the development and expansion of business activities. As a result, there is a decline in the level of production, income and employment.

3. **OVER-SAVINGS THEORY** – This theory of trade-cycles was propounded by prof. Hobbson. This theory is known as the theory of under-consumption also. According to the opinion of Prof. Hobber, trade-cycles occur due to improper distribution of national income. Prof. Hobbson was of the opinion that there are wide inequalities in the distribution of income between rich and the poor, Rich persons get a major share of total income which is much more than required by them for their consumption. As a result, they are in a position to save more. They invest these savings in industries. It leads to an increase in the quantity of production on one hand. On the other hand, poor person get only a small part of total income which is much less than the amount required for their consumption. As a result, they are unable in satisfying all of their needs. As a result, demand of goods and services decreases and a gap is created between demand and supply. The producers and sellers are unable in selling entire stock available with them. It leads to a fall in prices which, in turn, leads to a fall in the sales and profits; it causes frustration and pessimism among businessmen and industrialists. It leads to the phase of depression. Thus, according to this theory, the phase of depression occurs due to over savings on one hand under-consumption on the other.

4. **OVER-PRODUCTION THEORY** – This theory was propounded by prof. Sismano. This theory is known as competition theory also. In a capitalist economy, a product is produced by a number of firms. These firms compete with each other. All the firm have to sell their product in the same market. All the firms try to capture maximum part of the market. Result of this situation is that the total production of all the firms exceeds its total market demand. As a result, the sales and profit margin of all the firms start to decline. It causes pessimism their investments. This trend is followed by other firms also. All these factors – lead to the phase of depression.

8. Measures taken by government to control Inflation

Some of the most important measures that must be followed to control inflation are: 1. Fiscal Policy: Reducing Fiscal Deficit 2. Monetary Policy: Tightening Credit 3. Supply Management through Imports 4. Incomes Policy: Freezing Wages.

Inflation occurs due to the emergence of excess demand for goods and services relative to their supply of output at the prevailing prices. Inflation of this type is called demand-pull inflation. Various fiscal and monetary measures can be adopted to check this inflation. We discuss below the efficacy of the various policy measures to check demand-pull inflation which is caused by excess aggregate demand.

1. Fiscal Policy: Reducing Fiscal Deficit:

The budget deals with how a Government raises its revenue and spends it. If the total revenue raised by the Government through taxation, fees, surpluses from public undertakings is less than the expenditure it incurs on buying goods and services to meet its requirements of defence, civil admin-istration and various welfare and developmental activities, there emerges a fiscal deficit in its budget.

It may be noted here that the budget of the government has two parts:

- (1) Revenue Budget,
- (2) Capital Budget.

In the revenue budget on the receipts side revenue raised through taxes, interests, fees, surpluses from public undertakings are given and on the expenditure side consumption expenditure by the government on goods and services required to meet the needs of defence, civil administration, education and health services, subsidies on food, fertilizers and exports, and interest payments on the loans taken by it in the previous years are important items.

In the capital budget, the main items of receipts are market borrowings by the government from the Banks and other financial institutions, foreign aid, small savings (i.e., Provident Fund, National Savings Schemes etc.). The important items of expenditure in the capital budget are defence, loans to public enterprises for developmental purposes, and loans to states and union territories.

The deficit may occur either in the revenue budget or capital budget or both taken together. When there is overall fiscal deficit of the Government, it can be financed by borrowing from the Reserve Bank of India which is the nationalised central bank of the country and has the power to create new money, that is, to issue new notes.

Thus, to finance its fiscal deficit, the Government borrows from Reserve Bank of India against its own securities. This is only a technical way of creating new money because the Government has to pay neither the rate of interest nor the original amount when it borrows from Reserve Bank of India against its own securities.

It is thus clear that budget deficit implies that Government incurs more expenditure on goods and services than its normal receipts from revenue and capital budgets. This excess expenditure by the Government financed by newly created money leads to the rise in incomes of the people. This causes the aggregate demand of the community to rise to a greater extent than the amount of newly created money through the operation of what Keynes called income multiplier.

In the opinion of many economists, the expansion in money supply by monetisation of fiscal deficit leads to inflation in the economy by causing excess aggregate demand in the economy, especially when aggregate supply of output is inelastic. To some extent the creation of new money may not generate demand-pull inflation because if the aggregate output increases, especially of essential consumer goods such as food-grains, cloth, the extra demand arising out of newly created money would be matched by extra supply of output.

However, when there is too much resort to monetisation of fiscal deficit, it will create excess of aggregate demand over aggregate supply. There is no wonder that this has contributed a good deal to the general rise in prices in the past and has been an important factor responsible for present inflation in the Indian economy.

To reduce fiscal deficits and keep deficit financing (which is now called monetization of fiscal deficit) within a safe limit, the Government can mobilise more resources through raising:

- (a) Taxes, both direct and indirect,

(b) Market borrowings, and

(c) Raising small savings such as receipts from Provident Funds.

National Saving Schemes (NSC and NSS) by offering suitable incentives. The Government borrows from the market through sales of its bonds which are generally purchased by banks insurance companies, mutual funds and corporate firms.

The increase in Government expenditure made possible by borrowing without being matched by extra taxation causes aggregate demand to rise not only by the increase in government expenditure but also by the multiplier effect of increase in Government expenditure. If in response to increase in aggregate demand, aggregate supply does not increase sufficiently due to capacity constraints to meet the rise in aggregate demand, the result is inflation in the economy.

Therefore, to check inflation the Government should try to reduce fiscal deficit. It can reduce fiscal deficit by curtailing its wasteful and inessential expenditure. In India, it is often argued that there is a large scope for pruning down non-plan expenditure on defence, police and General Administration and on subsidies being provided on food, fertilizers and exports.

Though it is easy to suggest cutting down of Government expenditure, it is difficult to implement it in practice. However, in our view, there is a large-scale inefficiency in resource use and also a lot of corruption involved in the spending by the Government expenditure which can be curtailed to a good extent.

Thus, both by greater resource mobilisation on the one hand and pruning down of wasteful and inessential Government expenditure on the other, the fiscal deficit and consequently inflation can be checked. In its recommendation for India IMF has suggested that fiscal deficit in India should be reduced to 3 per cent of GDP if inflationary pressures are to be controlled.

2. Monetary Policy: Tightening Credit:

Monetary policy refers to the adoption of suitable policy regarding interest rate and the availability of credit. Monetary policy is another important measure for reducing aggregate demand to control inflation. As an instrument of demand management, monetary policy can work in two ways.

First, it can affect the cost of credit and second, it can influence the credit availability for private business firms. Let us first consider the cost of credit. The higher the rate of interest, the greater the cost of borrowing from the banks by the business firms. As anti-inflationary measure, the rate of interest has to be kept high to discourage businessmen to borrow more and also to provide incentives for saving more.

It has been asserted by some economists who are pro-private sector that higher interest rate discourages private investment and therefore lowers rate of economic growth. It has therefore been pointed that for reducing inflation through raising interest rate some growth has to be sacrificed.

In their words, according to them, there exists trade-off between inflation and growth. However, in our view the contradiction between growth and inflation has been exaggerated. In fact inflation itself adversely affects long-term growth as it discourages savings on the one

hand and encourages non-productive type of investment such as spending on gold, jewellery, real estate. Besides, inflation sends many people below the poverty line.

Further, investment depends more on expected profits or what J.M. Keynes called marginal efficiency of capital (MEC) and on technological change (which raises productivity) rather than on interest rate alone. Raising interest or cost of borrowing will affect, if at all short-term growth. In the medium term to achieve sustained growth control of inflation is necessary.

Since the mid-sixties the dear money policy (that is, higher interest 'rate policy') has been pursued in India to curb the inflationary pressures in the Indian economy. As mentioned above, the higher rate of interest on saving and fixed deposits will induce more savings by the households and help in cutting down aggregate consumption expenditure.

Besides, higher rates of interest will discourage more investment in inventories and consumer durables and will help in reducing aggregate demand. Not only has the bank rate had to be raised but also the deposit and lending rates of commercial banks if full effect of the monetary measures is to be achieved. It is noteworthy that a recent monetary theory emphasizes that it is the changes in the credit availability rather than cost of credit (i.e., rate of interest) that is a more effective instrument of regulating aggregate demand. There are several methods by which credit availability can be reduced.

Firstly, it is through open market operations that the central bank of a country can reduce the availability of credit in the economy. Under open market operations, the Reserve Bank sells Government securities. Those, especially banks, who buy these securities, will make payment for them in terms of cash reserves. With their reduced cash reserves, their capacity to lend money to the business firms will be curtailed. This will tend to reduce the supply of credit or loanable funds which in turn would tend to reduce investment demand by the business firms.

The Cash Reserve Ratio (CRR) can also be raised to curb inflation. By law banks have to keep a certain proportion of cash money as reserves against their deposits. This is called cash reserve ratio. To contract credit availability Reserve Bank can raise this ratio. In recent years to squeeze credit for checking inflation, cash reserve ratio in India has been raised from time to time.

Another instrument for affecting credit availability is the Statutory Liquidity Ratio (SLR). According to statutory liquidity ratio, in addition to CRR, banks have to keep a certain minimum proportion of their deposits in the form of specified liquid assets.

And the most important specified liquid asset for this purpose is the Government securities. To mop up extra liquid assets with banks which may lead to undue expansion in credit availability for the business class, the Reserve Bank has often raised statutory liquidity ratio.

Selective Credit Controls:

By far the most important anti-inflationary measure in India is the use of selective credit control. The methods of credit control described above are known as quantitative or general methods as they are meant to control the availability of credit in general.

Thus, bank rate policy, open market operations and variation in cash reserves ratio expand or contract the availability of credit for all purposes. On the other hand, selective credit controls are meant to regulate the flow of credit for particular or specific purposes.

Whereas the general credit controls seek to regulate the total available quantity of credit (through changes in the high powered money) and the cost of credit, the selective credit control seeks to change the distribution or allocation of credit between its various uses. These selective credit controls are also known as Qualitative Credit Controls. The selective credit controls have both the positive and negative aspect.

In its positive aspect, measures are taken to stimulate the greater flow of credit to some particular sectors considered as important:

(1) Changes in the minimum margin for lending by banks against the stocks of specific goods kept or against other types of securities.

(2) The fixation of maximum limit or ceiling on advances to individual borrowers against stock of particular sensitive commodities.

(3) The fixation of minimum discriminatory rates of interest chargeable on credit for particular purposes.

3. Supply Management through Imports:

To correct excess demand relative to aggregate supply, the latter can also be raised by importing goods in short supply. In India, to check the rise in prices of food-grains, edible oils, sugar etc., the Government has often taken steps to increase imports of goods in short supply to enlarge their available supplies.

When inflation is of the type of supply-side inflation, imports are increased to augment the domestic supplies of goods. To increase imports of goods in short supply the Government reduces customs duties on them so that their imports become cheaper and help in containing inflation. For example in 2008-09 the Indian Government removed customs duties on imports of wheat and rice and reduced them on oilseeds, steel etc. to increase their supplies in India.

At times of inflationary expectations, there is a tendency on the part of businessmen to hoard goods for speculative purposes. The attempt by the Government to import goods in short supply would compel the hoarders to release their hoarded stocks.

This will have a favourable impact on prices of these goods. However, the country can sufficiently increase the imports of goods if there are either enough foreign exchange reserves which can be used to spend on imports or if sufficient foreign aid is available to import the goods in short supply.

4. Incomes Policy: Freezing Wages:

Another anti-inflationary measure which has often been suggested is the avoidance of wage increases which are unrelated to improvements in productivity. This requires exercising control over wage-income. It is through wage-price spiral that inflation gets momentum.

When cost of living rises due to the initial rise in prices, workers demand higher wages to compensate for the rise in cost of living. When their wage demands are conceded to, it gives rise to cost-push inflation. And this generates inflationary expectations which add fuel to the fire.

To check this vicious circle of wages-chasing prices, an important measure will be to exercise control over wages. However, if wages are raised equal to the increase in the productivity of labour, then it will have no inflationary effect. Therefore, the proposal has been to freeze wages in the short run and wages should be linked with the changes in the level of productivity over a long period of time. According to this, wage increases should be allowed to the extent of rise in labour productivity only. This will check the net growth in aggregate demand relative to aggregate supply of output.

However, freezing wages and linking it with productivity only irrespective of what happens to the cost of living has been strongly opposed by trade unions. It has been validly pointed out why freeze wages only, to ensure social justice the other kinds of income such as rent, interest and profits should also be freeze similarly. Indeed, effective way to control inflation will be to adopt a broad-based incomes policy which should cover not only wages but also profits, interest and rental incomes.

9. (i) Pricing Practices:- So far we assumed that the firm produced only one product, sold its product in only one market, was organized as a centralized entity, and had precise knowledge of the demand and cost curves it faced. None of these assumptions is generally true for most firms today. That is, most firms produce more than one product, sell products in more than one market, are organized(at least large corporations) into a number of decentralized or semiautonomous divisional profit centres, and have only a general rather than a precise knowledge of the demand and cost curves they face.

Thus our discussion of the pricing decision must be expanded to take into consideration actual pricing practices as under: Pricing of Multiple Products: Pricing of Products with Interrelated Demands One important reason that firms produce more than one product is to make fuller use of their plant and production capacities. Instead of producing a single product at the point where $MR=MC$ and be left with great deal of idle capacity, the firm will introduce new products(or different varieties of existing products),in the order of their profitability ,until the marginal revenue of the least profitable product produced equals its marginal cost to the firm. The quantity produced of the more profitable products is then determined by the point at which their marginal revenue equals the marginal cost of the last unit of the least profitable product produced by the firm .The price of each product is then determined on its respective demand curve. Pricing of Products with Interrelated Production Products can be jointly produced in fixed or variable proportions.(Example: Sheep Raising yielding woodland meat and Petroleum Refining which results in oils, gas etc. respectively) When products are jointly produced in fixed proportions ,they should be thought of as a single production package. There is then no rational way of allocating the cost of producing the package to the individual products in the package. On the other hand ,the jointly produced products may have independent demands and marginal revenues. The best level of output of the joint product is then determined at the point where the vertical summation of the marginal revenues of the various jointly produced products equals the single marginal cost of producing the entire product package.

- Price Skimming
 - The first firm to introduce a product may have a temporary monopoly and may be able to charge high prices and obtain high profits until competition enters

- Penetration Pricing
 - Selling at a low price in order to obtain market share
- Prestige Pricing
 - Demand for a product may be higher at a higher price because of the prestige that ownership bestows on the owner.
- Psychological Pricing
 - Demand for a product may be quite inelastic over a certain range but will become rather elastic at one specific higher or lower price.

And explain other types of practices.

(ii)

- **GDP, or Gross Domestic Product** is calculated either by measuring all income earned within a country, or by measuring all expenditures within the country, which should approximately be the same.
- **GNP, or Gross National Product** uses GDP, but adds income from foreign sources, less income paid to foreign citizens and entities.

GNP can be either higher or lower than GDP, depending on whether or not a country has a positive or negative result from net foreign inflows and outgo. Though GNP is still calculated, the United States shifted to GDP as its primary economic measure in 1991, in part because most countries in the world use GDP to measure the size and direction of their economies. As a result, GNP numbers are less common than GDP figures.

Both GDP and GNP are complicated, and best summarized in a side-by-side comparison: GDP/GNP Complications in Calculating

If you're getting the sense that calculating either GDP or GNP is no small task, you're absolutely right. It's tough enough to accurately measure the true income of a household or a company, but doing so for an entire country is downright staggering. There are complications beyond simply amassing the data necessary to come up with an accurate figure.

GDP and GNP are calculated based on very specific time periods. But not all the information is available at the same time. This forces the Bureau of Labour Statistics (the agency that reports official GDP in the US) to rely on estimates, resulting in revisions after the fact.

Unreported income is another flaw, and one that is not easily remedied. Individuals may under-report income to minimize income tax liability, which will understate the GDP. This can be a problem between countries as well, since under-reporting of income is more prevalent in some countries than in others.

Still another problem — given that GDP and GNP is often used to measure economic strength from one country to another — is that reporting tends to be less reliable in some countries than in others. This is especially likely in less developed countries, leading to under-estimates of true national economic output.

