

Chapter

1

BASIC CONCEPTS AND PRINCIPLES

Chapter Objectives

1. Introduce key economic concepts like scarcity, rationality, equilibrium, time perspective and opportunity cost.
2. Know the basic difference between microeconomics and macroeconomics.
3. Analyse how decisions are made about what, how and for whom to produce.
4. Explain the concept of managerial economics and demonstrate its importance in managerial decision-making.
5. Discuss the scope of managerial economics and its relationship with various other disciplines and functional areas.

INTRODUCTION

"The purpose of studying economics is not to acquire a set of ready-made answers to economic questions, but to avoid being deceived by economists." **Joan Robinson**

This may be your first *expedition* into the realms of Managerial Economics and you may have very little idea as to what the subject is about, or to what areas it can be applied. You may be surprised to learn that even picking up this book to read involved a decision; you might have selected this book from among several other titles on the same subject. Also when you chose to open this text, you made a decision which implied foregoing a number of other options, such as going out with your friends, or listening to music, or surfing the Internet. What point are we trying to make here? We are actually trying to give you the first *feel* of Managerial Economics as a subject. This process of selecting any one option among several alternatives available, which may seem to be a simple decision to you, plays a central role in economic analysis. In a broader spectrum, this analysis can be applied to economic problems such as pricing, investment and inflation. But this is not the end of it! When applied to managerial decision-making, economic analysis can be applied to problems encountered by businesses, like management of resources, costs and profits. It would also affect you as a consumer! So be prepared to be surprised to find out how useful the knowledge of Managerial Economics is and how pervasive its applications are!

Before we introduce you to Managerial Economics and its nuances, we would briefly explain about the subject of Economics (of which Managerial Economics is a specialised branch) and the kinds of economic decisions that are relevant to any economy.

DEFINITION AND SCOPE OF ECONOMICS

Economics is the art of making the most of life.

GB Shaw

Economics is defined as a body of knowledge or study that discusses how a society tries to solve the human problems of unlimited wants and scarce resources.

The term *economics* comes from the Greek word *oikos* (house) and *nomos* (custom or law). Economics is often defined as a body of knowledge or study that discusses how a society tries to solve the human problems of unlimited wants and scarce resources. It is the scientific study of the choices made by individuals and societies with

regard to the alternative uses of scarce resources employed to satisfy wants. Adam Smith (1723–1790), hailed as the Father of Economics, saw economics as “.....*an enquiry into the nature and causes of the wealth of nations.*” Alfred Marshall (1842–1924) gave a comprehensive outline of the subject, defining it as “...*the study of mankind in the everyday business of life.*” Lionel Robbins (1898–1984) defined economics to be “*the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.*”

Economics is a social science, since it deals with the society as a whole and human behaviour in particular, and studies the production, distribution and consumption of goods and services.

There exists considerable debate as to whether economics is a science or an art. It has a theoretical aspect and is also an applied science in its practical aspects. However, we cannot regard economics as an exact science. Economics is an “art” as well, as it is a systematic body of knowledge; unlike science, it lays down precepts or specific solutions for specific problems.

It is, thus, a science in its methodology, and art in its application. So shall we finally consider it a science or an art? We should better consider economics as a *social science*, since it deals with the society as a whole and human behaviour in particular, and studies the production, distribution and consumption of goods and services. This point can be better summed up with the words of Keynes, “.....*the theory of Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps the possessor to draw correct conclusions.*”

BASIC ASSUMPTIONS

Economic theories are based on certain simplifying assumptions and economic laws are applicable subject to certain conditions, that is, they hold good only under a given set of assumptions. These assumptions are nothing but tools in the hands of economists to convert the complications to their own advantage and simplicity. Let us explore some of the basic assumptions of economic theory in this section.

Ceteris Paribus

Ceteris paribus is a Latin phrase, literally translated in English as “with other things (being) the same” or “all other things being equal.” The term is most often used in isolating description of a particular event from other potential environmental variables. This assumption is applied to all economic analysis to create an environment where causal relationship between two variables is to be studied. According to Marshall¹, “....the study of some group of tendencies is isolated by the assumption other things being equal: the existence of other tendencies is not denied, but their disturbing effect is neglected for a time. The more the issue is thus narrowed, the more exactly can it be handled: but also the less closely does it correspond to real life. Each exact and firm handling of a narrow issue, however; helps towards treating broader issues, in which that narrow issue is contained, more exactly than would otherwise have been possible.”

Ceteris paribus (Latin) literally translated in English means “with other things (being) the same” or “all other things being equal”.

Suppose we want to analyse the effect of the price of a commodity on its demand. Apart from price, there can be a host of other factors like income of the consumers, prices of other (related) commodities, tastes, etc. that may affect the demand for that commodity. If we assume that all the other factors are constant at a particular point of time, it would be easier to isolate the effect of price on the quantity demanded of the commodity. Thus, the task of analysis becomes much simpler. Summing up, we can say that the term “ceteris paribus” is used in economic analysis when the economist wants to focus on explaining the effect of changes in one (independent) variable on changes in another (dependent) variable, without having to worry about the possible effects of other independent variables on the dependent variable under examination.

Rationality

Economists make the assumption that people act rationally. This means that consumers and producers measure and compare the costs and benefits of a decision before going ahead. Examples are: whether eating at home is cheaper than going to a restaurant; whether the owner of a firm also acts as the manager of the firm; whether to train the existing workers or recruit new workers for the newly opened unit of the firm and so on. However, it may be more enjoyable to eat at the restaurant; the owner can employ a manager; training existing workers may be costlier than hiring trained workers and so on. Thus, *rationality* involves making a choice that gives the greatest benefit relative to cost. All the conventional economic theory rests on the assumption that both consumers and producers behave rationally; while firms aim at maximising profits and minimising costs, consumers aim at maximising utility and minimising sacrifice. Rationality in decision-making is a precondition for attaining optimality under the given constraints. It involves clarity of objective and feasibility of achieving that objective under given conditions.

Rationality implies that consumers and producers measure and compare the costs and benefits of a decision before going ahead.

¹ Marshall, A. (1920), *Principles of Economics*, Book V, Chapter V in paragraph V.V.10, 8th edition, Macmillan and Co. Ltd., London.

TYPES OF ECONOMIC ANALYSIS

Different approaches to the same problem may lead to different conclusions. Economic analysis can be divided into the following categories: 1. Micro and macro, 2. Positive and normative, 3. Short and long run, and 4. Partial and general equilibrium.

1. Micro and Macro

Microeconomics (*"micro"* meaning small) looks at the smaller picture of the economy and is the study of the behaviour of small economic units.

Initially, there was only one “economics”. The Great Depression of the 1930s saw the emergence of the area of macroeconomics and thereafter, the field of economics has been broadly ‘split’ into two distinct areas of study: microeconomics and macroeconomics. *Microeconomics* (*"micro"* meaning small) looks at the smaller picture of the economy and is the study of the behaviour of small economic units, such as that of an individual consumer, a seller (or a producer, or a firm), or a product. It focuses on the basic theories of supply and demand in individual markets (say of cars, food items, mobile phones, etc.), and deals with how individual businesses decide how much of something to produce and at what price to sell it, and how individual consumers decide on how much of something to buy. In other words, microeconomics analyses the market behaviour of individual consumers and firms, in an attempt to understand their decision-making processes.

Macroeconomics (*"macro"* meaning large) is that branch of economic analysis that deals with the study of aggregates.

Macroeconomics (*"macro"* meaning large) is that branch of economic analysis that deals with the study of aggregates. As opposed to microeconomics, in macro analysis we study the industry as a unit, *and not the firm*. In macroeconomics, we talk about aggregate demand and aggregate supply, national income, national capital formation, employment, inflation etc.

Microeconomics deals at the firm’s level and takes into consideration the decision-making power of individual units, whereas macroeconomics deals with the economy level and takes into consideration the impact of government policies on the aggregates like national income and employment.

However, micro and macro economics are not to be taken as substitutes of each other; rather they complement each other. To quote Paul Samuelson “...if you read one branch of economics carefully, but ignore the other, you will be half-educated”. We would be discussing more on this issue in our subsequent chapters of national income and beyond.

2. Positive and Normative

Positive statements are factual by nature; normative statements involve some degree of value judgment, and cannot be verified by empirical study or logic.

Before we explain *positive* and *normative analyses* in economics, we need to explain the meanings of positive and normative statements. Essentially positive statements are factual by nature, whose truth or falsehood can be verified by empirical study or logic. Normative statements, on the other hand, involve some degree of value judgment,

and cannot be verified by empirical study or logic. As an illustration, compare the following two seemingly similar statements:

1. *The distribution of income in India is unequal.*
2. *The distribution of income in India should be equal.*

The first statement is a positive one, while the second is a normative one. Normative statements often imply a recommendation, as in the above example, that income *should be* redistributed. For this reason, such statements often involve the words “ought” or “should”. Let us now move on to explain positive and normative economics.

Positive economics establishes a relationship between cause and effect; it analyses problems on the basis of facts. Stated in very simple terms, positive economics studies the world as it is and is as such devoid of (economic) value judgments. For example, a positive economic theory might describe the probable effect of an increase in price of petroleum on the price of cars, but it would not provide any instruction on what policy *should be* followed.

Positive economics establishes a relationship between cause and effect. It is “*what is*” in economic matters.

Human beings are inherently sensitive and emotional, and thus, normative aspects of human problems cannot be ignored altogether in any economic analysis. Normative economics is concerned with questions involving value judgments; it is that branch of economics that incorporates value judgments about what the economy *should be* like. It looks at the desirability of certain aspects of the economy, say inflation as better than deflation, redistribution of wealth in the economy, etc. It is “*what ought to be*” in economic matters, as opposed to “*what is*” in positive economics.

Normative economics is concerned with questions involving value judgments. It is “*what ought to be*” in economic matters.

3. Short Run and Long Run

The introduction of different periods of time in market analysis was an important contribution of Marshall to economic theory. He was the first economist who had defined periods in market as: market period (in which the goods produced for sale on the market are taken as given data and prices quickly adjust to clear markets, e.g., market for perishable goods); short period (in which industrial capacity is assumed to be given); long period (in which the stock of capital goods, such as equipments and machines, is not taken as given); very long period (in which technology, population, habits and other factors are not taken as given, but are allowed to vary).

Following Marshall’s depiction, we can define short run to be a time period not enough for consumers and producers to adjust completely to any new situation. In production decisions, short run is a period when it may not be possible to change all the inputs. In other words, when one refers to the short run, the analysis is focused on a planning period in which some input is fixed and others are variable. Thus, the manager has to select different levels of the variable input to combine with the fixed input, in order to optimise the level of production. Usually, it is capital that is fixed and labour that is variable in the short run.

Short run is a time period not enough for consumers and producers to adjust completely to any new situation.

The long run is a time period long enough for consumers and producers to adjust to any new situation. It is a “planning horizon” in which all inputs can be varied. Thus, in the long run, the managerial

A long run is a “planning horizon” in which consumers and producers can adjust to any new situation.

economist deals with decisions of whether to adjust capacity; whether to introduce a larger plant or continue with the existing one; whether to change product lines, and so on.

In terms of accounting or finance, a short run would be any time period less than a year, and long run may be five to six years, or even as high as 20 years. Though one cannot exactly define the length of short run and long run but at any given time, the managerial economist must be concerned with both short run and long run analyses since long run consists of many short runs. Ignoring either of the problems of optimising in the short run or in the long run may lead to dire consequences. We would be discussing more on these concepts in the chapters on production and cost.

4. Partial and General Equilibrium

Equilibrium is a state of balance that can occur in a model.

Before we explain the aspects of partial and general equilibrium, let us throw some light on what is equilibrium. *Equilibrium* generally refers to a state of balance that can occur in a model. Whenever there is any

disturbance, all systems tend to move towards equilibrium. The concept of an *economic equilibrium* is, however, fundamentally very complex. The standard example of an economic equilibrium is the balance between price and quantity of a commodity in a supply and demand model, in which the supply curve shows the various quantities supplied at a given price by profit maximising firms and demand curve shows the various quantities demanded at a given price by utility maximising consumers. The intersection of the supply and demand curves is the point that maximises both profit and utility.

Partial equilibrium analysis studies the internal outcome of any policy action in a single market only.

Let us now turn your attention towards the concept of *partial equilibrium*. Developed by Augustin Cournot (1801–1877) and Marshall, partial equilibrium analysis studies the internal outcome of any policy action in a single market only; this means that the effects

are examined only in the market(s) which is directly affected, and not on other markets. Thus, we refer to partial equilibrium analysis when a single firm or a single consumer is in equilibrium, whereas other firms or consumers in the industry may not be in equilibrium. Thus, if one particular firm in the Indian cement industry is in equilibrium, as per partial equilibrium analysis, other firms in the industry may not be in equilibrium.

General equilibrium analysis explains economic phenomena in an economy as a whole.

General equilibrium theory, on the other hand, is that branch of economics that seeks to explain economic phenomena like production, consumption and prices in *an economy as a whole*. Why do we need general equilibrium analysis after all? Wouldn’t partial equilibrium

have been sufficient? No. As we have explained, partial equilibrium analysis studies the internal outcome of any policy action in a single market only, following this, any decision regarding the price of one commodity would be taken in isolation from the prices of other commodities. This, however, is unrealistic! Under the general equilibrium framework, if the price of fuel goes up, the fares of public commuting vehicles would go up; this may put a pressure on firms to hike the conveyance allowance given to the workers. In sharp contrast to this, under partial equilibrium analysis, a petroleum company would hike the price of petrol without considering its possible effects on the prices of other commodities. General equilibrium analysis would propose that the equilibrium price of fuel cannot be determined in

isolation and would need to incorporate a host of several other variables. This is the crux of general equilibrium analysis, as it tries to give an understanding of the whole economy, by looking at the macro perspective. Hence, general equilibrium is the state in which all the industries in an economy are in equilibrium; as a corollary it is implied that all the firms in an industry are in equilibrium.

KINDS OF ECONOMIC DECISIONS

The fundamental problems faced by an economy have been summed up in this section.

What to Produce?

The first major economic decision of any economy relates to the type and the range of goods to be produced. Since resources are limited, one must choose between different alternative combinations of goods and services that may be produced. Allocation of resources between the different types of goods, example, consumer goods and capital goods, is another major concern to any economy. At firm level, this decision would involve review of market demand and availability of raw materials and technology. This can also be referred to as the problem of choice.

How to Produce?

Having decided on what to produce, the economy must determine the techniques of production to be used. This can also be viewed as the problem of efficiency; efficiency is maximised when the limited stock of resources yields the maximum possible volume of goods and services, or renders the maximum benefit to the society. We would discuss the concept of efficiency subsequently in detail.

Fundamental economic problems:

- What to produce?
- How to produce?
- For whom to produce?
- Are resources used economically?
- Are resources fully employed?
- Is the economy growing?

For Whom to Produce?

This means how the national product should be distributed. This is essentially the problem of distribution. Once the goods are produced, they need to be distributed among the various economic agents. In a market economy, such a distribution is done on the basis of “ability to pay” principle; this implies that those who have more in terms of wealth and income would have more of the commodities than those who have less. However, in a command economy such a distribution is done on the basis of “according to need” principle; this implies that people would be rewarded according to their needs and not their ability to pay.

Are Resources Used Economically?

In a world of scarcity, resources need to be efficiently employed. This is the problem of economic efficiency or welfare maximisation, dealt with by the branch of economics known as welfare economics, the purpose of which is to explain how a socially efficient allocation of resources can be identified and achieved. At this level, let us be contended with the idea that resources would be fully and efficiently employed if it is NOT possible to increase the output of one commodity without reducing the output of another commodity. We would also let you get a touch of this problem while discussing price and output determination under different market forms.

Reality Bites

What to Produce? The Coca Cola Way

Marc Mathieu, Senior VP Global Brand Marketing & Creative Excellence, The Coca Cola Company, in conversation with S. Mukherjee and S. Dobhai says that as a beverage company Coca Cola aims to offer all possible alternatives by spending lot of time in understanding consumer's lifestyle and needs. It recognises that there are moments when people want to be more focused on nutritional values and there are moments when one requires mental recharge; sometime one wants vitality and energy boost. Therefore, the company aims to cover and cater to these different needs through its beverage portfolio. The portfolio claims to offer an appropriate level of sweetness and functional benefits along with right packaging and communication.

Source: Economic Times, 9/01/2008.

Are Resources Fully Employed?

An economy must endeavour to achieve the fullest possible use of its available resources, as unemployment of resources is equivalent to economic waste. The economy should be so organised as to keep all factors of production (including labour) fully employed. Keynes defined full employment as a situation in which involuntary unemployment is reduced to the minimum possible level. Modern economists like Marshall are of opinion that full employment should be a goal of economic policy.

Is the Economy Growing?

Another problem of any economy is to make sure that it keeps expanding or developing with time, and that its productive capacity continues to increase, so that it maintains conditions of stability. An economy seeks to achieve economic growth mainly to improve the standards of living of its people, it is through economic growth that an economy can get more of everything, without having less of anything. There are three major sources of growth: growth of labour force, capital formation and technological progress. We would explain this concept further when we discuss Production Possibility Curves in this chapter.

MANAGERIAL ECONOMICS

Economic principles, theories and concepts have been used extensively for finding solutions to managerial situations, hence, several economists have identified a new branch of economics, regarded as Managerial Economics. This point onwards, we would introduce you to the subject matter of Managerial Economics and its various aspects.

Firms are essentially concerned with the conversion of available inputs into desirable output(s), with the help of suitable technology. The difference between revenue earned from selling the output produced and costs incurred out of inputs procured constitutes the profit of any firm. In order to earn (or maximise) profits and also to attain other objectives, managers of any firm need to make several choices, including choice of production techniques, quantity of output, number of workers and price at which the output is to be sold.

In all these cases, they need to weigh the alternatives available, in order to make the best choice. Such economic decision-making by managers and firms is actually the scope of managerial economics.

Identification of the different economic incentives (like profits and utility) that attract and influence basic economic agents (like firms and consumers) are the key topics for study and analysis in managerial (or business) economics.

The following definitions of the subject by eminent economists would throw further light on its nature and scope.

"Managerial economics refers to the application of economic theory and the tools of analysis of decision science to examine how an organisation can achieve its objectives most effectively." **Salvatore**

"Managerial economics is the study of allocation of the limited resources available to a firm or other unit of management among the various possible activities of that unit." **Henry and Haynes**

"Managerial economics applies economic theory and methods to business and administrative decision-making." **Pappas and Hirschey**

"Managerial economics is the application of economic principles and methodologies to the decision-making process within the firm or organisation." **Douglas**

"We define managerial economics as the integration of economic theory and methodology with analytical tools for applications to decision-making about the allocation of scarce resource in public and private institution." **Seo and Winger**

Managerial economics is a means to an end to managers in any business, in terms of finding the most efficient way of allocating scarce organisational resources and reaching stated objectives.

As such, managerial economics can be seen as a means to an end for managers in any business, in terms of finding the most efficient way of allocating scarce organisational resources and reaching stated objectives.

Managerial Economics: Micro as well as Macro Economics

You must be wondering as to whether it is microeconomics or macroeconomics that "influences" this subject! Managerial economics is *applied microeconomics* to a significant extent; though it draws extensively from macroeconomic theory as well. For example, it draws demand analysis, cost and production analysis, pricing and output decisions from microeconomics, whereas it also derives market intelligence from the knowledge of national income, inflation and stages of recession and expansion, which are subject matter of macroeconomics. Hence, it focuses on areas of *both* microeconomics and macroeconomics that are of the greatest importance and concern to the managers in any business organisation.

Managerial economics is applied microeconomics to a significant extent; though it is drawn extensively from macroeconomic theory as well.

Normative Bias of Managerial Economics

As we have seen in our earlier discussion, positive economics exposes us to *what is*, while normative economics gives value judgements on outcomes or phenomena, i.e., *what should be*, or *what ought to be*. Managerial Economics is often prescriptive, stating what firms should do, in order to reach certain objectives. In other words, managerial economics is said to have a normative bias. Let us see how.

Managerial economics has a normative bias stating what firms should do, in order to reach certain objectives.

Economic issues confronting managers would often involve value judgments. In managerial situations one has to take decisions which will affect an organisation's future, therefore, a manager cannot be simply content with being factual. Let us give an example to explain this. The manager of a soft drinks company

may be confronted with a choice of whether or not to advertise for the product. Would the manager go for advertising simply by following the rival companies? Or would the manager judge whether such advertising would have any impact on the consumers? Managerial economics decides on whether or not the probable outcome of a managerial decision is desirable, and whether or not the managers should pursue courses of action that would lead to such outcomes. Hence, it is basically normative in nature.

Decisions Resulting in Partial Equilibrium

Managerial economics deals with partial equilibrium analysis, with focus on equilibrium of a firm or *an industry*, not the economy.

You would appreciate that managerial economics primarily helps a firm in decision-making, therefore, decisions taken by any firm would relate to the equilibrium of that particular firm. Hence, the science of managerial economics basically deals with partial equilibrium analysis. Under this branch of economics, you would not learn about the equilibrium of the economy, but about *a* firm or *an* industry.



THINK OUT OF Box

Is microeconomics positive or normative?

ECONOMIC PRINCIPLES RELEVANT TO MANAGERIAL DECISIONS

It is by now clear that managerial economics deals with firms, more specifically with the environment in which firms operate, the decisions they take and the effects of such decisions on themselves and their stakeholders (like customers, competitors, employees and the society in which they operate). The key economic concepts and principles that constitute the broad framework of managerial economics are explained in the following sections: scarcity, opportunity cost, margin or increment and discounting principle.

Concept of Scarcity

Human wants are unlimited, but human capacity to satisfy such wants is limited.

are unlimited, but human capacity to satisfy such wants is limited. As shown in Figure 1.1, almost all desirable things are short in supply, compared to our needs. Similar situation prevails in any business firm: resources available to the firm are limited, and the managers of the firm need to optimally utilise them.

Any economic problem consists of making decisions regarding the ends to be pursued and the goods to be used for achievement of such ends.

The starting point of any economic analysis is the existence of human wants; human wants

Resources

Demand for Resources

Fig. 1.1 Problem of Scarcity

In view of the scarcity of resources and multiplicity of needs, the economic problem lies in making the best possible use of resources so as to get maximum satisfaction (from the viewpoint of consumers) or maximum output (from the viewpoint of producers or firms). Hence, any economic problem consists of making decisions regarding the ends to be pursued and the goods to be used for achievement of such ends.

Concept of Opportunity Cost

The managerial economist has to make rational choices in all aspects of business, since resources are scarce and wants are unlimited. This problem of choice makes it necessary to sacrifice some of the alternatives against the one selected. Individuals and firms make such decisions based on expecting greater benefits from one alternative over another. In other words, there is an *opportunity cost* involved in a choice.

Opportunity cost is the benefit forgone from the next best alternative that is not selected. Individuals or firms give up an opportunity(s) to use or enjoy something in order to select something else. Let us give examples to explain this “choice”. You may be working in your hometown and suppose you have got another job offer in a city away from your hometown. Now if you select the new offer, you would be foregoing the benefits of staying at home. This would be your opportunity cost of the new job. A firm may have to make a choice between buying new computers for its employees and installing a new server. If it opts to purchase the server, the alternative of buying computers is foregone and would be the opportunity cost of buying the server.

A firm may even have to make a choice between quantity and quality. It may commit itself to quality (and hence, remain restricted to a small customer base) by selling its product at high price (such a pricing is often regarded as market skimming pricing), or it may compromise on quality and lower the price in order to capture a larger market (such a pricing is often regarded as market penetration pricing). Let us see the opportunities foregone in each case. If the firm decides to go for the first option, it would be targeting the “classes”. This way the firm has to sacrifice the *opportunity* of getting control over a large segment of market; this becomes its opportunity cost of selling its product at a high price. On the other hand, if it opts for keeping the price low at the cost of quality, the firm would be targeting the “masses”, thus, sacrificing its image of delivering high quality product. This loss in image would be the opportunity cost of selling its product at a low price, against gaining of a larger customer base. Such situations may often put firms in an ethical dilemma.

The concept of opportunity cost has been explained further in the Cost and Revenue chapter. Another very important concept, namely that of production possibility curves, that bears close linkage with opportunity cost, is briefly introduced here and shall be discussed in detail in the chapter named Production Analysis.

The managerial economist has to make rational choices in all aspects of business by sacrificing some of the alternatives, since resources are scarce and wants are unlimited.

Opportunity cost is the benefit forgone from the next best alternative that is not selected.

Reality Bites

Masses over Classes

Reliance followed aggressive penetration strategy and came out with a low-cost model for its basic hand-set and services for rapid diffusion of its cellular services. Easy installment and low cost hand-set and penetration pricing strategy of Reliance and Tata Indicom have given needed boost to the cell-phone industry.

Source: Pandya, B. and Jayswal, M. (2007). *Materialism among Adolescent: Understanding Conceptual Framework and Imperatives for Marketers and Society for New Horizons*, International Marketing Conference on Marketing & Society, 8–10/04/2007, IIMK, <http://dspace.iimk.ac.in/bitstream/2259/318/1/673-701.pdf>.

Production Possibility Curve

Production Possibilities Curve is a graph that shows the different combinations of the quantities of two goods that can be produced (or consumed) in an economy, subject to limited availability of resources.

The Production Possibility Curve (PPC) or Production Possibility Frontier (PPF) or Transformation Curve is a graph that shows the different combinations of the quantities of two goods that can be produced (or consumed) in an economy at any point of time, subject to limited availability of resources. It also depicts the trade off between any two items produced (or consumed). In other words, PPC shows

that if we want to have more of one good, we must have less of the other good, due to limited availability of resources. This curve not only represents the opportunity cost concept, but it also actually *measures* opportunity cost by indicating the opportunity cost of increasing one item's production (or consumption) in terms of the units of the other forgone, which is nothing but the *slope* of the curve in absolute terms. Another use of PPC is that it highlights the significance of scarcity of resources and the need to use them judiciously.

Concept of Margin and Increment

The concept of marginality deals with a unit increase in cost or revenue or utility.

Marginal analysis is one of the cornerstones of economic theory. The concept of marginality deals with a unit increase in cost or revenue or utility. According to this concept, Marginal Cost (or Revenue or Utility) is the change in Total Cost (or Total Revenue or Total Utility) due to a unit change in output. In other words, Marginal Cost (or Marginal Revenue or Marginal Utility) is the Total Cost (or Total Revenue or Total Utility) of the last (or n^{th}) unit (of output). Thus, we may express Marginal Cost (MC) as:

$$MC_n = TC_n - TC_{n-1} \quad \dots(1)$$

where n is the number of units of output.

Applying calculus, we can alternatively define Marginal Cost as:

$$\text{Marginal Cost} = \frac{\text{Change in Total Cost}}{\text{Change in Total Output}} = \frac{dTC}{dQ} \quad \dots(2)$$

The concept of marginal cost and revenue has been discussed in details in the chapter on cost.

However, there is an inherent problem with the marginal concept and that is, in reality variables may not be subject to such unit change as explained above. In such cases, it is always more convenient to use the incremental concept, rather than the marginal concept. In other words, the incremental concept is applied usually when the changes are not necessarily in terms of a single unit, but in bulk. In such a case, the additional revenue earned is termed as "incremental revenue". If a decision to increase revenue also entails an increase in costs, then the incremental concept would tell whether the decision is right (if the increment in cost is less than incremental revenue) or wrong. For example, an increase in the sales of a firm due to introduction of online selling and additional costs of launching the online selling mechanism would be termed as "incremental revenue" and "incremental costs" respectively. If the former exceeds the latter, we can infer that the decision of introducing the online mechanism is right. You would know more about marginal principle in the chapter on cost.

Discounting Principle

The core of discounting principle is that a rupee in hand today is worth more than a rupee received tomorrow. In other words, it refers to time value of money, i.e., the fact that the value of money depreciates with time. One rationale of discounting is uncertainty about tomorrow, i.e., future. Even if there is no uncertainty, it is necessary to discount future rupee to make it equivalent to current day rupee.

Discounting principle refers to time value of money.

Why do businesses need to bother about discounting? This is because most decisions in business situations relate to outflow and inflow of money and resources that take place at different points of time. Most outflows normally occur in the current period, whereas inflows occur only in future, therefore, in order to take the right decision, it is necessary to “discount” future inflows to their present value level. The simple formula for discounting is:

$$\text{PVF} = \frac{1}{(1+r)^n} \quad \dots(3)$$

Businesses need to bother about discounting because most business decisions relate to outflow and inflow of money and resources that take place at different points of time.

where PVF = Present Value Factor, n = period (year, etc.) and r = rate of discount.

Let us summarise the underlying logic as follows:

- Money earned in a future period has different values in the current period.
- ₹1 now is worth ₹ $(1+r)$ in one year's time, if rate of interest is r .
- ₹1 in one year's time is worth ₹ $1/(1+r)$, or ₹0.91 now, if rate of interest r is 10%.
- ₹1 in two year's time is worth ₹ $1/(1+r)^2$, or ₹0.826 now, if rate of interest r is 10% and so on.

MANAGERIAL ECONOMICS AND FUNCTIONS OF MANAGEMENT

All firms consist of organisations that are divided structurally into different functional departments or units like: Production and Operations, Human Resource (HR), Marketing, Finance and Accounting, Systems (or IT) and Legal Applications.

All of these functional areas have to find the most efficient way of allocating scarce organisational resources and reaching their objectives in the context of the particular situation and tasks that they have to perform. Thus, the Production department may want to plan and schedule the level of output for the next quarter; the Human Resource department may want to plan how many people to hire in the next quarter and what should be offered as compensation; the Marketing department may want to know what price to charge for the newly launched product, and how much to spend on advertising; the Finance department may want to determine whether to build a new factory; the IT department may want to upgrade the server used in the organisation. The Legal unit must look into the conformity of all decisions of the firm with the requirements of and restrictions laid by the legal environment in which the business operates.

The principles of managerial economics help in understanding various managerial functions in a more coordinated manner.

Moreover, all these functional areas of an organisation are often found to be at conflict with each other. For example, the Production unit may opt for a costly machinery to attain economies of scale; which may require retrenchment of 10% of existing workers, additional training to some 15% employees along with some new recruitments. The Human Resource department may not find this acceptable

because they may have some other plans. The Marketing unit may plan for a lavish advertising campaign to achieve a sales target, whereas the IT unit may introduce a new proposition for internet-based selling of the product. On the other hand, the Finance department may be planning for cost cutting on all fronts. The managerial economist needs to understand the inter relationships among these units and the trade off twined with each decision, so that the overall objectives of the organisation are attained.

It might, thus, be noted that all the above decisions involve some kind of analysis; the concepts and principles of managerial economics would facilitate the process of evaluating such relationships and would, thus, help in making rational decisions across all major managerial functions. The concepts of opportunity cost and time value of money may be used to evaluate the new machine decision, or the principle of marginalism may be used to evaluate the advertising campaign, or the basic objective of the firm may be considered before taking any new decision. Accounting outcomes of any business, namely profit and loss statement of business can help the managerial economist in decision-making for the future. Thus, you find that knowledge of managerial economics is a fundamental tool for effective decision-making in business situations.

RELATION OF MANAGERIAL ECONOMICS WITH DECISION SCIENCES

Decision sciences provide the tools and techniques of analysis used in managerial economics. The theory of managerial economics largely utilises the tools of mathematics and econometrics. The most important aspects of decision sciences that are used in managerial economics include numerical and algebraic analysis, optimisation, statistical estimation and forecasting and game theory.

Let us elucidate this point with a simple example. If Q^d is the quantity demanded of a commodity by a firm that depends on factors like P (price of the commodity), P_y (price of a related commodity), Y (income of consumer), t (tastes of consumers), then the demand function can be written as:

$$Q^d = f(P, P_y, Y, t) \quad \dots(4)$$

This is an economic relationship, on collecting data of all these variables, we can estimate the empirical relationship between them, by applying econometric tools. Thereafter, the firm would be in a position to estimate changes in Q^d due to change in any (or all) of these variables at a particular point of time.

Statistics as a branch of study helps in empirical testing of any theory. Statistical methods like regression are also used to estimate relationships between economic variables and also to forecast their values. These techniques find wide applications in estimation of demand and cost functions. A managerial economist can project future sales of any product with the help of several research techniques. Other applications of forecasting techniques include forecasting changes in consumption pattern, change in disposable income, etc. You would know more on forecasting in a subsequent chapter.

These tools and techniques are introduced in the appropriate context later in the book, so that they can be immediately applied in order to understand their relevance, rather than being discussed in isolation in the very first chapter.

Figure 1.2 summarises relationships of managerial economics with all the different disciplines and functional areas of an organisation. As is evident from the figure, the concepts and theories grouped in the two branches of economics, micro and macro along with the tools of quantitative analysis assist in carrying out various managerial functions.

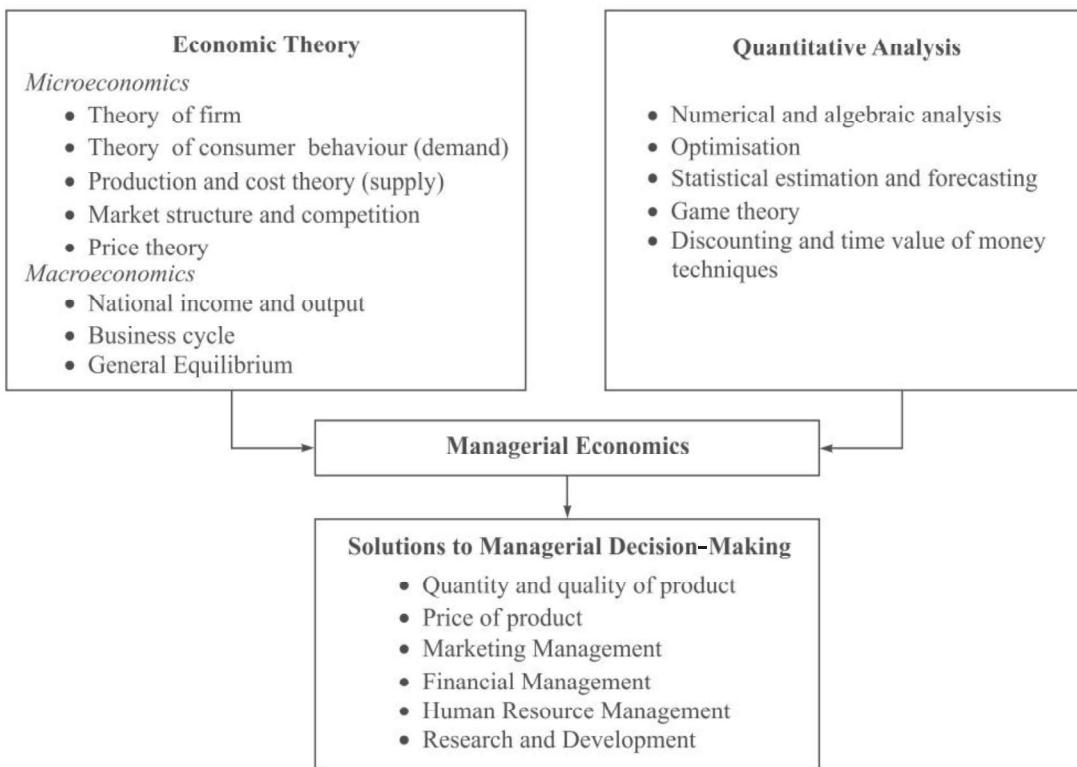


Fig. 1.2 Relationship of Managerial Economics with other Disciplines

SUMMARY

- ◆ Economics is a body of knowledge or study that discusses how a society tries to solve the human problems of unlimited wants and scarce resources. It also studies the choices made by individuals and societies in regard to the alternative uses of scarce resources which are employed to satisfy wants.
- ◆ Microeconomics is the study of the behaviour of small economic units, such as that of an individual consumer, a seller, a producer, a firm, or a product. Macroeconomics is that branch of economic analysis that deals with the study of aggregates.
- ◆ Positive economics studies the world as it is and as such avoids value judgments; normative economics is concerned with questions involving value judgements about what the economy should be like.
- ◆ Partial equilibrium analysis studies the internal outcome of any policy action in a single market only, while general equilibrium analysis seeks to explain economic phenomena for *an economy* as a whole.
- ◆ *Ceteris paribus* is a Latin phrase, literally translated as “with other things (being) the same”. The assumption of rationality means that consumers and firms measure and compare the costs and benefits of a decision before going ahead for that decision.