Economic Analysis for
BUSINESS DECISIONS

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ECONOMIC ANALYSIS FOR BUSINESS DECISIONS

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Dedication

In the memory of my beloved
babujee late ***Mr. S. Prasad*** *who left me*
in the mid of writing this book.

Prof. Dhirendra Kumar

Preface

This book has been written with the objective of providing a comprehensive and standard texts for the postgraduate students of economics by making the concepts very simple and lucid. This textbook like many others have been written under the conviction that it is possible to improve upon the textbooks that are already in hand. This book covers the entire syllabus of Economic Analysis for Business Decisions of University of Pune and of Managerial Economics at RTM Nagpur University. Besides, this book is based on UGC curriculum for postgraduate students of management. For the sake of simplicity, the book has been divided into two parts. Part I covers the concept of microeconomics and Part II introduces macroeconomics issues, basic concepts etc.

In writing the book, we have incurred great many debts. First of all, we would like to thank our students who inspired, in a way provoked by asking "Why don't you write a book?" We have not only greatly benefited but have also borrowed heavily from the writings of scholars on the subject. We owe an intellectual debt to them. We also gratefully, acknowledge and appreciate the contributions of our teachers. Finally, we like to thank the publishers for undertaking to publish this book.

Authors

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1.1 ECONOMICS: AN INTRODUCTION

Nowadays, everyone wants to pursue his or her self-interest. A producer wants to maximize his profits while a consumer's interest lies in maximizing his satisfaction from the purchase of goods and services. So overall in an economy collective interest is desirable wherein all the people in a country enjoy a good standard of living and thus social welfare is maximized. Promoting economic interest requires management of scarce resources or means. Everyone, whether a consumer or a producer has limited means but their needs and wants are unlimited relatively. As a consumer, I may not be having sufficient money to buy everything what I want and as a producer you may not be having sufficient capital to produce each and every thing. Thus, the resources are scarce in relation to their requirements. This requires making choices. A rupee cannot buy five things when the price of each product is ` 1. We have to choose the product which we would prefer to have by foregoing the rest four products. Choosing one alternative and not choosing others is a problem of choice. This is also called economic problem and requires judicious and rational decision as to how to utilize these scarce resources to get maximum satisfaction. The above concept can be understood with the help of few examples.

Example 1: This summer my friend's wife asked him to get one refrigerator as well as one AC. He started thinking but later found that he cannot buy both the products at the same time as money with him was limited. Thus any how he tried to convince his wife and later on, they bought only refrigerator foregoing AC. Thus, they have to make a rational choice.

Example 2: The employer of the firm will always like to get optimum productive use of his resources be it man, money and material. Any firm will like to have the appropriate amount of these scarce resources to avoid any misuse of resource. It will always try for production to the optimal level using these scarce resources by taking decisions as to what, how and for whom to produce?

Thus, Economics teaches us to make rational decisions regarding various problems faced by the economy due to scarce resources.

Definitions

The term economics comes from the ancient Greek word—*oikonomia*, "management of household, administration" from *oikos*, "house" + *nomos*, "custom" or "law", hence "rules of the house (hold)".

"Economics aims to explain how economies work and how economic agents interact. Economic analysis is applied throughout society, in business, finance and government, but also in crime, education, the family, health, law, politics, religion, social institutions, war, and science. The expanding domain of economics in social science has been described as economic imperialism." However, now we can discuss some formal definitions given by the economists over a period of time.

Adam Smith is considered to be the first to provide a formal definition of economics contained in his book, "*An Enquiry into the Nature and Causes of Wealth of Nation*" published in 1776. Because of this great contribution of Adam Smith, he is regarded as the father of economics. He defined economics as the science of wealth, that is, he regarded economics as the science that studies the production and consumption of wealth.

However, exaggerated emphasis on wealth is gone now and humanistic character of economics has come to be well recognized. The role of human resource in economics is higher than wealth. Alfred Marshal has defined economics not as a science of wealth but science of human welfare. According to Marshall, "Political economy or economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-beings".

Prof. Robbins criticized the definition given by Marshal as it was restricted towards material objects only. Many non-material things in human life satisfy human wants and therefore are paid for, i.e., services of doctor, lawyer and teachers are non-material. According to him, economics is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses. This definition seems to emphasize on three basic issues: ends, scarce means, and alternative applications.

Ends refer to wants. Wants are unlimited in nature. If one want is satisfied, another crops up. One is compelled to make choices. That is why economics is called a science of choice.

The term scarce is used here in relative sense. It is scarcity in relation to requirements. A commodity may exist in a small quantity but if nobody has any use for it, we shall not call it scarce in the economic sense.

Scarce means are capable of alternative uses of varying importance so that it becomes possible to select the various uses to which the commodity can be put.

Keynes brought a revolutionary change in the definition of economics. According to him, economics is the study of the management of scarce resources and of the various determinants of income and employment. He relates economics with economic stability by maintaining the level of aggregate demand in the system.

According to Prof Samuelson, "Economics is the study of how societies use scarce resources to produce valuable commodities and distribute them among different people". This definition gives two key ideas in economics that goods are scarce and the society must use its resources efficiently.

In recent years, economics is considered to be the theory of economic growth in context of under-developed economies.

Referring to various definitions given by the experts no definition covers the widening scope of this subject. No doubt, according to the authors, the definition given by Marshall is very well accepted but the definition of economics cannot be complete without considering the poor and underprivileged and ignoring the concerns of environment. So at present economics must be *defined in terms of proper* allocation of scarce resources and sustainable development with an aim to mitigate hunger and starvation and other miseries of life. More than this, time is also to be considered as one of the resource which always gets scarcer and every unit of output produced must be studied in context of time as a resource besides combination of other inputs.

1.2 ECONOMICS: A SOCIAL SCIENCE

There is a long debate as to whether economics is a social science or a pure general science or natural science. Science is generally defined as the sum total of all the basic human knowledge. It is characterized in terms of cause and effect relationships. Natural or Physical sciences studies the physical environment of men and their generalizations are universal. H2 + O2 will always make H2 O2 (hydrogen Peroxide) under same room temperature and pressure everywhere and everytime. Their chemical properties will remain same throughout the world. A reproductive cycle in a woman generally takes the nine months duration. A social science on the other hand, studies human beings and their interactions with the rest of the world. It studies human behavior which is unpredictable and differs from person to person and situation to situation. Even the same person may behave differently in same situation in different period of time. The laws of natural science are applicable with exceptions only in few cases but the social sciences contain exceptions and to prove a theory, we have to assume other factors to be constant.

Now based on the above discussion, the question is whether economics is physical science or social science. Economics is the study of human behavior which teaches you to make rational decision regarding use of scarce resources. Study of human behavior itself puts economics in the ambit of social sciences. Increase in price of onions or any product may affect its demand in a different way not only to different consumers but also to same consumers at different point of time. Impact of inflation will be adverse on different sets of income class. Fixed income earners will be adversely affected as compared to business class. Thus, the impact is not universal and same throughout. Human beings may react differently in same situation. No doubt economics involves the mathematical approach in dealing with various problems of demand and supply, yet it cannot be called pure science on account of its dynamism.

1.3 MICROECONOMICS AND MACROECONOMICS

An economic system can be visualized from both the angles: micro and macro perspective. The term micro and macro were coined and used by a Norwegian economist; Ragnar Frisch in 1933. Microeconomics studies the behavior of small individual factors or participants in an economy or of a small group. It studies the economic behavior of individual entities such as individual households, firm and industry etc. It talks about individual demand and supply. It tells us how millions of consumers and producers in an economy take decisions about the allocation of productive resources among the various goods and services. Thus, study of microeconomics help a great deal in individual decision making by maximizing resource utilization and providing tools for evaluating economic policies. Following are the principal theories which are vital components of microeconomics:

- Theory of demand and consumer behavior
- Theory of supply and producer behavior
- Production theories explaining how production responds to different combination of inputs both in the short run and the long run.
- Theory of price determination explaining how prices are determined in different types of markets.
- Theory of factor pricing which explains the concept of wages, rent, interest and profit.

Its study has certain limitations also as it deals with individual perspective and not the aggregate economy. What is applicable to an individual may not be true for the whole economy. Wage cutting may help a particular employer or firm but if all firms in an industry cut the wages, it may lead to reduction in effective demand which may lead to contraction of output and income. The theories of microeconomics are always based on certain assumptions. It cannot give an idea about the functioning of the economy as a whole as one particular industry may be thriving at a time when the overall economy is contracting.

Macroeconomics on the other hand is the study of the total or aggregate level of output, income, employment, consumption, investment, and prices for the economy as a whole. It studies the aggregate demand for all goods and services in the economy and the overall level of output in the economy called aggregate supply. It also studies the equilibrium between aggregate demand and supply popularly known as equilibrium level of national income and employment. It explains the theory of income and employment to explain economy wide consumption and investment, the theory of general price level and inflation. Its study is helpful in the overall formulation and economic policies by the government. Following are the important theories of macroeconomics:

- Theory of income and employment
- Theory of general price level and inflation
- Theory of economic growth and development
- Theory of foreign trade

The important limitation of macroeconomics study is its excessive generalization from the individual experience to the system as a whole. What is true of an individual component may not be true of the aggregate. Saving may be good at the individual level but if all the population starts saving more and consuming less, then the overall aggregate demand may reduce and economy may contract. There is nothing wrong in individual withdrawing deposits from the bank, but if all the people rush to withdraw their deposits at the same time, there will be bank run. All the macroeconomic trends do not have a similar influence on all economic fields. The increase in price level adversely affects the poor and fixed income earners than the business class.

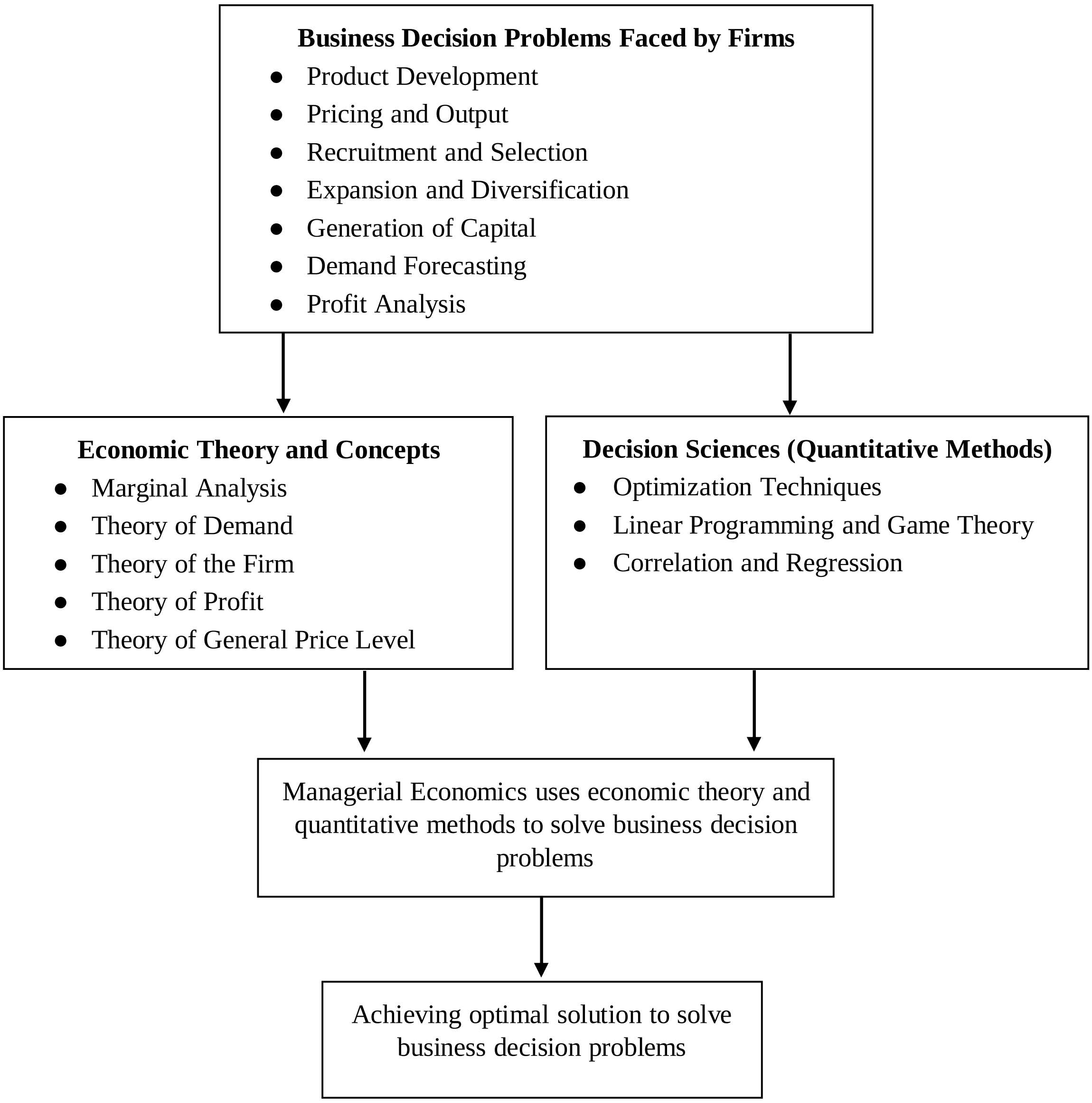
The differences between micro and macro concepts are relative in nature. Demand of a country may come under the ambit of macroeconomics when seen from an economy perspective but when seen from the world demand, it may be micro in nature. Neither of the two approaches can effectively work in isolation. What is true of an individual unit may not be always true of the whole economy and what is true of the whole, may not be always true about individual unit. It is, therefore, necessary to integrate both the concepts considering their interdependence. Theory of profit though a theory of microeconomics depend to a large extent on aggregate demand, the total investment and the general level of the prices. Similarly, the macroeconomic theory of propensity to consume depends upon individual propensity to consume. Thus, though the subject matter of both micro and macro differ but micro always serves as the base of macro study.

1.4 MANAGERIAL ECONOMICS: AN INTRODUCTION

Nowadays, a number of problems are faced by firms right from production to pricing of the products. These problems may also pertain to costs, forecasting future market, human resource management, profits and so on. The success or failure of a business is contingent upon the decisions taken by the managers. Increasing complexity in the business world due to integration of economies has posed greater challenges for managers. Any decision pertaining to the business has to be taken considering the global world. This complex environment is coupled with a global market where input and product prices have a propensity to fluctuate and remain volatile. These problems can only be solved by the application of economic theory and methodology to business decision making. These decisions are made from a number of alternatives which demand a thorough knowledge of aspects of economic theory and its tools of analysis. Thus Managerial economics, used synonymously with business economics, is a branch of economics that deals with the application of microeconomic analysis to decision making techniques of businesses and management. The definitions given by various scholars reveal the various nature and aspects of managerial economics.

- **McNair and Meriam:** “Managerial economics consists of the use of economic modes of thought to analyze business situations”.
- **Spencer and Siegelman:** Managerial economics is “the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management”.
- **Haynes, Mote and Paul:** “Managerial economics refers to those aspects of economics and its tools of analysis most relevant to the firm’s decision making process”.
- **D.C. Hayue:** “Managerial Economics is a fundamental academic subject which seeks to understand and to analyze the problems of business decision making.”
- **Brigham and Pappas:** “Managerial Economics is the application of theory and methodology to business administration practice”.

Thus, all the above definitions concentrated on application of economic theory to business economic problems. But any definition of managerial economics without its focus to solve societal problems will be incomplete. The worth of studying any subject will be only when it contributes to human and social welfare. Besides the above definitions emphasizes less on macroeconomic theory and more on microeconomic theory. The interdependency of both these micro and macro concepts demands blend of both the micro and macro concepts in solving business problems. The study of macroeconomics is helpful because firms do not work in vacuum. The level of overall economic activity, national income and employment, monetary and fiscal policy, the changes in the price level greatly affect the decisions of the firms. The figure given below illustrates the process of achieving optimal solution to business decision problems using economic theory and quantitative methods.



1.5 NATURE OF MANAGERIAL ECONOMICS

As discussed above, the nature or characteristics of business firms revolve around the goal or objectives which it wants to achieve and also upon the economic system in which it operates. A firm may not behave the same way in different economic systems. The following are the characteristics of managerial economics:

- **Microeconomic in Nature:** Managerial economics is microeconomic in character as it studies the problems of an individual firm or an individual industry. It aids the management in forecasting and evaluating the trends of the market. The various concepts of managerial economics like elasticity of demand, consumer theory, pricing policies, theory of production are all the subject matter of microeconomics.
- **Positive and Normative Science:** The traditional economic theory has developed along two lines: normative and positive. A positive science only explains what was, what is and what would be under the given set of circumstances. It focuses on describing the manner in which the economic system operates without emphasizing on how they should operate. All the positive statements are based on empirical verification. It does not pass any value judgments. For instance, consumers tend to maximize their satisfaction and producers tends to maximize their profits are all positive statements. The normative science on the other hand tell us what ought to be, i.e., right or wrong of a thing. Its objective is to determine the norms or moral judgments. When we are trying to find a solution to solve the problems of poverty by skill development of the poor is a subject matter of normative science.

  The emphasis in Managerial economics is on normative theory. Managerial economics cannot be dissociated from ethics. It seeks to establish rules which help business firms attain their goals, which indeed is also the essence of the word normative. But if the firms are to establish valid decision rules, they must thoroughly understand their environment which requires the study of positive or descriptive theory. Professor Robbins emphasized the positive aspects of science but Marshall and Pigou have considered the ethical aspects of science which obviously are normative. Thus, Managerial economics combines the essentials of the normative and positive economic theory, the emphasis being more on the former than the latter. According to Samuelson and Nordhaus, (2000), positive and normative economics may be interpreted as under. “Positive economics deals with questions such as: Why do doctors earn more than wardens? Does free trade raise or lower wages for most Americans? …Although these are difficult questions to answer, they can all be resolved by reference to analysis and empirical evidence. That puts them in the realm of positive economics”.

  “Normative economics involves ethical precepts and norms of fairness. Should poor people be required to work if they are to get government assistance? Should employment be raised to ensure that price inflation does not become too rapid?… There is no right or wrong answers to these questions because they involve ethics and values rather than facts. They can be resolved only by political debate and decisions, not by economic analysis alone”.
- **Pragmatic Approach:** Managerial economics approaches the subject of its study on a pragmatic level. It deals with practical concepts rather than theory. It tries to solve the managerial problems by analyzing the business environment and providing solutions to the problems faced by individual firms.

- **Uses Concepts of Macroeconomics:** A firms has to operate within the macro setting of a given economy. A growing economy with rising income levels provides greater opportunities for the firms. Managerial economics takes the help of macroeconomics to understand the external conditions such as business cycle, national income and economic policies of Government etc.
- **Prescriptive:** Managerial economics is more prescriptive than descriptive. 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.
- **Art and Science:** As mentioned earlier also that it always questioned that whether economics is science or art. A subject is considered science if it is a systematized body of knowledge which studies the relation between cause and effect and it is capable of measurement. If we analyze economics we can also find some of the features like law of demand which explains the cause and effect relationship between price and quantity demanded. It also uses quantitative techniques as and when required as in case of demand estimation and forecasting. But economics cannot be called a pure science as there is lack of uniformity about a particular event due to unpredictable nature of human beings. It cannot afford to ignore the social aspect of discipline. Art is nothing but practice of knowledge. The various concepts of economics like production, consumption, public finance provide practical solutions to various economic problems. Thus Managerial economics has attributes of both science and art. Thus it will be appropriate to consider Managerial economics to be a social science.
- **Multidisciplinary Approach:** Managerial economics makes best use of mathematics, statistics and operation research. The concepts of accounting, finance, marketing, production, and personnel etc., are used in managerial decision making. The importance of the subject is very much important to the scholars of political science and sociologists also.
- **Basis for Business Decision Making:** Finally, managerial economics serve as the basis for decision making also. It applies the economic concepts along with quantitative tools to solve complex issues related to business.

1.6 SCOPE OF MANAGERIAL ECONOMICS

The scope of managerial economics is very vast and there is not even a single thing which is not related with the subject. Its multidisciplinary nature has even increased its scope. Its scope has touched even the poorest of poor to the richest of rich. The subject has involved within its ambit various economic agents: firms, households, government, etc., and their economic activities. In a nutshell, the scope of the subject includes the following:

- **Provides Solution for Basic Economic Problem:** It helps to solve the basic problem of meeting unlimited demands with limited means. It aims to make best possible use of whatever human and material resources are at its disposal.
- **Theory of Demand:** Demand theory relates to the study of consumer behavior. It addresses questions as to what incites a consumer to buy a particular product. It emphasizes on the various determinants of demand as price, income, population, preferences, promotion and so on. Analysis of demand is also done to estimate and forecast demand because an estimate of

future sales is a primer for preparing production schedule and employing productive resources. Demand forecasts serves as a guide to the management for maintaining its market share in competition with its rivals, thereby securing its profit.

- **Production and Cost Analysis:** Production function shows the relationship between the quantity of a good/service produced (output) and the factors or resources (inputs) used. The inputs employed for producing these goods and services are called factors of production. Every firm wants to produce to the optimal level by least combination of inputs. The analysis of costs of production need to be done in order to achieve maximum output. The law of variable proportion influences the behavior of production costs in the short run and return to scale in the long run. Production theory facilitates in determining the size of firm and the level of production. It elucidates the relationship between average and marginal costs and production. It highlights how a change in production can bring about a parallel change in average and marginal costs. The main topics discussed under cost and production analysis are cost concepts, cost-output relationship, economies and diseconomies of scale and cost control.
- **Price and Output Relationship:** A firm's income and profit depend mainly on the pricing decisions. The pricing decision need to be taken considering the nature of the market in which the firm operates. The overall determination of price and outputs of various products depend upon the type of market structure in which they are produced, sold and purchased.
- **Profit Analysis:** Each and every business firms are tended for earning profit; it is profit which provides the chief measure of success of a firm in the long period. Profits are the reward for uncertainty and risk taking. Whatever may be the objective of the firm, no firm would continue to operate if it does not generate profits. A successful business manager is one who can form more or less correct estimates of costs and revenues at different levels of output. Break-even analysis is one of the important tool to study the relationship between total cost and total revenue and find out total profits and losses over the entire range of output.
- **Capital Budgeting:** A capital budgeting decision may be defined as the firm's decision to invest its current funds most efficiently in the long term assets in anticipation of future benefits. Capital Budgeting decisions are generally taken based on Net Present Value (NPV), Internal Rate of Return (IRR), Profitability Index (PI) and Payback Period. Investment decisions incur huge costs and are irreversible. So, decisions should be taken judiciously.
- **Environmental Factors:** Managerial economics also includes some aspects of macroeconomics. These relate to social and political environment in which a business and industrial firm has to operate. This is governed by the factors like the type of economic system in the country, its trade and industrial policy, labor laws, monetary and fiscal policy.
- **Social Welfare:** The scope of any subject of academia will be incomplete if it ignores the social welfare. Managerial economics by trying to fulfill the self-interests of consumers and producers tries to promote social welfare.

Thus, managerial economics comprises both micro and macroeconomic theories. The subject matter of managerial economics consists of all those economic concepts, theories and tools of analysis which can be used to analyze the business environment and to find out solution to practical business problems.

1.7 SIGNIFICANCE OF MANAGERIAL ECONOMICS

In this complex business world, a manager has to perform various functions. He has to take decisions on many fronts right from the product development to product selling. Economics becomes the foundation of all the rules and laws of governance of businesses. Economics contributes to the managers in the same way as biology to medical professionals and physics to engineers. Managers are always responsible for achieving the objective of the firm to the maximum possible extent with the limited resources at their disposal. Resources like man, money and material are limited. So, in the absence of unlimited resources, it is the responsibility of the management to optimize the use of these resources. Therefore, the application of economic theory becomes very much important for them. According to Baumol, "Economic theory comprises a founding pillar of business analysis - 'a set of analytical methods', which may not be applied directly to specific business problems, but they do enhance the analytical capabilities of the business analyst". Spencer and Siegelman have described the importance of managerial economics in a business and industrial enterprise as follows:

1. **Accommodating Traditional Theoretical Concepts to the Actual Business Behavior and Conditions:** Managerial economics integrates tools, techniques, models and theories of traditional economics with actual business practices and with the environment in which a firm has to operate.
2. **Estimating Economic Relationships:** Managerial economics estimates economic relationships between different business factors such as income, elasticity of demand, cost volume, profit analysis, etc.
3. **Predicting Relevant Economic Quantities:** Managerial economics assists the management in predicting various economic quantities such as cost, profit, demand, capital, production, price, etc. As a business manager has to function in an environment of uncertainty, it is imperative to anticipate the future working environment in terms of the said quantities.
4. **Understanding Significant External Forces:** The management has to identify all the important factors that influence a firm. These factors can broadly be divided into two categories: external and internal. A firm does not have control on the external forces like business cycle; national income, taxation and industrial policy etc. The internal factors like the company's R&D, internal stakeholders, funds are within the control of the firm. Knowledge of all these factors helps the management in making rational decisions.
5. **Basis of Business Policies:** Managerial economics is the foundation of business plans and policies. Business policies are prepared based on studies and findings of managerial economics, which cautions the management against potential disturbances in national as well as international economy. The disturbances in the international market carry both challenges as well as opportunity for the business managers. The tools and techniques of economics can be of great help in meeting the challenges and grabbing the opportunities ahead of the competitors.

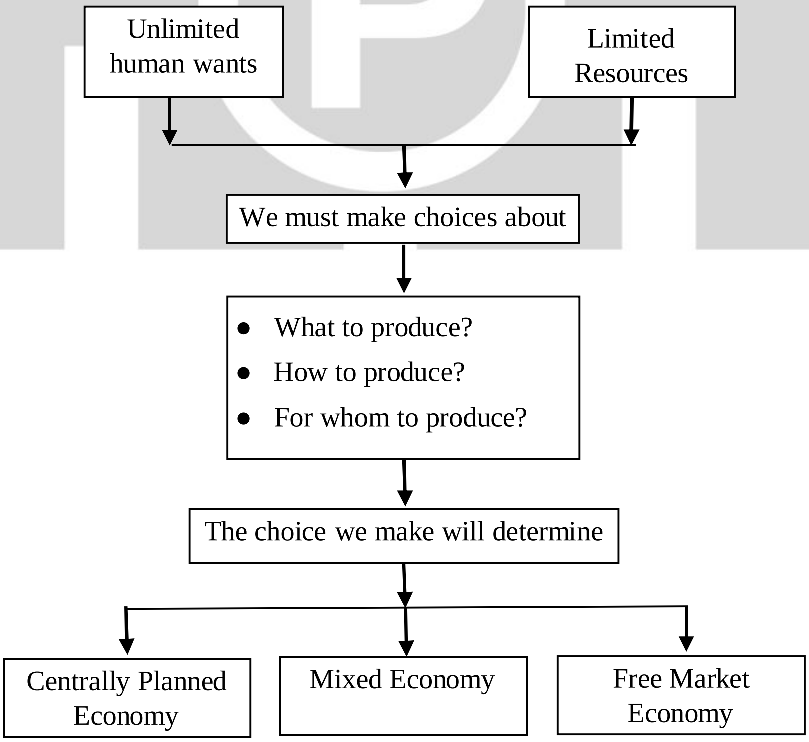
Thus, the significance of managerial economics can be of great help in taking decisions related to demand estimation and forecasting, price and output decision, technology, investment, production, etc. It also helps in understanding the macro variables like rate of inflation, RBI's policy towards interest rate, fiscal policy of the government, Exim policy which is of great importance in making the business policies of a particular firm.

1.8 BASIC ECONOMIC PROBLEMS

Think for a while…

- Why has India’s BOP been in deficits?
- What if everyone in the world wanted the same thing?
- Can absolutely everything, everyone wanted be produced?
- Are there enough materials, labor, machinery, factories and other resources in the world to provide all the things that people want?
- As the global population increases, what will happen to our needs and wants?
- Resources are so scarce in some countries that even the basic needs of the people cannot be met.
- Why in a country like India, there is always the problem of unemployment and price rise?

So, from all these we can say that the basic economic problem is that resources are scarce and wants are unlimited. It means that because of scarcity of resources and unlimited needs and wants we must all make choices about how best to use them. This involves choosing between alternative uses - what goods and services to produce and therefore, which needs and wants to be satisfied. Any resources that are not scarce are called free goods. The air that we breathe seems without limit and so is considered to be a free good. However, with increasing pollution in the world, fresh clean air may be scarce.



So, while allocating these scarce resources, the above three questions should be kept in mind so as to decide how best to use scarce resources to satisfy as many needs (something essential to survival like food, water, clothing, etc.) and wants (something you like to have but is not essential to survival like cars, mobile phones, etc.) as possible. If resources will not be allocated properly, then it will lead to unstability in the economic system by increasing the level of poverty, unemployment and price rise etc.

An economic system in a country is determined on the basis of choices you make regarding what, how and for whom to produce? In centrally planned economy all the economic decisions are taken by the government. The government decides what and how to produce and also how to allocate? In a Free market economy, market decides what and how to produce depending upon the forces of demand and supply. In the mixed form of economy some goods are produced by the free market while others are produced by the state.

1.9 OBJECTIVES/THEORIES OF THE FIRM

A firm is an important economic agent which helps in initiating business activities employing various factors of production. It is the smallest unit of decision making on the side of production and supply. The firm purchases all the resources including factors of production (land, labor, and capital) in order to transform into goods and services for sale. The various objectives of the firm are as follows:

- **Profit Maximization:** Originally the theory of the firm was based on the assumption that the goal or objective of the firm was to maximize the current or short-term profits. Profit maximization means that a firm either produces a maximum output for a given amount of input or uses a minimum input for producing a given output. Profit is the difference between the total revenue and total costs. The firm's owners and managers are assumed to work efficiently to maximize the short run profits. At present the emphasis on profits has been broadened to encompass uncertainty and time value of money. Some firms even sacrifice their short run profits for the sake of long-term profits by increasing the expenditures on R&D and new capital equipment. Thus, the concept of profit maximization does not consider the time value of money as it does not make any distinction between returns received in different time periods.
- **Value or Wealth Maximization:** This theory assumes that the primary objective of the firm is to maximize the value of shareholder's wealth. The value of the firm is the present value of the firm's expected future net cash flows. The present value of the expected profits or cash inflows is discounted back to the present at an appropriate interest rate, i.e., discounted rate of interest. The discounted rate of interest is determined based on the risk and uncertainty faced by the firm and conditions prevailing in the financial market regarding interest.

  $P.V = F.V \div (1+r)^n$

  P.V. = Present value, r = discounted rate of interest, n = no. of years and F.V. = Future value

  From the shareholder's perspective, the wealth created by a company is reflected in the market value of the company's shares. Thus for them, increase in the market value of the shares will be sole objective of the firm.

This theory also has been criticized as being too much narrow and unrealistic. Willium Baumol put forward the concept of sales maximization wherein firms after attaining certain level of profits to satisfy shareholders try to maximize sales. Olliver Williumson and others have argued that modern firms try to maximize their utility rather than short run profits or value of the firm. Managers are more interested in maximizing their utility by increasing their salaries, fringe benefits, stock options, etc. This often results in Principal-Agent problem. Richard Cyert and James March following the work of Herbert Simon gave the view of satisficing. According to Simon, people make rational choices between options open to them and within prevailing constraints. He argued that decision makers can rarely obtain and evaluate all the information which could be relevant to the making of a decision. Instead, they work with limited and simplified knowledge, to reach acceptable, compromise choices (‘satisficing’), rather than pursue ‘maximizing’ or ‘optimizing’ strategies in which one particular objective is fully achieved. The adoption of satisficing model has been found useful in the theory of the firm and corporate behaviour. For example, to maximize its profits a firm needs complete information about its costs and revenues, which in practice is available only after the event. It means that due to lack of certain information firms may not achieve optimum result but they try to attain that extent which can be satisfactory. Thus, a satisficing strategy may not be optimal but near optimal.

1.10 PRINCIPAL-AGENT PROBLEMS

In an economy, any economic or business activity cannot be performed by an individual as he may not be having all the desired expertise. So, an economic actor (the principal) delegated authority to an agent to act on his behalf. In the era of globalization and fierce competition, employees are often hired because of their expertise. But they may not work in the best interest of the firm which will lead to the problem. One example can be that in pursuing any function assigned to him, he may show favoritism and unfair means ignoring the principal’s objectives. In theory the managers (agent) should act in the best interests of shareholders (principal); that is his decisions should lead to their wealth maximization.

An employee can respond to the agency problem by increasing the monitoring of employees who will require a significant investment of the employer’s time and resources. Clearly, monitoring is not a small task, and there is no special reason to believe that the principal will be the best person to supply the monitoring services. Someone else, a specialist whom we may call a “supervisor”, may be able to Provide the monitoring services more cheaply and/or more expertly than the principal herself. The result will be a three-level (at least) hierarchy, in which the principal attempts to induce a supervisor to act in the principal’s own best interests, as the supervisor is monitoring the agent. It may happen in this case that the supervisor and the agent can come together and make themselves better off at the cost of the Principal (the employer).

Nowaday’s economists have come out with incentive plans that would align the interests of employees with those of employers. The main way of doing this is to link employee compensation to the performance of the firm or a specific metric of that firm’s success or productivity. Infosys for the first time introduced granting of stock options to employees. These stock options are part of an employee’s compensation and they rise in value as the firm’s stock rises. A more direct way to deal with the agency problem is performance-based pay. Performance-based bonuses are a common form of this sort of pay system.

1.11 MEANING AND NATURE OF PROFITS

When a firm's revenue is greater than its costs, that firm earns a profit. When a firm's costs are greater than its revenue, that firm suffers a loss. What does profit and loss mean? Profit measures the return to risk when making an investment (i.e., committing resources to a particular market or industry). Entrepreneurs take risks for which they require an adequate expected rate of return. The higher the risk and the longer they expect to have to wait to earn a positive return, the greater the minimum required return that an entrepreneur is likely to demand. Profit embodies lucrative reward for the entrepreneur or capitalist who is able to combine labor, capital goods, and other inputs in such a way as to produce an output that consumers value highly than the value of all the inputs put together. Profits can be normal and supernormal when firms introduce continuous innovation in the products. It acts as an indicator to existing firms either to change the level of output, introduce innovative trends or leave the industry. It also encourages other firms to enter the particular industry.

Just as profits, reward producers for making things people want to buy at prices they are willing to pay, losses punish producers for producing things people do not want at a cost, consumers are not willing to cover. Losses are the market's way of punishing producers for wasting resources. Those who sustain losses long enough will grow tired of being slapped around by the invisible hand and will eventually remove themselves to somewhere they will cause no further damage. Let’s discuss with an example: After completing your MBA, you open one specialty restaurant in Pune famous for Punjabi dishes but due to use of mustard oil in your dishes, it was not liked by the public. The losses you will suffer will be the market way of telling that you have wasted mustard oil and other ingredients. So, you will be forced out of this market.

Profits for an economist may differ as compared to an accountant. Economic profit is derived by deducting explicit and implicit costs (opportunity cost) from total revenue of the firm while Accounting (Business) profit is derived merely by deducting explicit costs from total revenue.

Economic Profit = Total Revenue – (Explicit Cost + Implicit Cost)

Accounting Profit = Total Revenue – Explicit Cost

Explicit costs are those costs which are recorded in the book of accounts while the implicit costs refer to the opportunity costs of the resources provided by the owner themselves including capital and their entrepreneurial skills ability. This can be understood better with an example:

After completing your MBA, you decided to open one restaurant instead of a job offered to you by an MNC. Explicit costs will include all the direct and indirect expenses in running the restaurant which can be recorded in the book of accounts but implicit cost will be the opportunity cost of running the restaurant utilizing your entrepreneurial skill and ability by sacrificing the job in an MNC.

Theories of Profit

(i) Risk Bearing Theory of Profit: According to this theory, profits are reward of the entrepreneur for taking risks and uncertainty in a dynamic economy. Future is uncertain and so you do not know how the market will move in the next hour or next day. So, for entrepreneurs profit will be a reward for them as they are taking risks in uncertain future. Investors investing in any new enterprise will no doubt get a better return than investing in government bonds as they have taken more risks.

(ii) Frictional Theory of Profit: According to this theory, profits arise as a result of friction or disturbances in the long run market equilibrium. Economic shocks or disturbances are the result of uneven demand and supply and other cost conditions which cause disequilibrium. In India, the organized retail sector grabbed larger attention during the peak of 2003-07, but the same industry has to face a tough time after 2008-09, due to global slowdown affecting India forcing retailers like SHUBIKSHA to shut down. Thus according to this theory, economic profits exist for some time before new firms enter the industry and economic profits are brought down to zero. Leading firms earn only a normal return on investment. On the other hand, when firms enter losses, some firms will leave the industry which leads to higher prices and the elimination of losses and the remaining firms can earn normal profits.

(iii) Monopoly Theory of Profits: Some firms with monopoly power can restrict output and charge higher prices than under perfect competition thereby, earning a profit. Monopoly firms often own and control the entire supply by controlling even the raw materials needed for the production of that commodity. They discriminate on the basis of prices also amongst different consumers in different markets. Firms in the computer hardware often resort to this type of monopoly behavior.

(iv) Innovation Theory of Profit: The difference between any invention and innovation is on account of costs involved. Innovation does not depend totally on costs but on novelty in ideas and process of production which decreases the cost and increases the demand. Those who introduce innovation in the initial stage and get the patent rights can earn profit for a longer period of time. The present age is the age of innovation. Recently, Samsung launched first wrist watch cum mobile phone beating Apple Incorporation.

(v) Managerial Efficiency Theory of Profit: Profit to a larger extent depends upon the managerial efficiency of the individuals in firms. On account of managerial efficiency costs of production decreases and overall profit increases.

Profit in a Market Economy

Profits and losses ensure that in a market economy resources are allocated to their highest-valued uses by rewarding those who create wealth and by punishing those who destroy it. Contrast this with what would take place under a centralized system where there are no profits and losses. In a market economy, where the price of everything is decided by the consumer’s demand and supply, the producer needs to be customer-centric. Profit and loss in a market economy will always depend upon how much your product is accepted or not accepted by the consumers. Profits in free market no doubt depend upon the role of the government also, as polity drives the economy. The government passes the minimum legislation Acts and regulates the prices to meet the societal needs. Firms are expected to produce goods and services desired by the society as efficiently as possible increasing the quality and decreasing the price. This will result in higher revenues and higher profits. Prices and the profits falls if certain goods are not accepted by the society and producers have to switch over to goods and services where profitable opportunities are more.

1.12 ADAM SMITH’S CONCEPT OF INVISIBLE HAND

It is a term coined by economist Adam Smith in his 1776 book, “*An Inquiry into the Nature and Causes of the Wealth of Nations*”. In his book he states:

”Every individual necessarily labors to render the annual revenue of the society as great as he can. He generally neither intends to promote the public interest, nor knows how much he is promoting it ... He intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for society that it was no part of his intention. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good”.

In the above passage, Adam Smith has explained how an individual intends for his self-interest and in due course of time, other stakeholders of the society are also benefited. The concept of invisible hand is often assumed to work in free market economy in which consumers always go for the lowest price and the entrepreneurs go for the highest profit. The market decides the price of their commodities based on the demand and supply and in turn, economic welfare takes place while pursuing the interests of both consumers and producers. The reason for this is that self-interest drives actors to beneficial behavior. Efficient methods of production are adopted to maximize profits. Low prices are charged to maximize revenue through gain in market share by undercutting competitors. Investors invest in those industries mostly maximize returns, and withdraw capital from those less efficient in creating value.

Thus each of us, acting in our own self-interests, generates a demand for goods and services that compels others to deliver those goods and services in the most efficient manner, so that they may make a profit in doing so. In this process, resources are allocated in the most efficient manner as compared to command system of economy.

Example: Suppose that you took admission in a B-school with a motive to be placed with an MNC at high package. The B-school must have been set up with a motive to provide quality educational services and thus, to make profit. Thus, both of you being economic agents will try to achieve your self-interest. In due course of time, there will be many people who will be directly and indirectly be employed by your economic activity. Your main interest was not in creating employment but your own self-interest of getting placement or making profits. This way economic well-being of the society increases.

1.13 BASIC CONCEPTS RELATED TO TOOLS AND TECHNIQUES USED IN MANAGERIAL ECONOMICS

1. **The Concept of Opportunity Cost:** Each and every economic activity has an opportunity cost involved in it. Opportunity cost of anything is the cost of the next best alternative which is foregone or sacrificed. It refers to the cost of sacrificing or giving up an opportunity. It implies the income or benefit foregone because a certain course of action has been taken. This concept helps in selecting the best possible alternative from among various alternatives available to solve a particular problem. This concept helps in the best allocation of available resources. The examples given below will explain the concept better.

   Example 1: After doing your graduation, you are offered a job but sacrificing the job, you decided to pursue MBA. So, the opportunity cost of doing MBA will be the job which you sacrificed.

Example 2: After completing your MBA, suppose you are offered a job with an MNC. But you decide to start your own venture. So, here the opportunity cost of starting a new venture is the sacrifice which you have made by not working with an MNC.

Example 3: Suppose you have one crore rupees. You have two options either to deposit with a bank or to start your own business. You decided to start a new business. So, the opportunity cost of starting a new business is the sacrifice which you have made in the form of earning interest.

2. **Discounting Principle:** This principle is based on a famous quote "A bird in hand is worth two in the bush". The value of 100 rupees after one year would be less than 100 rupees today. Everybody will like to have 100 rupees today than a year after. The reason can be the uncertain future and the rate of interest on investment of 100 rupees. This principle is applied in case where firm's investment led to cash outflow at present but revenues/profits or cash inflows are only generated at a future date. Thus, it is necessary to discount the value of future cash inflows and compare it with cash outflows to determine the worth of that investment. The present value of the expected profits or cash inflows is discounted back to the present at an appropriate interest rate, i.e., discounted rate of interest. The discounted rate of interest is determined based on the risk and uncertainty faced by the firm and conditions prevailing in the financial market regarding interest.

   P.V = F.V ÷ (1 + r)n

   P.V. = Present value, r = Discounted rate of interest, n = No. of years and F.V. = Future value

3. **Time Perspective Principle:** This principle is widely applicable in all the major economic decisions, be it deciding the price, output, factors of production, advertisement, etc. Every economic decision has both long and short run consequences. A decision should take into account both the short and long run effects on revenues and costs and maintain a right balance between the long and short run perspectives. A decision may be profitable in the short run but it may have adverse repercussions in the long run. Even production function has both the short and long run perspective. A firm decision to give various discounts and offers during recession may be short-term motive to increase the sales which may not be continued in the long run when the economy recovers. Thus, a manager has to consider both the short and long run repercussions of his decisions while taking any decision.

4. **The Equi-marginal Principle:** The equi-marginal concept is generally studied with consumption theory under equi-marginal utility. The law states that a rational consumer distributes his expenditure in such a way that the marginal utility derived from each unit of expenditure on various goods and services is the same. Thus, as per the equi-marginal principle, a consumer should arrange his consumption in such a way that each unit of good being consumed bring the same marginal utility per rupee of expenditure. In such a situation, consumer will get maximum satisfaction or utility from his expenditure. So, if a product A costs twice as much as another product B, then purchase product B only when its marginal utility is twice the product A. This principle has been applied in case of allocation of resources between their alternative uses with a view to maximize profit. It suggests that available resources should be so allocated between the alternative uses so that marginal productivity from various activities are equal. It is also used in budgeting. The objective is

to allocate resources where they are most productive. It can be used for eliminating waste in useless activities. It can be applied in any discussion of budgeting. The management can accept investments with high rates of return so as to ensure optimum allocation of capital resources. It can also be applied in multiple product pricing.

5. **Optimization:** Managerial economics often aims at optimizing a given objective. The objective may be maximization of profit or minimization of time or minimization of cost. Decision making that involves the solving of maximization and minimization problems is called optimization. Optimization involves maximizing the profits with best combination of inputs that minimizes cost. Labor is optimally used when it produces maximum possible output along with other factors of production. Similarly, a machine is optimally utilized when it yields maximum possible output. The important techniques for optimization include marginal analysis, calculus, linear programming, etc. Marginal analysis is one of the important concepts in managerial economics in general and in optimization analysis in particular. According to marginal analysis, the firm maximizes profits when marginal revenue equals marginal cost. Another important optimization technique is differential calculus. When a change in the independent variable that is ΔX gets smaller and approaches zero, $\Delta Y/\Delta X$ is called the derivative dY/dX of the function with respect to X. Thus, $\frac{dy}{dx} = \lim_{x \to o} (\Delta Y / \Delta X)$. Thus, the derivative dY/dX is the slope of a function whether it is linear or non-linear and represents a change in the dependent variable due to a small change in the independent variable. The other techniques of optimization like total quality management, quality circles, Kaizen, six sigma, financial re-engineering can also be helpful.

   Consumers and managers often face constraints which limit the choice available to them for optimization. A firm may face constraints on account of lack of information; limitation on availability of raw materials, skilled labor and legal constraints. Financial manager always works within constraints of limited budget. The existence of such constraints puts limit on the decision makers to reach the optimization stage and firms instead of reaching the optimization stage reach the constrained optimization (near to optimization).

6. **Marginal and Incremental Principle:** Marginal analysis implies finding the impact of a unit change in one variable on the other. The term marginal, generally, refers to small changes. It refers to the net change in total output due to change in one unit of input. Marginal revenue is change in total revenue per unit change in output sold. Marginal cost refers to change in total costs per unit change in output produced. Marginal Product refers to change in total output due to change in one input of production ($Mp = \Delta TP/\Delta Q$).

   Incremental analysis differs from marginal analysis as it analyses the change in the firm's performance for a given managerial decision, whereas marginal analysis often is generated by a change in outputs or inputs. Thus, incremental concept is generalization of marginal concept. It refers to changes in cost and revenue due to a policy change. For example: expansion or diversification of business, buying new inputs or new machine, etc. Change in output or total costs due to change in process, product or investment is considered as incremental change. The concept of incremental cost can be understood with the example given below.

A unit manufacturing mobile set is buying the mobile guards from outside at ` 50 per set. Is it economical to make this item in the unit itself, and if so what will be the cost?

Mobile Guards

Direct material - ` 20    Direct labor- ` 16   Other expenses- `10

Increment cost - ` 46

Fixed overhead is ` 1000 but this is not charged to the guards as these expenses are expected to have been already recovered. The incremental cost of making mobile guards is therefore ` 46 per piece which is ` 4 lower than the market price. It would be advisable for the unit, therefore, to take the decision to manufacture this item.

Points to Remember

- Economics is the study of how societies use scarce resources to produce valuable commodities and distribute them among different people.
- Microeconomics studies the behavior of small individual factors or participants in an economy or of a small group. While Macroeconomics on the other hand is the study of the total or aggregate level of output, income, employment, consumption, investment and prices for the economy as a whole.
- Managerial Economics is a fundamental academic subject which seeks to understand and to analyze the problems of business decision making. It is basically micro in nature.
- Profits for an economist may differ as compared to an accountant. Economic profit is derived by deducting explicit and implicit costs (opportunity cost) from total revenue of the firm while Accounting (Business) Profit is derived merely by deducting explicit costs from total revenue.
- Economic Profit = Total Revenue – (Explicit Cost + Implicit Cost)
- Accounting Profit = Total Revenue – Explicit Cost
- The various tools and techniques used in managerial decision making are opportunity cost, discounting principle, equi-marginal utility, time perspective principle, optimization techniques, etc.