CHAPTER ONE
MANAGERIAL ECONOMICS: AN INTRODUCTION

1.1 Introduction

The business decision-making process has become increasingly complex due to ever growing complexity of the business world. Experiences acquired through traditional training are no longer sufficient to meet the managerial challenges. Thus, making an appropriate business decision requires a clear understanding of market condition, market fundamentals and the business environment.

As a result, the application of economic concepts, theories, logic and analytical tools in the assessment and prediction of market conditions and business environment have proved to be of great help in business decision making.

1.2 What is Managerial Economics?

Its name suggests its scope, content, the form and structure of the subject. Managerial economics constitutes economic theories and analytical tools that are widely applied to business decision. It is therefore first important to define what the word economics is?

Economics is a social science, it studies how nations make decision to allocate their resources between competing needs of society so that economic welfare of the society can be maximized. However, choice-making is not so simple as it looks because the economic work is very complex and most economic decisions have to be taken under the conditions of imperfect knowledge, risk uncertainly. Thus, economists in their endeavor to study the complex decision making process have developed analytical tools, techniques and economic theories with the aid of mathematics and statistics.

Managerial economics is the discipline that deals with the application of economic concepts, theories and methodologies to the practical problems of business in order to formulate rational managerial decisions for solving the problems. With regard to the problems, there are various problems related to the decision making process such as production decisions (what, how much, and how to produce). Exchange decisions (what price to charge and to whom to sell) and consumption decisions (what and how much to consume).

In other words, managerial economics can be defined as the integration of economics theory (application of economics theory) with business practice for the purpose of facilitating decision making and forward planning by management.

It uses analytical tools and a set of concepts to provide effective ways of thinking about decision problem. Thus, managerial economics is concerned with the application of economic concepts and economic analysis to the problem of formulating rational managerial decisions.

Managerial economics, therefore, is the study of how to direct scarce resources in the way that most efficiently achieves a managerial goal. It is a very broad discipline in that it describes methods useful for directing everything from the resources of a household to maximize household welfare to the resources of a firm to maximize profits.

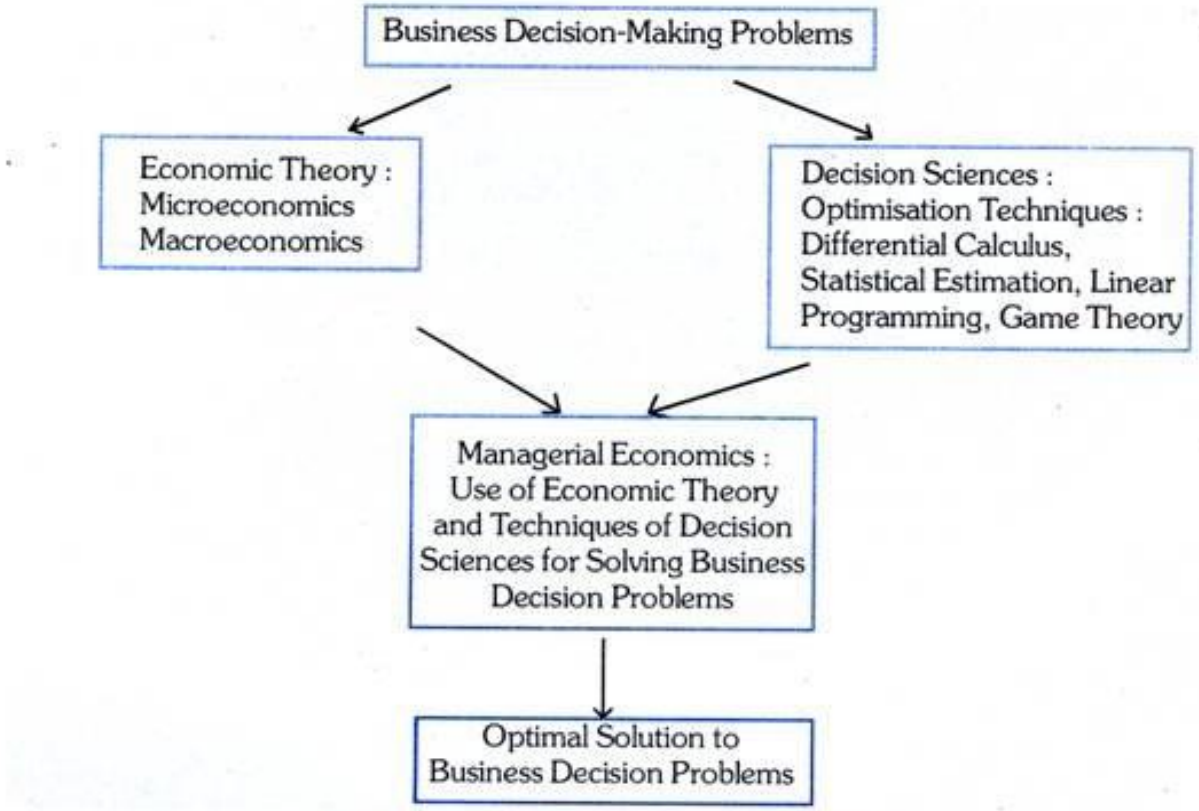


Fig. 1.1. *The Nature of Managerial Economics*

1.3 Importance of Managerial Economics for Managers

A manager is the people who organizes factors of production, introduce new ideas or product or process, make the business decisions and is held accountable for success or failure. Since managers in all types of enterprise face a common set of problems; these tools of managerial economics can be applied by all managers in profit seeking firms, in the public and not for profit sectors. In profit seeking firms the decision can be such as in relation to customers including pricing, and advertizing; suppliers; competitors or the internal working of the organization. And in the public and not-for-profit

sectors of the economy the same managerial economics principles is applied for example to allocate funds among different programs. Moreover, these principles exist whether a market is local or global.

The basic function of the managers of a business is to achieve the objective of the firm thus to maximum profit with the limited resources placed at their disposal. Bearing this function in mind, managerial economics helps managers in two ways.

- ✓ First, it provides a framework for evaluating whether resources are being allocated efficiently within the firm. It helps to identify the alternative means of achieving the given objectives, and then to select the alternative that accomplishes the objectives in the most resources efficient manner. For example, to determine if profit could be increased by substitute labor (variable cost) by technology (fixed cost).
- ✓ Second, these principles help managers to respond to various economic signals. For example, an increase in prices of the output would be the appropriate signal to increase an output.

1.4 Scope of Managerial Economics and the Business Environment

Business environment has reference to the broad characteristics of the economic system in which the business firm operates. It includes the overall economic policies, social factors and political atmosphere of the nation. Managerial economics, however, concerned with only the economic environment, and in particular with those economic factors which form the business climate. Micro economics focuses on individual economic behavior (individual household) and firms and their interaction in the market where resources are costly, example, how consumers respond to changes in prices and income, how business decide on employment and sales. On the other hand, macroeconomics deals with the aggregate economic variables or the economic system as a whole. It addresses question like the effect of changes in investment, government spending, employment, exchange rates, inflation unemployment, and import and export policies. It shows how fiscal monetary policies can keep the aggregate system working well.

Many macro economic theories are based on micro economic principles and concepts. Similarly micro economic behavior of many variables can be meaningfully explained only with reference to macro economics environment. *The scope of managerial economics to managerial issues is more limited to microeconomics.* It should be thought with respect to microeconomics focusing on those topics like demand, production, cost, pricing, and market structure.

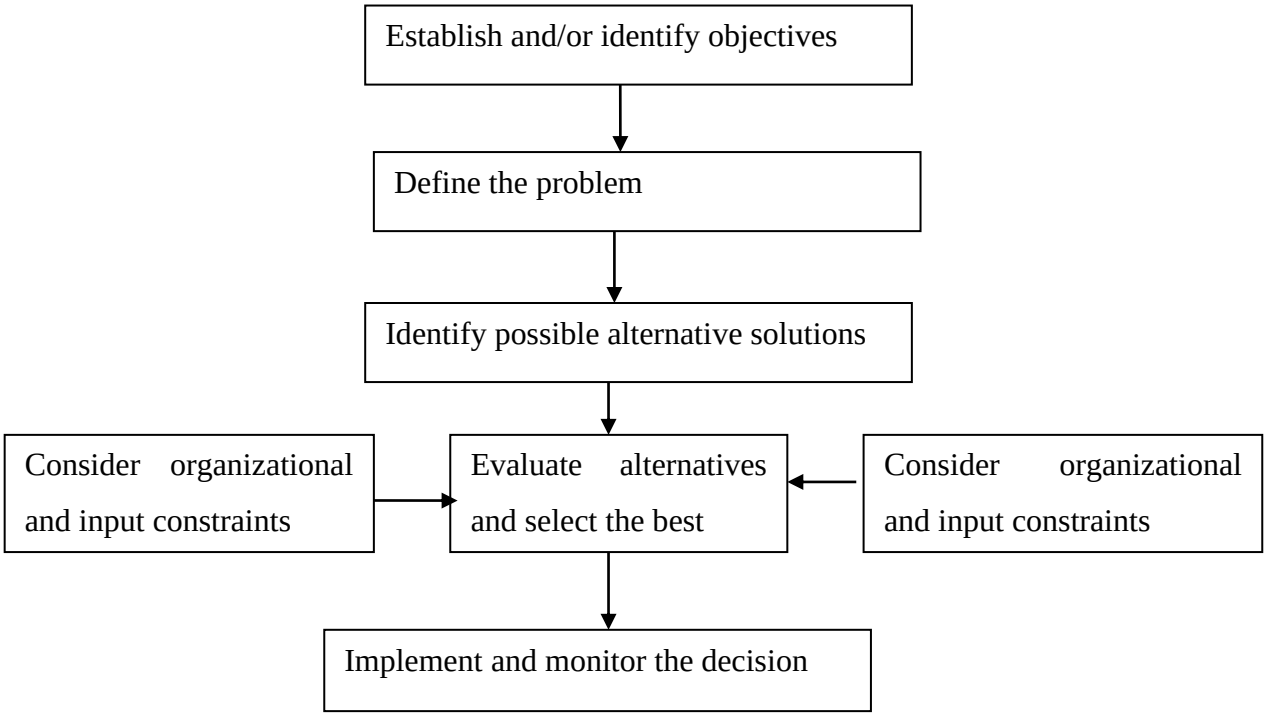
Accordingly, it has a wide scope to deal on the following issues:

- Estimation and analysis of demand for products
- Determination of price of products
- Planning of production and deciding input combination
- Estimation and analysis of cost of production
- Analysis of market structures and estimation of profit
- Achieving other objectives of a business

1.5 Decision Systems and Process

The ability to make good decisions is the key to successful managerial performance. The success of every decision depends mainly on decision process. Decision process refers to the procedure of making decision; it involves co-ordination on the time scale, present problem, past date and future action. Decision process in each of those areas of decision shares a number of common elements and basically it includes five steps. This five-step decision-making process is illustrated in figure 1.1.

Figure 1.1 The Decision Making Process



- First, the decision must establish or identify the objectives of the organization. The failure to identify organizational objectives correctly can result in the complete rejection of a well-convinced and well-implemented plan.
- Next, the decision maker must identify the problem requiring a solution.
- Third, once the source(s) of the problem is (are) identified, the manager can move to an examination of potential solutions. To provide potential solutions collection of data available facts and figures are important. If for example, the problem is the use of technologically inefficient equipment, two possible solutions may be proposed *updating and replacing the plant's equipment or building a completely new plant*. The choice between these alternatives depends on the relative data on cost and benefit, as well as other constraints that may make one alternative preferable to another.
- Fourth, formulation of a model (a model is an analytical tool that helps for making decision under different situation. After all alternatives have been identified and evaluated the best alternatives have been chosen using the model.
- The final step in the process is the implementation of the decision. This phase often requires constraint monitoring to ensure that results are as expected. If they are not, corrective action needs to be taken when possible.

1.6 Nature of the Firm

A **firm** is an association of individuals who have organized themselves for the purpose of turning inputs into output. The firm organizes the factors of production to produce goods and services to fulfill the needs of the households. Each firm lays down its own objectives which is fundamental to the existence of a firm.

The major **objectives** of the firm are:

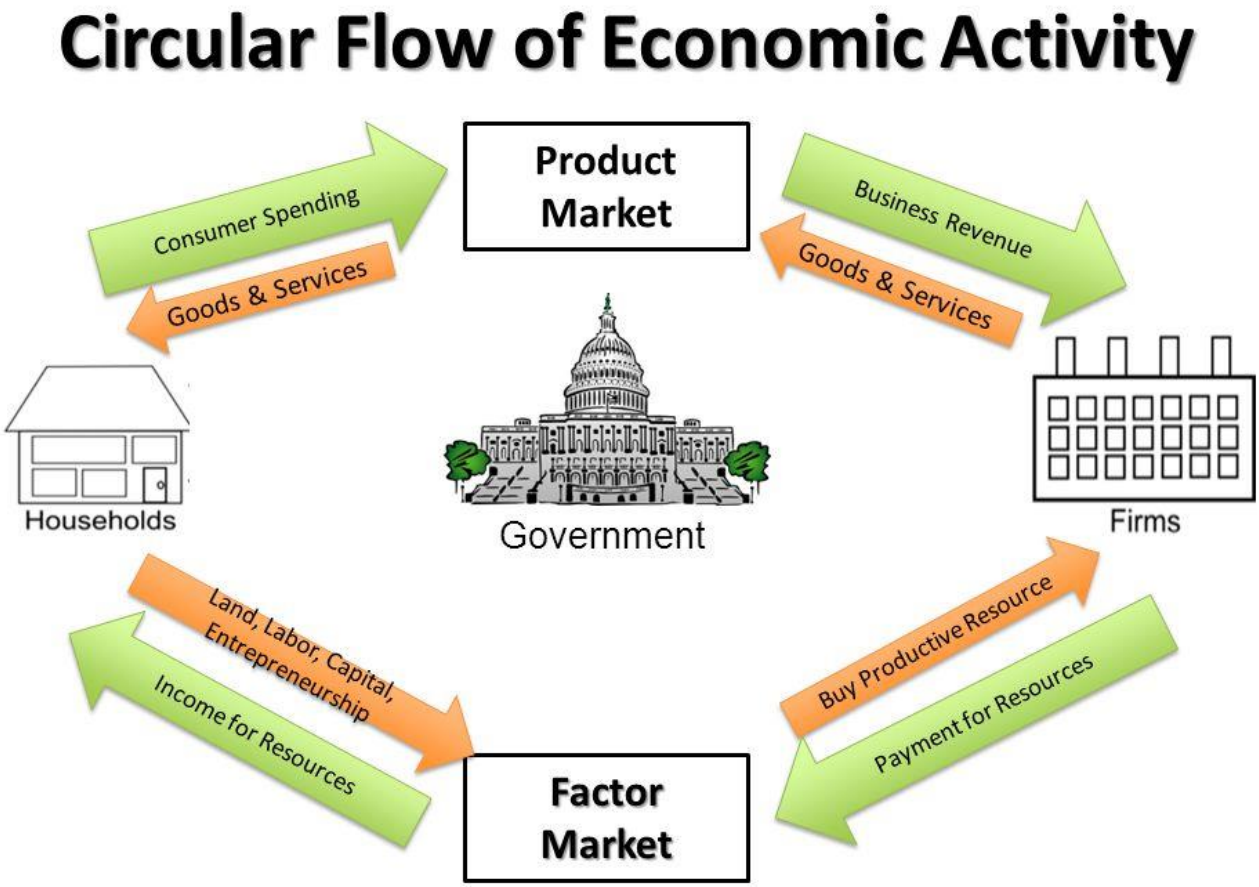
- To achieve the Organizational Goal
- To maximize the Output
- To maximize the Sales
- To maximize the Profit of the Organization
- To maximize the Customer and Stakeholders Satisfaction
- To maximize Shareholder's Return on Investment
- To maximize the Growth of the Organization

Firms are established to earn profit, to keep the shareholders happy. To increase their market share, they try to maximize their sales. In the present business world firms try to produce goods and services without harming the environment. Firms are not always able to operate at a profit. They may be facing the operating loss also. *Economists believe that firms maximize their long run rather than their short run profit*. So managers have to make enough profit to satisfy the demands of their shareholders and to maximize their wealth through the company.

1.7 Identify Goals and Constraints

The first step in making sound decisions is to have well-defined *goals* because achieving different goals entails making different decisions. If your goal is to maximize your grade in this course rather than maximize your overall grade point average, your study habits will differ accordingly. Similarly, if the goal of a food bank is to distribute food to needy people in rural areas, its decisions and optimal distribution network will differ from those it would use to distribute food to needy inner city residents. Notice that in both instances, the decision maker faces *constraints* that affect the ability to achieve a goal. The 24-hour day affects your ability to earn an A in this course; a budget affects the ability of the food bank to distribute food to the needy. Constraints are an artifact of scarcity.

1.8 Circular Flow of Economic Activity



The individuals own or control resources which are necessary inputs for the firms in the production process. These resources (factors of production) are classified into four types.

Land: It includes all natural resources on the earth and below the earth. Non- renewable resources such as oil, coal etc once used will never be replaced. It will not be available for our children. Renewable resources can be used and replaced and is not depleted with use.

Labor: is the work force of an economy. The value of the worker is called as human capital.

Capital: It is classified as working capital and fixed capital (not transformed into final products)

Entrepreneurship: It refers to the individuals who organize production and take risks.

All these resources are allocated in an effective manner to achieve the objectives of consumers (to maximize satisfaction), workers (to maximize wages), firms (to maximize the output and profit) and government (to maximize the welfare of the society).

The circular flows of economic activities are explained in a clockwise and counterclockwise flow of goods and services. The four sectors namely households, business, government andthe rest of the world can also be considered to see the flow of economic activities. The circular flow of activity is a chain in which production creates income, income generates spending and spending in turn induces production.

The major four sectors of the economy are engaged in three economic activities of production, consumption and exchange of goods and services. These sectors are as follows:

Households: Households fulfill their needs and wants through purchase of goods and services from the firms. They are owners and suppliers of factors of production and in turn they receive income in the form of rent, wages and interest.

Firms: Firms employ the input factors to produce various goods and services and make payments to the households.

Government: The government purchases goods and services from firms and also factors of production from households by making payments.

Foreign sector: Households, firms and government purchase goods and services (import) from abroad and make payments. On the other hand all these sectors sell goods and services to various countries (export) and in turn receive payments from abroad

1.9 Recognize the Nature and Importance of Profits

The overall goal of most firms is to maximize profits or the firm's value. Let us examine the nature and importance of profits in an Economic versus Accounting Profits. When most people hear the word *profit,* they think of accounting profits. ***Accounting profit*** is the total amount of money taken in from sales (total revenue, or price times quantity sold) minus the dollar cost of producing goods or services. Accounting profits are what show up on the firm's income statement and are typically reported to the manager by the firm's accounting department.

A more general way to define profits is in terms of what economists refer to as **economic profits**. *Economic profits* are the difference between the total revenue and the total opportunity cost of producing the firm's goods or services. The *opportunity cost* of using a resource includes both the *explicit* (or *accounting) cost* of the resource and the *implicit cost* of giving up the best alternative use of

the resource. The opportunity cost of producing a good or service generally is higher than accounting costs because it includes both the dollar value of costs (explicit, or accounting, costs) and any implicit costs.

Implicit costs are very hard to measure and therefore managers often overlook them. Effective managers, however, continually seek out data from other sources to identify and quantify implicit costs.

Example:

Fred currently works for a corporate law firm. He is considering opening his own legal practice, where he expects to earn $200,000 per year once he gets established. To run his own firm, he would need an office and a law clerk. He has found the perfect office, which rents for $50,000 per year. A law clerk could be hired for $35,000 per year. Fred would have to quit his current job, where he is earning an annual salary of $125,000 in the corporate firm. This would be an implicit cost of opening his own firm. If these figures are accurate, would Fred's legal practice be profitable?

Explicit costs = office rent + law clerk' s salary

$\Rightarrow$ 50,000 + 35,000

$\Rightarrow$ 85,000

Accounting Profit = subtracting the explicit costs from the revenue gives you the accounting profit.

Accounting profit = revenue –explicit costs

$\Rightarrow$ 200,000 – 85,000

$\Rightarrow$ 115,000

Economic profit = total revenue – explicit costs - implicit costs

$\Rightarrow$ 200,000 – 85,000 – 125,000

$\Rightarrow$ 10,000

Fred would be losing $10,000 per year. That does not mean he would not want to open his own business, but it does mean he would be earning $10,000 less than if he worked for the corporate firm.

1.10 Optimization

Optimization deals with the determination of extreme values which can be maximum or minimum for the objective variable. The objective variable may be one or multiple. For example, the private firm might pursue profit maximization as single goal or the public sector firm might aim at minimizing its average cost of production as the sole goal. In contrast, the government undertaking might have twin goals, namely, maximization of profit and maximization of employment of unskilled labor. Thus, below we will discuss optimization problems of the firm.

Profit Maximization

If a firm's objective is profit maximization, it would have the power to control variables such as total revenue and total cost which are variables related to profit. With regard to the total cost, it is to mean the total economic cost which is the sum of implicit and explicit costs. Explicit costs are costs directly incurred by the firm for the purchase of the inputs from the supplier of inputs where as implicit costs are an indirect costs of the firm which are related to depreciation of capital assets, employment of owner-supplied resources and payments to the owner-manager for his/her services. Thus, the economic profit is the difference between the total revenue and the total economic costs. So the firm maximizes its profit when such difference comes with a possible maximum value.

Value Maximization

The value of the firm is the price for which the firm can be sold and that price is equal to the present value of the future expected profit of the firm. The value of the firm is affected by the risk associated with the future profit so that the value would depends up on the risk premium, which is a discount rate to compensate investors for the risk they have faced due to uncertainty on future profits. Thus, the value of a firm is computed as the present value of the future economic profits expected to be generated by the firm so that the value of the firm maximizes when the summation of the present value of the future economic profits over the life time of the firm becomes at its maximum.

$$Value\ of\ the\ firm = \frac{\pi_1}{(1+r)} = \frac{\pi_2}{(1+r)^2} = \frac{\pi_3}{(1+r)^3} = \ldots \frac{\pi_T}{(1+r)^T} = \sum_{t=1}^{T} \frac{\pi_t}{(1+r)^t}$$

Where π_t is the economic profit expected in period t, r is the risk-adjusted discount rate, and T is the number of years in the life of the firm. The larger the risk associated with the future profit, the higher the risk adjusted discount rate used to compute the value of the firm and the lower will be the value of the firm. The reverse holds true if the risk associated with the future profits is smaller.

Profit Maximization Vs Value Maximization

Profit maximization refers to maximization of a single period profit by considering only the current revenue and cost conditions where as value maximization refers to maximization of the present value of future profits expected to be generated by considering not only the current revenue and cost conditions but also the future revenue and cost conditions.

The profit maximization and value maximization become equivalent and mean to the same thing if the cost and revenue conditions in one time period are independent of the revenue and costs in the future time period so a manager will maximize the value of the firm by making the decision that maximize profit in every single time period. However, if there is some dependency between the current and future condition of revenue and costs, say the current production output has an effect on increasing costs in the future, profit maximization in each (single) time period will not maximize the value of the firm.