NEW AGE

INTRODUCTORY ECONOMICS

(Micro and Macro)

A Textbook for Class XII

Subhendu Dutta

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(Micro and Macro)

A Textbook for Class XII

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Dedicated to my mother
Lakshmi R. Dutta

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PREFACE

I have immense pleasure to bring out the present book which is basically designed to cover complete syllabus of Economics for Higher Secondary second year examination (Class XII) as introduced by the Nagaland Board of Secondary Education from the session 2004–2005. The book will also be useful for the students appearing in class XII examination under CBSE.

The introduction of new syllabus has created vacuum in respect of suitable books exactly in conformity to NBSE syllabus. As such the present book has been written particularly keeping in mind the problems faced by students studying economics as a paper under NBSE. The book will equally serve the purpose of students opting either Arts or Commerce stream. The book is written in a very simple language understanding that it is meant for beginners. The book contains two Parts-A and B. Part-A analysis Microeconomics and Part-B deals with Macroeconomics. The new syllabus containing microeconomics and macroeconomics with eleven units in total have been suitably divided into twenty seven chapters. Unit-5 and unit-11 in the contents are meant for CBSE students only. At the end of the book, selected basic economic terms have been included under the heading 'Elementary Economic Terms'. These are the terms most commonly and frequently used in economics and also in real life. The underlying idea is to provide a student general understanding of economics as a subject more clearly and analytically. Past years examination question papers of the NBSE from 1995 onwards have also been incorporated.

I am thankful to my wife Mili Dutta for constant inspiration and my lovely daughter Sneha who has given me much time to work on it smoothly. I am also thankful to my colleagues who have directly or indirectly lent their helping hands. I am very much grateful to Mr. Saumya Gupta (Managing Director), Mr. V.R. Damodaran (Production Editor) and Saba Khan (Development Editor) of M/s New Age International (P) Limited, New Delhi for taking prompt and sincere initiative for publishing the book in a right time.

I would always invite critical views and suggestions for improvement of the book from both students and fellow teachers.

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PART A

INTRODUCTORY MICROECONOMICS

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1 INTRODUCTION TO MICROECONOMICS

WHAT ECONOMICS IS ALL ABOUT?

Economics is about economizing; that is, about choice among alternative uses of scarce resources. Choices are made by millions of individuals, businesses, and government units. Economics examines how these choices add up to an economic system, and how this system operates. (L.G. Reynolds)

Scarcity is central to economic theory. Economic analysis is fundamentally about the maximization of something (leisure time, wealth, health, happiness—all commonly reduced to the concept of utility) subject to constraints. These constraints—or scarcity—inevitably define a trade-off. For example, one can have more money by working harder, but less time (there are only so many hours in a day, so time is scarce). One can have more apples only at the expense of, say, fewer grapes (you only have so much land on which to grow food—land is scarce). Adam Smith considered, for example, the trade-off between time, or convenience, and money. He discussed how a person could live near town, and pay more for rent of his home, or live farther away and pay less, "paying the difference out of his convenience".

Economics as a subject came into being with the publication of very popular book in 1776, "An Enquiry into the Nature and Causes of Wealth of Nations", written by Prof. Adam Smith. At that time it was called Political economy, which remained operational at least up to the middle part of the 19th century. It is since then that the economists developed tools and principles using inductive and deductive reasoning. In fact, the 'Wealth of Nations' is a landmark in the history of economic thought that separated economics from other social sciences.

The word 'Economics' was derived from the Greek words 'Oikos' (a house) and 'Nemein' (to manage), which meant managing a household, using the limited money or resources a household has.

Let us explain a few important definitions frequently referred to in the economic theory.

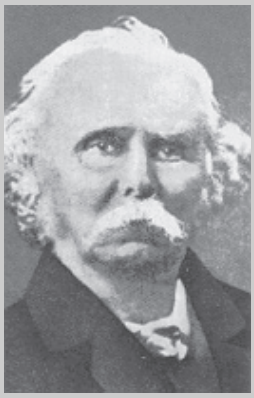
Adam Smith (June 5, 1723-July 17, 1790) was a Scottish political economist and moral philosopher. His 'Inquiry into the Nature and Causes of Wealth of Nations' was one of the earliest attempts to study the historical development of industry and commerce in Europe. That work helped to create the modern academic discipline of Economics and provided one of the best-known intellectual rationales for free trade and capitalism.

At the age of about fifteen, Smith proceeded to the University of Glasgow, studying moral philosophy under "the never-to-be-forgotten" (as Smith called him) Francis Hutcheson. In 1740 he entered the Balliol College of the University of Oxford, but as William Robert Scott has said, "the Oxford of his time gave little if any help towards what was to be his lifework," and he left the university in 1746. In 1748 he began delivering public lectures in Edinburgh under the patronage of Lord Kames. Some of these dealt with rhetoric and *belles-lettres*, but later he took up the subject of "the progress of opulence," and it was then, in his middle or late 20s, that he first expounded the economic philosophy of "the obvious and simple system of natural liberty" which he was later to proclaim to the world in his *Inquiry into the Nature and Causes of the Wealth of Nations*.

Wealth Definition

The early economists like J.E. Cairnes, J.B.Say, and F.A.Walker have defined economics as a science of wealth. Adam Smith, who is also regarded as father of economics, stated that economics is a science concerned with the nature and causes of wealth of nations. That is, economics deal with the question as to how to acquire more and more wealth by a nation. J.S.Mill opined that it is the practical science dealing with the production and distribution of wealth. The American economist F.A.Walker says that economics is that body of knowledge, which relates to wealth. Thus, all these definitions relate to wealth.

However, the above definitions have been criticized on various grounds. As a result, economists like Marshall, Robbins and Samuelson have put forward more comprehensive and scientific definitions. Emphasis has been gradually shifted from wealth to man. As Marshall puts, it is *"on the one side a study of wealth; and on the other, and more important side, a part of the study of man."*



Alfred Marshall (July 26, 1842- July 13, 1924), born in Bermondsey, London, England, became one of the most influential economists of his time. His book, *Principles of Political Economy* (1890) brought together the theories of supply and demand, of marginal utility and of the costs of production into a coherent whole. It became the dominant economic textbook in England for a long period.

Marshall grew up in the London suburb and was educated at the Merchant Taylor's School and St. John's College, Cambridge, where he demonstrated an aptitude in mathematics. Although he wanted early on, at the behest of his father, to become a clergyman, his success at Cambridge University led him to take an academic career. He became a professor in 1868 specializing in political economy. He desired to improve the mathematical rigor of economics and transform it into a more scientific profession. In the 1870s he wrote a small number of tracts on international trade and the problems of protectionism. In 1879, many of these works were compiled together into a work entitled *The Pure Theory of Foreign Trade: The Pure Theory of Domestic Values.* Marshall began work on his seminal work, the Principles of Economics, in 1881, and he spent much of the next decade at work on the treatise. His most important legacy was creating a respected, academic, scientifically-founded profession for economists in the future that set the tone of the field for the remainder of the twentieth century. Marshall's influence on codifying economic thought is difficult to deny. He was the first to rigorously attach price determination to supply and demand functions; modern economists owe the linkage between price shifts and curve shifts to Marshall. Marshall was an important part of the "marginalist revolution;" the idea that consumers attempt to equal prices to their marginal utility was another contribution of his. The price elasticity of demand was presented by Marshall as an extension of these ideas. Economic welfare, divided into producer surplus and consumer surplus, was contributed by Marshall, and indeed, the two are sometimes described eponymously as 'Marshallian surplus.' He used this idea of surplus to rigorously analyze the effect of taxes and price shifts on market welfare. Marshall also identified quasi-rents.

Welfare Definition

Thus according to Marshall, economics not only analysis the aspect of how to acquire wealth but also how to utilize this wealth for obtaining material gains of human life. In fact, wealth has no meaning in itself unless it is used to purchase all those things which are required for our sustenance as well as for the comforts necessary for life. Marshall, thus, opined that wealth is a means to achieve certain ends.

In other words, economics is not a science of wealth but a science of man primarily. It may be called as the science which studies human welfare. Economics is concerned with those activities, which relates to wealth not for its own sake, but for the sake of human welfare that it promotes. According to Cannan, *"The aim of political economy is the explanation of the general causes on which the material welfare of human beings depends."* Marshall in his book, "Principles of Economics", published in 1890, describes economics as, "*the study of mankind in the ordinary business of life; it examines that part of the individual and social action which is most closely connected with the attainment and with the use of the material requisites of well being"*.

On examining the Marshall's definition, we find that he has put emphasis on the following four points:

(*a*) Economics is not only the study of wealth but also the study of human beings. Wealth is required for promoting human welfare.

(*b*) Economics deals with ordinary men who are influenced by all natural instincts such as love, affection and fellow feelings and not merely motivated by the desire of acquiring maximum wealth for its own sake. Wealth in itself is meaningless unless it is utilized for obtaining material things of life.

(*c*) Economics is a social science. It does not study isolated individuals but all individuals living in a society. Its aim is to contribute solutions to many social problems.

(*d*) Economics only studies 'material requisites of well being'. That is, it studies the causes of material gain or welfare. It ignores non-material aspects of human life.

This definition has also been criticized on the ground that it only confines its study to the material welfare. Non-material aspects of human life are not taken into consideration. Further, as Robbins said the science of economics studies several activities, that hardly promotes welfare. The activities of producing intoxicants, for instance, do not promote welfare; but it is an economic activity.

Lionel Charles Robbins (1898-1984) was a British economist of the 20th century who proposed one of the early contemporary definitions of economics, "Economics is a science which studies human behavior as a relationship between ends and scarce means which have alternative uses."

Robbins's early essays were very combative in spirit, stressing the subjectivist theory of value beyond what Anglo-Saxon economics had been used to. His famous work on costs (1930, 1934) helped bring Wieser's "alternative cost" theorem of supply to England (which was opposed to Marshall's "real cost" theory of supply). It was his 1932 Essay on the Nature and Significance of Economic Science where Robbins made his Continental credentials clear. Redefining the scope of economics to be "the science which studies human behavior as a relationship between scarce means which have alternative uses".

Scarcity Definition

Lionel Robbins challenged the traditional view of the nature of economic science. His book, "Nature and Significance of Economic Science", published in 1932 gave a new idea of thinking

about what economics is. He called all the earlier definitions as classificatory and unscientific. According to him, *"Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses."* This definition focused its attention on a particular aspect of human behaviour, that is, behaviour associated with the utilization of scarce resources to achieve unlimited ends (wants). Robbins definition, thus, laid emphasis on the following points:

(*a*) 'Ends' are the wants, which every human being desires to satisfy. Want is an effective desire for a thing, which can be satisfied by making an effort for obtaining it. We have unlimited wants and as one want gets satisfied another arises. For instance, one may have the desire to buy a car or a flat. Once the car or the flat is purchased, the person wishes to buy a more spacious and designable car and the list of his wants does not stop here but goes on one after another. As human wants are unlimited, we have to make a choice between the most urgent want and less urgent wants. Thus the problem of choice arises. That is why economics is also called as a science of choice. If wants had been limited, they would have been satisfied and there would have been no economic problem.

(*b*) 'Means 'or resources are limited. Means are required to be used for the satisfaction of various wants. For instance, money is an important means to satisfy many of our wants. As stated, means are scarce (short in supply in relation to demand) and as such these are to be used optimally. In other words, scarce or limited means/resources are to be economized. We should not make waste of the limited resources but utilize them very judiciously to get the maximum satisfaction.

(*c*) Robbins also said that, the scarce means have alternative uses. It means that a commodity or resource can be put to different uses. Hence, the demand in the aggregate for that commodity or resource is almost insatiable. For instance, if we have a hundred rupee note, we can use it either to purchase a book or a fashionable clothe. We may use it in other unlimited ways as we like.

Let us now turn our attention to the definitions put forward by modern economists. J.M.Keynes defined economics as the study of the management of scarce resources and of the determination of income and employment in the economy. Thus his study centered on the causes of economic fluctuations to see how economic stability could be established. According to F. Benham, economics is, *"a study of the factors affecting the size, distribution and stability of a country's national income."* Recently, economic growth and development has taken an important place in the study of economics. Prof. Samuelson has given a growth oriented definition of economics. According to him, economics is the study and use of scarce productive resources overtime and distribute these for present and future consumption.

In short, economics is a social science concerned with the use of scarce resources in an optimum manner and in attainment of desired level of income, output, employment and economic growth.

SUBJECT MATTER OF ECONOMICS

The subject matter of economics is divided into two categories–microeconomics and

macroeconomics. Microeconomics, which deals with individual agents, such as households and businesses, and macroeconomics, which considers the economy as a whole, in which case it considers aggregate supply and demand for money, capital and commodities. Aspects receiving particular attention in economics are resource allocation, production, distribution, trade, and competition. Economics may in principle be (and increasingly is) applied to any problem that involves choice under scarcity or determining economic value.

The term 'Micro' and 'Macro' economics have been coined by Prof. Ragnar Frisch of Oslo University during 1920's. The word micro means a millionth part. In Greek mickros means small. Thus microeconomics deals with a small part of the whole economy. For example, if we study the price of a particular commodity instead of studying the general price level in the economy, we actually are studying microeconomics. Precisely, microeconomics studies the behaviour of individual units of an economy such as consumers, firms, and industry etc. Therefore, it is the study of a particular unit rather than all units combined together. Microeconomics is called Price theory, which explains the composition, or allocation of total production.

In short, microeconomics is the study of the economic behaviour of individual consumers, firms, and industries and the distribution of production and income among them. It considers individuals both as suppliers of labour and capital and as the ultimate consumers of the final product. On the other hand, it analyses firms both as suppliers of products and as consumers of labour and capital.

Microeconomics seeks to analyze the market form or other types of mechanisms that establish relative prices amongst goods and services and/or allocates society's resources amongst their many alternative uses. In microeconomics, we study the following:

1. Theory of product pricing, which includes-
   (*a*) Theory of consumer behaviour.
   (*b*) Theory of production and costs.
2. Theory of factor pricing, which constitutes-
   (*a*) Theory of wages.
   (*b*) Theory of rent.
   (*c*) Theory of interest.
   (*d*) Theory of profits.
3. Theory of economic welfare.

Microeconomics has occupied a very important place in the study of economic theory. In fact, it is the stepping–stone to economic theory. It has both theoretical and practical implications. Important points of its significance are mentioned as under:

1. Microeconomics is of great help in the efficient management of the limited resources available in a country.
2. Microeconomics is helpful in understanding the working of free enterprise economy where there is no central control.

3. Microeconomics is utilized to explain the gains from international trade, balance of payments disequilibrium and determination of foreign exchange rate.
4. It explains how through market mechanism goods and services produced in the community are distributed.
5. It helps in the formulation of economic policies, which are meant for promoting efficiency in production, and welfare of the people.
6. Microeconomics is the basis of welfare economics.
7. Microeconomics is used for constructing economic models for better understanding of the actual economic phenomena.

Despite the fact that it has so many benefits, it also suffers from certain defects or limitations. These are:

1. It is not capable of explaining the functioning of an economy as a whole.
2. It assumes full employment; which is rare in real life.
3. It cannot be used for solving the problem relating to public finance, monetary and fiscal policy etc.

Positive and Normative Economics

While discussing the scope of economics, we also think of whether economics is a positive or normative science. A positive science describes 'what is' and normative science explains 'what ought to be'. Thus a positive science describes a situation as it is, whereas normative science analysis the situation and suggests/comments on wrongness or rightness of a thing/state. For example, 'population in India is rising', is a positive statement and 'Rising population is an obstacle in the way of development' is a normative statement.

Classical economists consider economics as a positive science. They declined any comment about wrongness or rightness of an economic situation. Robbins also supported the classical view and stated that economics is not concerned with the desirability or otherwise of 'ends'. Therefore, the task of an economist is not to condemn or advocate but to explore and explain. However, economics should not be treated as only positive science. It should be allowed to pass moral judgments of an economic situation. It is, therefore, considered both positive and normative science. Thus, Economics is the social science that studies the allocation of scarce resources to satisfy unlimited wants. This involves analyzing the production, distribution, trade and consumption of goods and services. Economics is said to be positive when it attempts to explain the consequences of different choices given a set of assumptions or a set of observations, and normative when it prescribes that a certain action should be taken.

Questions for Review

1. Define economics as given by L. Robbins.

2. Who is regarded as the father of economics?

3. Who coined the terms—micro and macroeconomics?

4. Name the book written by Adam Smith.

5. 'Economics is a science of choice'—explain.

6. "Economics is a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses." Explain.

7. Give the meaning of the term opportunity cost.

8. How is the study of microeconomics significant?

9. What is the scope of microeconomics?

10. What do you mean by marginal rate of transformation?

11. What is the basic problem of an economy?

12. What do you mean by the terms 'ends' and 'means'?

13. Define want.

14. What is the meaning of economizing of resources? Why is there a need for economizing resources?

16. What do you understand by Micro Economics?

17. What specific problem of an economy is studied in welfare economics?

18. Give the definition of a scarce resource.

19. What is meant by scarcity in economics?

20. Define an economy.

21. State Marshall's definition of Economics.

22. "Economics enquires into the nature and causes of wealth of nations". Who gave this definition of economics? What does it imply?

23. What is economics about? (NCERT)

24. Explain how scarcity and choice go together. (NCERT)

25. "Economics is about making choices in the presence of scarcity." Explain. (NCERT)

26. What are the main features of Marshall's Definition of economics?

27. "Scarce means have alternative uses."—Explain.

28. Name the Economist who coined the terms micro and macro.

29. Write five importances of micro economics.

30. Mention three shortcomings of microeconomic theory.

31. What do you understand by positive and normative economics?

32. Is economics a positive science?

2 PROBLEMS OF AN ECONOMY

CENTRAL PROBLEMS OF AN ECONOMY

Scarcity is the root cause of all economic problems. We know that resources are scarce or short in supply in relation to demand; but wants or ends are unlimited. As a consequence, we face the problem of choice among so many of our wants. This is because scarce means have alternative uses. Thus, we have to choose among the most urgent and less urgent wants. In fact, the basic problem of an economy is the problem of choice. More precisely, problem before us is to take right decisions in regard to the goals or ends to be attained and the way, the scarce means to be utilized for this purpose. Every economy faces some fundamental problems called as central problems of an economy. These are the following:

(1) What goods and services are to be produced? The first major problem faced by an economy is what types of goods and services to be produced. As resources are limited, we must choose between different alternative collection of goods and services that may be produced. It may also imply whether to produce capital/producer goods or consumer goods. Moreover, we have to decide about the quantity of the goods to be produced in the economy.

(2) How to produce these goods and services? The next problem we have to tackle is the problem of how to produce the desired goods in the economy. Thus the question of techniques to be used in the production comes in the mind. Whether we should use labour-intensive technique or capital – intensive technique. Labour-intensive method of production implies more use of labour per unit than capital whereas; capital-intensive technique indicates more use of capital per unit than labour. The choice depends on the availability of resources. A labour surplus economy can well use the labour–intensive technology.

(3) For whom these goods and services are to be produced? Once we have decided what goods to be produced and what techniques to be used in the production of goods, we are encountered with another problem, i.e., the problem of distribution of goods in the economy. This is the problem of sharing of national income.

(4) Are the resources efficiently used? We have also to see that scarce resources are efficiently utilized. This is the problem of economic efficiency or welfare maximization.

(5) Are the resources fully employed? An economy must also try to achieve full employment of all its resources.

(6) How to attain growth in the economy? An economy is to ensure that it is attaining sufficient growth rate so that it is able to grow larger and larger and develop at faster rate. It should be able not only to make a structural change from agrarian to industrial sector but also to increase per capita and national income of the country. An economy must not remain static. Its productive capacity must increase continuously.

It is clear that the basic problem of an economy is the economizing of resources. The economizing problem arises in every type of economic society owing to the fact that resources are scarce in relation to multiple wants/ends.

PRODUCTION POSSIBILITY CURVE

The production possibility Curve is a graph that depicts the trade-off between any two items produced. It is also known as Transformation Curve or Production Frontier, which shows the maximum feasible quantities of two or more goods that, can be produced with the resources available. In other words, it indicates the opportunity cost of increasing one item's production in terms of the units of the other forgone. Prof. Samuelson analyzed the economizing problem by the use of production possibility curve.

Thus, a PPC shows the maximum obtainable amount of one commodity for any given amount of another commodity, given the availability of factors of production and the society's technology and management skills. The concept is used in macroeconomics to show the production possibilities available to a nation or economy, and also in microeconomics to show the options open to an individual firm. All points on a production possibilities curve are points of maximum productive efficiency or minimum productive inefficiency: resources are allocated such that it is impossible to increase the output of one commodity without reducing the output of the other. That is, there must be a sacrifice—an opportunity cost—for increasing the production of any good. All resources are used as completely as possible (without the situation becoming unsustainable) and appropriately. The production possibility curve does not remain stationary. It moves outward overtime with growth of resources and improvement in technology. This is because we get more output from the same quantities of resources. The table below illustrates production possibilities of a simple economy producing two commodities—cars and computers. Two production possibilities–E and F are shown. When the economy decides to put more resources for the production of computers, it must sacrifice some resources from the production of cars. Thus, when 10000 computers are decided to be produced, 5000 cars cannot be produced as the resources are now diverted to the production of computers.

Production possibilities	*Computers (in 000's)*	*Cars (in 000's)*
E	5	15
F	10	10

The adjacent Fig. 2.1 derived from the table above, shows the production possibility curve. If all resources in the economy are utilized in the production of cars, OA units of cars can be produced.

On the other hand, if all resources are put in the production of computers, OB units of computers would be produced in the economy. Joining points A and B, we get production possibility curve AB. In case, the economy decides to produce both the commodities by using the available resources, it can produce various combinations of cars and computers by staying on the curve AB, such as at E or F. At point E, it can produce OS units of cars and OT units of computers. Similarly, at F, ON units of cars and OM units of computers can be produced. Thus, the points E, F or any other point on curve AB show maximum feasible combinations of cars and computers which can be produced with the resources available. Point C in the figure is not attainable or feasible for the economy as it is above the production possibility curve AB, i.e., beyond the capacity of the economy. Again, it will not produce at point D which is though attainable but not desirable, because in that case the economy's resources will not be used most effectively.

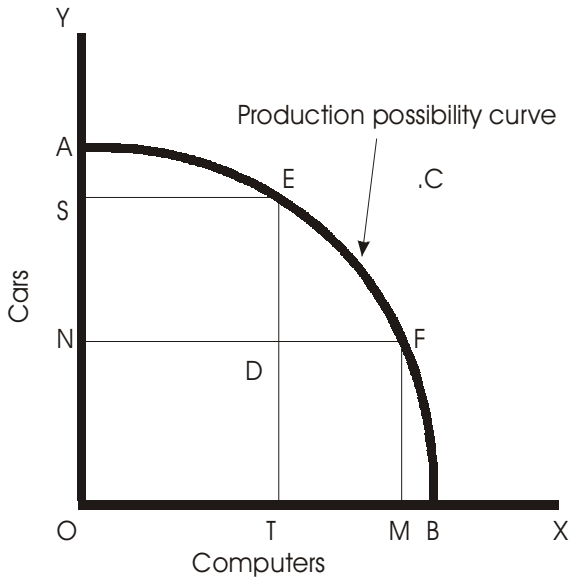


Fig. 2.1

It is, thus, seen that to produce more computers, some units of cars are to be sacrificed, i.e., cars can be transformed to computers. The rate at which one product is transformed into another is called **marginal rate of transformation** (MRT). Thus, MRT between cars and computers is the units of cars (in our case, 5000), which has to be sacrificed for the production of computers. MRT increases, as more of one commodity is produced and less of another. This makes Production Possibility curve concave to the origin.

Uses of Production Possibility Curve

The production possibility curve has a number of uses. It helps in finding the solution of the basic problems of production—what and how to produce and for whom to produce goods in the economy. Besides, whenever government decides to divert its resources, say, from necessaries to luxuries, it may utilize the concept of production possibility curve. It can also help in guiding the diversion of resources from current consumption goods to capital goods and increase productive capacity to attain higher levels of production.

OPPORTUNITY COST

Opportunity cost is a term which means the cost of something in terms of an opportunity foregone (and the benefits that could be received from that opportunity), or the most valuable foregone alternative. In other words, the opportunity cost of a given commodity is the next best alternative cost or transfer costs. As we know that productive resources are scarce, therefore, the production of one commodity means not producing another commodity. The commodity that is sacrificed is the real cost of the commodity that is produced. This is the opportunity cost. Let us explain this with an example. Suppose a producer can produce a car or a computer with the money at his disposal. If the producer decides to produce car and not computer, then the real cost of the car is equal to the cost of computer, i.e., the alternative foregone. Let us take another example to explain the concept. For example, if a company decides to build hotels on vacant land that it owns, the opportunity cost is some other thing that might have been done with the land and construction funds instead. In building the hotels, the company has forgone the opportunity to build, say, a sporting center on that land, or a parking lot, or a housing complex, and so on. In simpler terms, the opportunity cost of spending a day for picnic with your friends could be the amount of money you could have earned if you had devoted that time to working overtime.

Opportunity cost need not be assessed in monetary terms, but rather, is assessed in terms of anything that is of value to the person or persons doing the assessing. The consideration of opportunity costs is one of the key differences between the concepts of economic cost and accounting cost. Assessing opportunity costs is fundamental to assessing the *true cost* of any course of action. The simplest way to estimate the opportunity cost of any single economic decision is to consider, "What is the next best alternative choice that could be made?" The opportunity cost of paying for college fee could be the ability to buy some clothes. The opportunity cost of a vacation in the Goa could be the payment for buying a motorbike.

It is to be noted that opportunity cost is not the sum of the available alternatives, but rather of benefit of the best alternative of them.

The concept of opportunity cost can be explained with a diagram that depicts opportunity cost between any two given items produced by a given economy. It is known in economics as the production possibility curve, as shown in Fig. 2.1 above. In the imaginary economy discussed above which produces only cars and computers, the economy will be operating on the PPC if all resources (inputs) are fully utilized and used most appropriately (efficiently). The exact combination of cars and computers produced depends on the mechanisms used to decide the allocation of resources (i.e., some combination of markets, government, tradition, and community democracy).

The concept of opportunity cost has become very popular in the recent years. The modern analysis of cost-benefit analysis is based on the theory of opportunity cost only. The cost-benefit analysis is a guiding tool for entrepreneurial decisions in the modern economy. Although opportunity cost can be hard to quantify, its effect is universal and very real on the individual level. The principle behind the economic concept of opportunity cost applies to all decisions, not just economic ones.

Questions for Review

1. What do you mean by an economic problem? How does an economic problem arise?
2. What are the central problems of an economy?
3. What is a production possibility curve? Explain with the help of a diagram.
4. Give the meaning of the term opportunity cost.
5. Why is the production possibility curve concave to the origin?
6. What do you mean by marginal rate of transformation?
7. Define marginal opportunity cost along a production possibility curve. (NCERT)
8. Give two examples of underutilization of resources. (NCERT)
9. "An economy always produces on, but not inside, a PPC." Give reasons. (NCERT)
10. Name the factors that lead to the shift of the PPC? (NCERT)
11. Give two examples of growth of resources. (NCERT)
12. Why do technological advances or growth of resources shift the PPC to the right? (NCERT)
13. Name any two central problems facing an economy. (NCERT)
14. What does increasing marginal opportunity cost along a PPC mean? (NCERT)
15. What is the basic problem of an economy?
16. Distinguish between capital-intensive and labour-intensive technique of production.
17. What are the important uses of PPC?
18. Explain the concept of opportunity cost giving example.

3 CONSUMER BEHAVIOUR

CONSUMER'S EQUILIBRIUM–UTILITY MAXIMIZATION

The theory of demand starts with the examination of the behaviour of the consumers. In our everyday life we behave in different ways while buying and consuming a good or service. The simple calculations and human reasoning we undertake while doing any transactions have been transformed into principles which guide us to attain satisfaction or equilibrium in economic sense. When we go for shopping, we decide beforehand, what good to buy and how much to spend. It makes sense as we try to get most of what we are spending. In other words, we always want more of anything and for that purpose we negotiate and come to an agreed price which we are ready to pay happily. It is therefore, necessary to be first acquainted with the consumer behaviour, which forms the basis of the demand theory.

It is assumed that consumers are rational. Given his money income and the prices of commodities, a consumer always tries to maximize his satisfaction. That is, to get the maximum welfare (state of well-being) by spending the given money on various commodities. It is assumed that the satisfaction a consumer gets by consuming a good is measurable (measured in terms of money), though in real life it is not possible to measure satisfaction because it is psychological entity. We only feel the level of satisfaction and express the same in different ways. We show our satisfaction by our behaviour like laughing, jumping in excitement or in any other way. Thus, we cannot measure satisfaction in quantitative terms as we are capable of measuring time in seconds, weight in kilograms or length in meters. Further, each consumer is also assumed to be known of what he wants. Moreover, he has all information regarding market—the goods available, the prices of the goods at a particular point of time and so on. Every consumer uses this information in such a way as to maximize his total satisfaction.

To explain consumer's equilibrium i.e., how a consumer attains maximum satisfaction by spending his money income on certain units of commodities, it is worthwhile to be familiar with certain important terms used in explaining various concepts and theories of demand. These are explained as under:

Utility

Utility is defined as the power of a commodity or service to satisfy a human want. Economists have leveled the term satisfaction as utility. It is subjective concept and therefore varies from

person to person. As already stated, it resides in one's mind and therefore cannot be measured in quantitative terms. Though utility and satisfaction are used synonymously, we should note that utility is the expected satisfaction whereas satisfaction implies 'realized satisfaction'.

Total Utility

It is the amount of utility (satisfaction); a consumer gets by consuming all the units of a commodity. If there are *n* units of the commodity then the total utility is the sum of the utilities of all *n* units of the commodity. Thus, if there are four units of a commodity, then total utility is,

$$U = U_1(n_1) + U_2(n_2) + U_3(n_3) + U_4(n_4)$$

Where U = total utility; U_1…….U_4 are the utilities of n_1…..n_4 units of the commodity.

Thus, if by consuming first apple, a consumer gets 12 utils of satisfaction, 10 utils from the second apple, 9 utils from the third and 7 utils from the fourth apple; then his total utility is,

$$U = 12 + 10 + 9 + 7 = 38$$

Thus utilities of various goods are additive. This means that utilities of different commodities are independent of one another. The utility derived from one commodity does not affect that of another.

Marginal Utility

Marginal utility is defined as the change in the total utility due to a unit change in the consumption of a commodity per unit of time. It can also be defined as the addition made to the total utility by consuming an additional unit of a commodity. For example, if total utility of 3 cups of tea is 18 utils and on consuming the 4^{th} cup it rises to 20; then marginal utility 20-18 = 2 utils. Thus, by consuming one more cup of tea, the additional utility, a consumer gets is 2 utils. Marginal utility can be expressed as,

$$MU = \frac{\Delta TU}{\Delta Q}$$

Where MU = marginal utility; ΔTU = change in total utility; ΔQ = change in the quantity consumed. 'Utils' is the term used by Marshall as a measuring unit of utility. The following expression can also be used to find marginal utility:

$$MU = TU_n - TU_{n-1}$$

Where, TU_n is the total utility of *n*th unit of the commodity and TU_{n-1} utility from the *n*-1th commodity. Thus, if TU from the second unit (*n*th unit) of apple is 13 and TU from the previous unit (*n*-1) is 7, then MU is 13 – 7 = 6.

The concept of total utility and marginal utility is shown in the utility schedule below:

Units of apples	*Total utility*	*Marginal utility*
1	7	7 – 0 = 7
2	13	13 – 7 = 6
3	18	18 – 13 = 5
4	22	22 – 18 = 4

Contd....

5	25	25 – 22 = 3
6	27	27 – 25 = 2
7	28	28 – 27 = 1
8	28	28 – 28 = 0

When the consumer takes 1st apple, his total utility is 7 and from the 2nd apple he gets 13 and so on. The third column shows marginal utility, which diminishes as the consumer increases units of apples. It is seen that when total utility is maximum, marginal utility is zero at 8th unit of apple. It is also seen that total utility is the sum of the marginal utilities of the 1st, 2nd, 3rd, and so on. Thus, at 8th unit of apple,

$$TU = MU_1 + MU_2 + MU_3 + MU_4 + \ldots\ldots + MU_{n(8)}$$
$$28 = 7 + 6 + 5 + 4 + \ldots\ldots + 0$$

LAW OF DIMINISHING MARGINAL UTILITY

One of the very important laws in regard to the satisfaction of human wants is known as law of diminishing marginal utility. The law explains common feeling of every consumer. Suppose a person starts consuming apples one after another. The first apple gives him the maximum satisfaction as he might be in mood of taking some food at that time for meeting his appetite. As he takes the second apple, he gets less satisfaction because by this time he has already met some level of appetite. The third and more apples yield him lesser satisfaction or utility. It means that every time the consumer increases his consumption, he gets less and less satisfaction. The satisfaction also tends to be zero when the consumer feels totally disgusted to take any more apples. If he takes more, his satisfaction turns negative or utility now becomes disutility.

Thus law of diminishing marginal utility states that additional satisfaction a person derives by consuming a commodity goes on declining as he consumes more and more of a that commodity. According to Marshall, *"The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in stock that he already has."*

Two important reasons for diminishing marginal utility are the following:

(*a*) *Each particular want is satiable (can be satisfied):* Though there are unlimited wants, a single want can be satisfied. Thus, when a consumer consumes more and more of a commodity, his want is satisfied and he does not wish to have any further increase in the commodity. As such his marginal utility falls when consumption increases.

(*b*) *Goods are imperfect substitutes for one another i.e., one good cannot be exactly used in place of another:* Satisfaction from any two goods is not same. Different goods satisfy different wants. If a good could be perfectly substituted for another, it would have satisfied other wants. Hence, its marginal utility would not have fallen but increased.

The law can be explained with the help of a table and diagram-3.1 below:

Units (Apples)	*TU*	*MU*
1	10	10
2	18	8
3	22	4
4	24	2
5	25	1
6	25	0
7	32	–7
8	44	–12

As the consumer goes on consuming more and more units of apples, total utility (TU) increases but marginal utility (MU) declines continuously and becomes zero at 6th unit. When consumer consumes further, utility becomes negative. It is to be noted that when TU is maximum, MU is zero. Let us now derive the MU curve from the above schedule as under. Marginal utility is measured along Y-axis while units of apples along X-axis. MU is the marginal curve falling downwards from left to right. This is diminishing MU curve. It is seen in the Fig. 3.1 below, that marginal utility is zero when the consumer buys 6th apple. As he consumes more, marginal utility becomes negative.

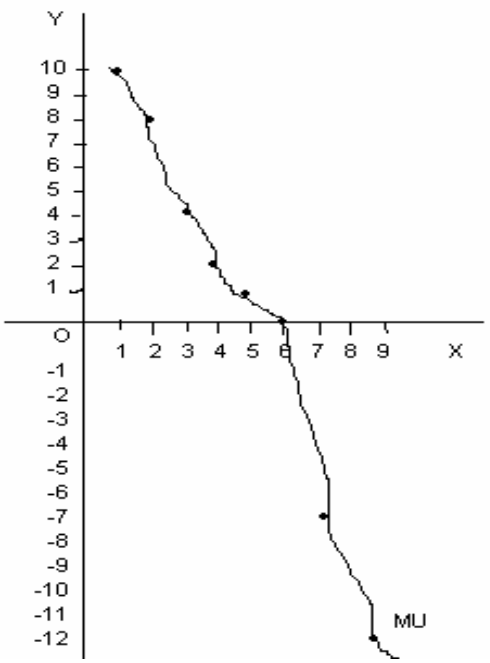


Fig. 3.1

The law of diminishing MU has certain limitations. These are:

1. If units of a commodity consumed are not of same size and shape, the law does not

hold good. In the illustration explained above, units of apples are assumed to be of same shape and size.

2. The law does not hold good when there is enough time gap between consumption of two units. For instance, if we take second apple after a long gap of time, we may feel hungry and hence satisfaction will increase instead of falling.
3. The taste of consumer should not change for the law to hold good. It means that the person should consume all units of a good by same desire and pleasure.
4. The law does not apply to money as it is said that more money a person has, the more he wants.
5. Change in income of the consumer will falsify the law. If money income of the consumer increases or decreases during the time of consumption of a particular set of goods, the marginal utility will not fall as said above.

The law of diminishing marginal (additional) utility explains consumer's equilibrium in case of a single commodity. A consumer will go on purchasing successive units of a commodity till the marginal utility of the commodity is equal to price. Thus, for a single commodity *x*, a consumer is in equilibrium when the marginal utility of *x* is equal to its market price (P_x). Symbolically,

$$MU_x = P_x$$

In case the price goes down, he will buy more and the marginal utility will come down to the level of price. If price rises, less will be purchased and the marginal utility rises till it reaches the new level of price. Thus, equality between marginal utility and price indicates the position of consumer's equilibrium when a single commodity is being purchased and consumed.

Questions for Review

1. State the law of diminishing marginal utility.
2. Define total utility.
3. Define marginal utility.
4. How is total utility derived from marginal utilities? (NCERT)
5. What does rationality of consumers mean?
6. Is satisfaction measurable?
7. Define utility.
8. Show that utilities of various goods are additive.
9. Explain law of diminishing marginal utility with the help of diagram.
10. Why does marginal utility diminishes?
11. What are the assumptions of the law of diminishing marginal utility?
12. Does the law apply to money?
13. What is the condition for a consumer's equilibrium? Explain.

4 DEMAND AND LAW OF DEMAND

MEANING OF DEMAND

In Economics, Demand means desire to have a commodity backed by enough money to pay for the good demanded. Thus, in economics we are concerned only with demand, which is effectively backed up by an adequate supply of purchasing power, i.e., with effective demand. Thus, if a person desires to buy a car, he should have enough money to buy that; then only demand becomes effective. It should also be mentioned here that demand is not complete unless the consumer has willingness to buy a good or service. A person has the desire and enough money but at a particular point of time, he may not have willingness to buy the good due to sudden change in his taste or preference. For example, when a person goes to a showroom to buy his dream car but declines to buy, just because he does not find his preferred colour. Moreover, demand for a good is always expressed in relation to a particular price and a particular time. Therefore, we may define demand for a good as the amount of it, which will be purchased per unit of time at a given price. According to F. Benham, "*The demand for anything at a given price is the amount of it which will be bought per unit of time at that price.*" Another good definition of demand, given by Bober is—"*the various quantities of a given commodity or service which consumers would buy in one market in a given period of time at various prices, or at various incomes, or at various prices of related goods.,*" constitute demand. Demand, in economics, always refers to a schedule. It is not a single quantity. The quantity which is purchased at some particular price is called the quantity demanded.

MARKET DEMAND

Market demand is the total sum of the demands of all individual consumers, who purchase the commodity in the market. A market demand schedule is shown as under:

Price (per unit)	*A's demand*	*B's demand*	*C's demand*	*Market demand (A + B + C)*
1	8	9	10	27
2	7	6	9	22
4	6	4	8	18

Cont.....

6	5	3	7	15
8	4	2	6	12
10	3	1	5	9

Let us assume that there are three consumers—A, B and C. Their individual demand schedule is shown in 2nd, 3rd and 4th columns respectively. Market demand is the sum of A's, B's and C's demand of, say, apples. We find that the market demand schedule also behaves in the same way as an individual's demand for a commodity. That is, at lower price, demand is more and vice versa.

A market demand curve is the graphical representation of market demand and is derived by the lateral/horizontal summation of all individuals' demand curve in the market as shown in the Fig. 4.1. As the individual's demand curve slope downward from left to right, the market demand curve also slopes downward to the right.

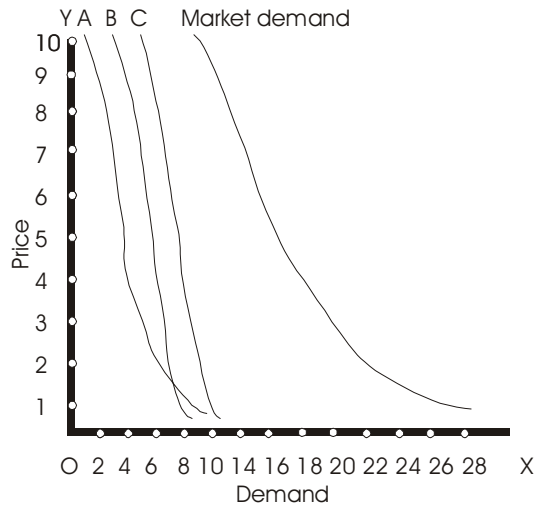


Fig. 4.1

DETERMINANTS OF DEMAND

Demand for a product depends upon a number of factors. The most important of these are—the price of the product, income of the consumer, tastes and fashion and the prices of related goods. We can put it in the functional form as:

$$D_x = f\ (P_x, I, P_y, T, F\ldots)$$

Where D_x = demand of good *x*; P_x = price of good *x*; I = income of the consumer; P_y = prices of related goods; T = tastes and F = fashion.

Thus, demand for a commodity depends upon the following factors:

1. **Price of the commodity:** Price of a commodity is an important factor that determines demand for a commodity. When price of a commodity rises, consumers buy less and when prices fall, demand increases. Here, we assume other things (factors) to be remaining constant, i.e, *ceteris paribus.*

2. **Income of the consumer:** The demand for goods depends upon the incomes of the people. The greater the income, the greater will be the demand for a good. More income means greater purchasing power. People can afford to buy more when their incomes rise. On the other hand, if income falls, demand for a commodity also decreases.

3. **Prices of related goods:** Related goods are of two types—substitute and complements. Substitute goods can be interchangeably used. For example, tea and coffee are substitute goods. If tea is dearer, one can use coffee and vice versa. Complementary goods are demanded together as bread and butter or car and petrol.

   When price of a substitute for a good falls, the demand for that good declines and when price of substitute rises, the demand for that good increases. In case of complementary goods, the change in the price of any of the two goods also affects the demand of the other. For instance, if demand for two-wheelers fall, the demand for petrol also goes down.

4. **Taste and preferences of the consumer:** These are important factors, which affects the demand for a product. If tastes and preferences are favourable, the demand for a good will be large. On the other hand, when any good goes out of fashion or people's tastes and preferences no longer remain favourable, the demand decreases.

DEMAND SCHEDULE AND DEMAND CURVE

A demand schedule is a tabular statement that shows the different quantities of a commodity that would be demanded at different prices. It expresses what quantities of a good will be purchased at different possible prices. A demand schedule is shown as below:

Price of apples per unit (in Rs.)	*Quantity demanded (in nos.)*
8	5
6	7
4	8
2	10

It is clear from the table, that when price of an apple is Rs. 8/- the consumer demands 5 apples and when price falls to Rs. 2/- each, demand of apples goes up to 10 units. Thus, price and quantity demanded shows inverse relationship.

On the basis of the above demand schedule, we can derive an individual's demand curve. A Demand curve is the graphical representation of the demand schedule. This is shown in Fig. 4.2 below. Prices of apples are measured along Y-axis and quantities demanded along X-axis. A, B, C and D are the different combinations of price and quantity demanded. Joining these points, we get the demand curve *dd* sloping downwards to the right, indicating inverse relationship between price and quantity demanded.

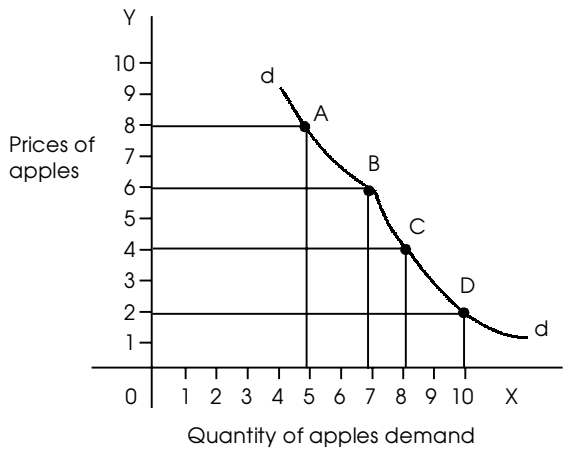


Fig. 4.2

LAW OF DEMAND

The law of demand expresses the functional relationship between price and quantity demanded of a good. It is one of the most important laws of economic theory. According to this law, other things remaining constant (*ceteris paribus*), if the price of a commodity falls the quantity demanded of it will rise and if price of the good rises quantity demanded will fall. Thus, there is inverse relationship between price and quantity demanded. Thus, we buy more units of apple when its price comes down from Rs. 4 per unit to Rs. 2 per unit. Law of demand only applies when certain conditions are met, which have been mentioned as under.

Assumptions of the law

The law of demand assumes the following:

1. Incomes of consumers do not change. If consumer's income increases or decreases, the law will not hold good.
2. People's tastes and preferences remain unchanged; and
3. Prices of substitutes and complements do not change.

The law of demand can be explained with the help of a demand schedule and through a demand curve. A demand schedule is shown as under.

Price of apples per unit (in Rs.)	*Quantity demanded (in nos.)*
8	5
6	7
4	8
2	10

It is seen in the table that when the price of the commodity is Rs. 8/- per unit, consumers buy 5 units only and at Rs. 2/- per unit, they buy 10 units of the commodity. Thus, as price goes

down, consumers buy more of a commodity and vice versa. The demand curve drawn from this schedule is shown in Fig. 4.3. Along x-axis, quantity is measured and along y-axis price of the commodity is measured. By joining various points or combinations of price and quantity demanded, we get a curve '*dd*' falling downwards from left to the right. This is known as the demand curve. The demand curve clearly indicates that price is inversely related to quantity demanded. As price falls, demand rises and it shrinks when price rises. It is to be noted here that we have assumed 'other factors' to be constant. Thus, any changes in these factors such as tastes, fashion, income or prices of related goods etc, will falsify the law of demand. In that case, the demand curve will not behave in the manner stated above. For instance, if income of consumer rises at the time when price of goods have risen, demand will not go down. Rather, it may increase. We do not bother of rise in price of goods when our income also increases.

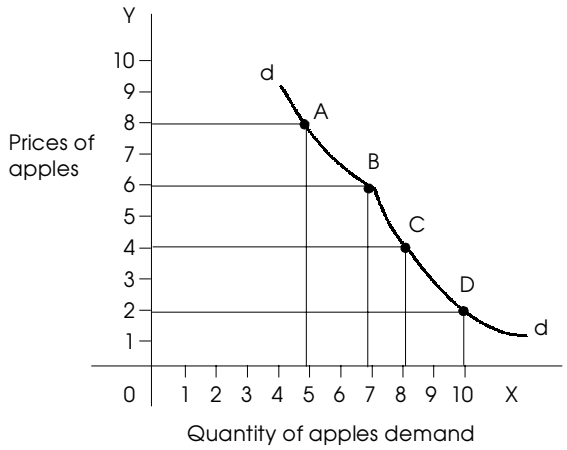


Fig. 4.3

Why does the Law of Demand Operate?

Demand curve by and large slopes downward to the right. This is because of operation of the law of diminishing marginal utility. When the price of a commodity decreases, new demand is created. Also that existing buyers buy more. As the particular commodity has become cheaper, some people will purchase it in preference to other commodities. If the law of diminishing marginal utility is true, the demand curve must slope downwards. This is because only a downward sloping demand curve represents increase in demand due to fall in the prices of a commodity. Further, when price of a commodity falls, real income of the people increases. In other words, they are able to buy more goods and services now with the same amount of money they have. This is called **income effect.**

Likewise, when the commodity is cheaper, it tends to be substituted for other commodities, which are dearer. This is called **substitution effect.** Both income effect and substitution effect together increase the capacity of the consumers to buy more of a commodity, when its price comes to low level.

Another reason for downward sloping demand curve is that when a commodity becomes cheaper, it can be put to more uses or not so urgent uses. This also makes demand to be greater when price falls.

Exceptions to the Law of Demand

There are a few exceptions to the law of demand. It means those conditions when the law does not hold good. These are:

1. There are certain goods called as Giffen goods. In case of such goods, the law of demand does not hold good. Sir Francis Giffen observed that when Irish potato prices increased in bad years, people curtailed spending on other commodities and increased their spending on potatoes. Because with high potato prices and no increase in their money incomes, they were now too poor to afford meat and other foodstuffs. So they had to sustain themselves by eating more potatoes. That is people demanded more potatoes when their prices increased and vice versa. This is called **Giffen Paradox.** (Also see note on Giffen goods at the end of this chapter.)
2. In case of conspicuous consumption, as observed by Thorstein Veblen, the demand curve does not slope downwards. Sometimes people buy some products to show their status in the society. The possession of such commodities, they feel, may confer a higher level of social status on their holder. These goods are diamonds and other precious stones etc. Rich class buys such goods at very high price to show that they belong to a prestigious class. (Also see note on Veblen goods at the end of this chapter.)
3. The law of demand also not applies to a commodity whose quality is judged by its high price. At high prices, some people buy more of such commodity than at lower price thinking that high priced are better than those priced lower. This is out of sheer ignorance that people act in such a way.
4. Speculation (a guesswork or prediction of a future event and act accordingly) is another exception to the law of demand. If the price of commodity is increasing and people expect a further rise in the price, they will tend to buy more of the commodity at higher price than they did at the lower price. It is observed that when there is a hike in edible oil prices recently, some people purchased more of it in the expectation that future prices will be even more.

MOVEMENT ALONG AND SHIFTS IN DEMAND CURVE

A distinction between movement along the demand curve and shifts in the demand curve is very important while studying demand theory. Movement along the demand curve takes place when there is a change in price of a good, other things remaining same. This is also termed as a change in Quantity demanded. That is changes in demand due to a change in the price of a commodity, other things being equal. In other words, when either due to increase or decrease in the price of a good, the demand increases, then it is seen that the demand curve remain the same; only the equilibrium position on the demand curve is changed. This is called extension and contraction in demand. Thus when quantity demanded of a good rises due to the decrease in price alone, it is said that extension of demand have taken place. And quantity demanded falls due to rise in price; it is called contraction in demand. The extension and contraction in demand is illustrated in the Fig. 4.4.

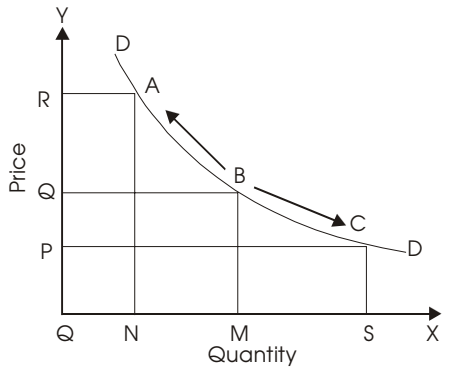


Fig. 4.4

Assuming other factors such as tastes, income and price of related goods constant, demand curve DD is drawn. At OQ price, OM of the commodity is demanded so that the equilibrium point is at B. If price falls to OP, the quantity demanded increases to OS but the consumer remains on the same curve DD; only equilibrium position moves from B to C. In case of rise in price to OR, demand shrinks to ON and the equilibrium position also moves to the left from B to A. This is called contraction in demand. The extension and contraction in demand take place only due to changes in the price of a commodity, other factors remaining same.

Now let us explain shifts in the demand curve. A demand curve either shifts to the right or left, due to changes taking place in other factors and not price of the commodity. The change in the position of the demand curve due to these changes can be termed as the increase and decrease in demand. When due to changes in the factors such as tastes, fashion, price of related commodities, income etc, the demand curve shifts upwards or to the right, increase in demand is said to have taken place. Similarly, when less is demanded at the same price due to changes in other factors, it is called decrease in demand. Here, the demand curve gets shifted leftward. Thus increase in demand is due to the following factors:

1. Taste and fashion/preferences are more favourable for the good.
2. Income of the consumer increases.
3. Price of substitutes has risen.
4. Price of complementary goods has declined.
5. Propensity to consume of the people has increased.
6. Numbers of consumers have increased.

Likewise, decrease in demand may take place due to the following reasons:

1. Taste and fashion/preferences are not favourable for the good.
2. Income of the consumers has fallen.
3. Price of substitutes has fallen.
4. Price of complementary goods has risen.
5. Propensity to save of the people has increased.

Increase and decrease in demand (shifts in the demand curve) is shown in the Fig. 4.5. DD is the demand curve when price is OP. At this price, ON quantity is bought. When consumer's income falls, price remaining same, demand curve shifts to the left as D″ D″. The consumer buys less of the same commodity, i.e, ON″ now. When income rises, price remaining same, consumer is able to buy more, i.e., ON′. In such case, the demand curve shifts to the right as D′D′.

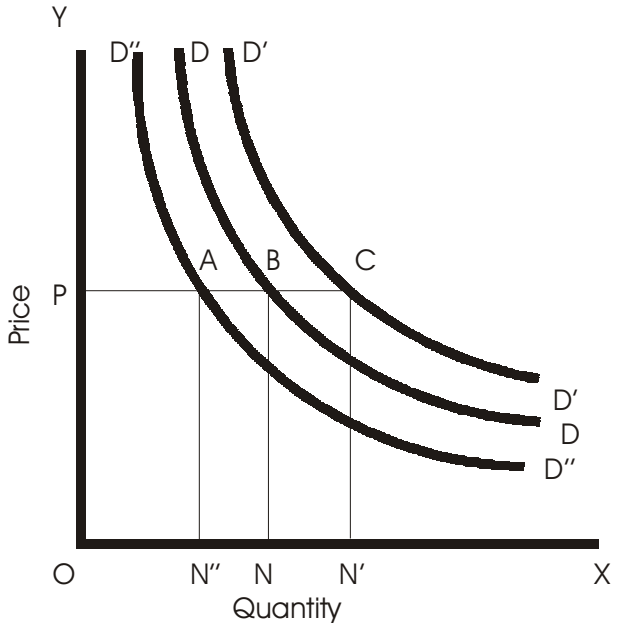
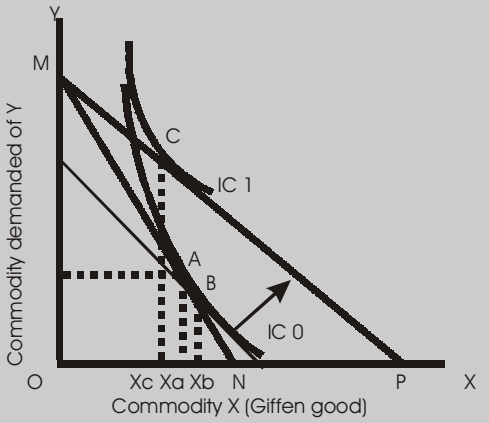


Fig. 4.5

A NOTE ON GIFFEN GOODS

Giffen goods have positive price elasticity of demand. We know that for most products, price elasticity of demand is negative. In other words, price and demand pull in opposite directions; price goes up and quantity demanded goes down, or vice versa. Giffen goods are an exception to this. When price goes up the quantity demanded also goes up, and vice versa. In order to be a true Giffen good, price must be the only thing that changes to get a change in demand. Giffen goods are named after Sir Robert Giffen, who was attributed as the author of this idea by Marshall in his book *Principles of Economics*. The classic example given by Marshall is of inferior quality staple foods whose demand is driven by poverty, which makes their purchasers unable to afford superior foodstuffs. As the price of the cheap staple rises, they can no longer afford to supplement their diet with



better foods, and must consume more of the staple food. Marshall wrote in the 1895 edition of *Principles of Economics*:

"*As Mr. Giffen has pointed out, a rise in the price of bread makes so large a drain on the resources of the poorer labouring families and raises so much the marginal utility of money to them, that they are forced to curtail their consumption of meat and the more expensive farinaceous foods: and, bread being still the cheapest food which they can get and will take, they consume more, and not less of it."*

There are three necessary preconditions for this situation to arise:

1. The good in question must be an inferior good,
2. There must be a lack of close substitute goods, and
3. The good must comprise a substantial percentage of the buyer's income.

If precondition no-1 is changed to "The good in question must be so inferior that the income effect is greater than the substitution effect" then this list defines necessary and sufficient conditions. This can be illustrated with a diagram above. Initially the consumer has the choice between spending their income on either commodity Y or commodity X as defined by line segment MN (where M = total available income divided by the price of commodity Y, and N = total available income divided by the price of commodity X). The line MN is known as the consumer's budget constraint. Given the consumer's preferences, as expressed in the indifference curve IC_0, the optimum mix of purchases for this individual is point A. If there is a drop in the price of commodity X, there will be two effects. The reduced price will change relative prices in favour of commodity X, known as the substitution effect. This is illustrated by a movement down the indifference curve from point A to point B (a pivot of the budget constraint about the original indifference curve). At the same time the price reduction causes the consumers' purchasing power to increase, known as the income effect (a outward shift of the budget constraint). This is illustrated by the shifting out of the dotted line to MP (where P = income divided by the new price of commodity X). The substitution effect (point A to point B) raises the quantity demanded of commodity X from Xa to Xb while the income effect lowers the quantity demanded from Xb to Xc. The net effect is a reduction in quantity demanded from Xa to Xc making commodity X a Giffen good by definition. Any good where the income effect more than compensates for the substitution effect is a Giffen good.

A 2002 preliminary working paper by Robert Jensen and Nolan Miller made the claim that rice and noodles are Giffen goods in parts of China. In 1991, Battalio, Kagel, and Kogut proved that quinine water is a Giffen good for lab rats. Some types of premium goods (such as expensive French wines, or celebrity endorsed perfumes) are sometimes claimed to be Giffen goods. It is claimed that lowering the price of these high status goods can decrease demand because they are no longer perceived as exclusive or high status products. However, the perceived nature of such high status goods changes significantly with a substantial price drop. This disqualifies them from being considered as Giffen goods, because the Giffen goods analysis assumes that only the consumer's income or the relative price level changes, not the nature of the good itself. If a price change modifies consumers' perception of the good, they should be analyzed as Veblen goods.

VEBLEN GOOD

A commodity is a Veblen good if people's preference for buying it increases as a direct function of its price. The definition does not require that any Veblen goods actually exist. However, it is claimed that some types of high-status goods, such as expensive wines or perfumes are Veblen goods, in that decreasing their prices *decreases* people's preference for buying them

because they are no longer perceived as exclusive or high status products. The Veblen effect is named after the economist Thorstein Veblen, who invented the concepts of conspicuous consumption and status-seeking.

The Veblen effect is one of a family of theoretically possible anomalies in the general theory of demand in microeconomics. The other related effects are:

1. The snob effect: preference for good decreases as the number of people buying it increases;
2. The bandwagon effect: preference for good increases as the number of people buying it increases;
3. The **counter-Veblen** effect, in which preference for good increases as its price falls.

The concept of the counter-Veblen effect is less well known, was introduced by Lea. [(Lea, S. E. G., Tarpy, R. M., & Webley, P. (1987). *The individual in the economy*. Cambridge: Cambridge University Press.]

None of these effects in itself predicts what will happen to actual demand for the good (the number of units purchased) as price changes - they refer only to preferences or propensities to purchase. The actual effect on demand will depend on the range of other goods available, their prices, and their substitutability for the goods concerned. The effects are anomalies within demand theory because the theory normally assumes that preferences are independent of price or the number of units being sold. They are therefore collectively referred to as **interaction effects**.

Questions for Review

1. What do substitute goods mean?
2. What do complementary goods mean?
3. What is increase in demand?
4. What is contraction in demand?
5. Distinguish between increase in demand and extension in demand.
6. When does a consumer buy more of a commodity at a given price?
7. Mention any one determinant of demand for a commodity other than its price.
8. Why does demand curve slope downwards from left to right?
9. Define demand.
10. What is demand schedule?
11. Explain law of demand. Illustrate your answer with appropriate diagram.
12. What factors influence the demand for a commodity?
13. What are Giffen's goods?
14. What is the shape of a demand curve?
15. What happens to demand when there is a contraction in demand?
16. What factors determine demand?
17. What are inferior goods?
18. State the relationship between demand & price.
19. Give an example of a pair of commodities that are substitutes of each other. (NCERT)
20. Give an example of a pair of commodities such that one of them is complementary in consumption to the other. (NCERT)

21. If the price of good X rises and it leads to an increase in demand for good Y, how are the two goods related? (NCERT)

22. If the price of good X rises and it leads to decrease in demand for good Y, how are the two goods related? (NCERT)

23. What is meant by cross price effects? (NCERT)

24. How will an increase in the price of coffee affect the demand for tea? (NCERT)

25. How will an increase in the price of tea affect the demand for sugar? (NCERT)

26. Give two examples of normal goods and two examples of inferior goods. (NCERT)

27. How does an increase in income affect the demand curve for a normal good? (NCERT)

28. How does an increase in income affect the demand curve for an inferior good? (NCERT)

29. How the market demand curve is derived from the individual demand curves? (NCERT)

30. What are the determinants of market demand curve? (NCERT)

31. What is market demand?

32. Give examples of substitute goods.

33. Give examples of complimentary goods.

34. What is demand curve?

35. What is meant by the phrase—'Ceteris paribus'?

36. What are the assumptions of law of demand?

37. Explain the terms-Income effect and Substitution effect.

38. What are the important exceptions to the law of demand?

39. What is Giffen Paradox?

40. What is conspicuous consumption?

41. Distinguish between movement along the demand curve and shifts in the demand curve.

42. What is meant by a change in quantity demanded?

43. What do you mean by extension in the demand curve?

44. Distinguish between extension and increase in demand curve.

45. Distinguish between contraction and decrease in demand curve.

46. What are the causes of increase in the demand curve?

47. What are the causes of decrease in the demand curve?

48. Show with the help of diagrams, shifts in the demand curve and movement along then demand curve.

5 ELASTICITY OF DEMAND

MEANING OF PRICE ELASTICITY OF DEMAND

Elasticity, roughly, means responsiveness. What response demand of a commodity shows when there is either increase or decrease in its price, is explained with the help of elasticity. Managers have great advantages by knowing elasticity of the products he is selling. Greater response means greater elasticity and small response indicates less elasticity. A manager is very interested in knowing whether sales will increase by 4 percent, 10 percent or more by cutting down price by 8 percent. Elasticity of demand, thus, measures the degree of responsiveness of demand to a change in price of the commodity. Prof. Alfred Marshall had introduced the concept of elasticity of demand in the economic theory. In his words, *"The elasticity (or responsiveness) of demand in a market is great or small according as the amount demanded increases much or little for a given fall in price and diminishes much or little for a given rise in price."* We may thus define elasticity of demand as the ratio of the percentage change in quantity demanded to the percentage change in price.

Demand may be elastic or inelastic. When due to a small change in price, there is a great change in demand, it is said that demand is elastic. If a 5 percent cut in prices of car results in an increase in 30 percent in sales, demand is said to be highly elastic. In other words, demand has responded greatly. On the other hand, if a great change in price is followed by a small change in demand, it is inelastic demand. For example, the demand for salt is said to be inelastic because same quantity of it will be purchased even if price rises or declines. Whereas, demand for a car is elastic because a small rise/fall in price may greatly reduce/increase its demand. Price elasticity of demand is expressed as under:

$$E_p = \frac{\text{Percentage change in demand}}{\text{Percentage change in price}}$$

There are five **cases/kinds of price elasticity of demand.** These are as follows:

1. **Perfectly Inelastic Demand:** Demand for a commodity will be said to be perfectly inelastic, if the quantity demanded does not change at all in response to a given change in price. If 10 percent change in price results in zero percent change in demand, it is exactly inelastic demand. The demand curve, in this case, is vertical straight line perpendicular to Y-axis as shown in Fig. 5.1.

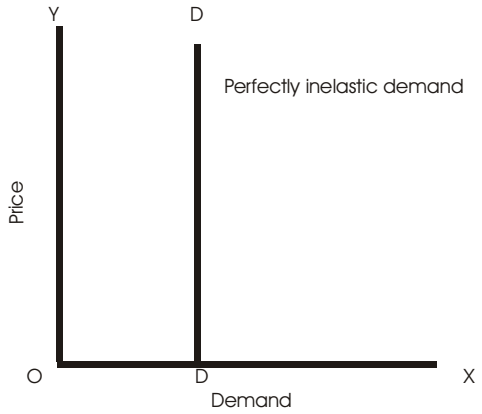


Fig. 5.1

2. **Inelastic or less than Unit Elastic Demand:** Demand for commodity will be said to be inelastic (or less than unit elastic) if the percentage change in quantity demanded is less than the percentage change in price. If 10 percent change in price results in 6 percent change in demand, it is inelastic demand. This is shown in Fig. 5.2.

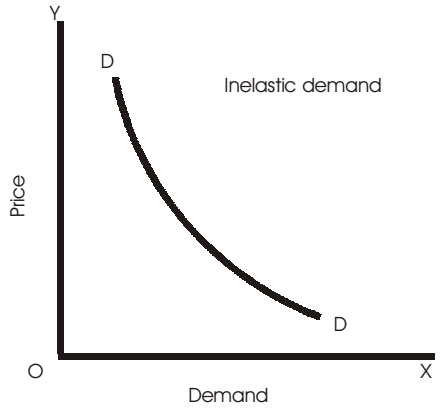


Fig. 5.2

3. **Unitary Elastic Demand:** Demand for a commodity will be said to be unit elastic if the percentage change in quantity demanded equals the percentage change in price. If 10 percent change in price results in 10 percent change in demand, it is unit elastic demand. The demand curve in such case is called rectangular hyperbola shown in the adjacent Fig. 5.3.

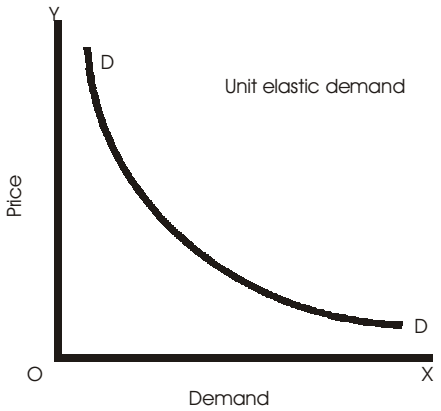


Fig. 5.3

4. **More than Unit Elastic:** Demand for a commodity will be said to be more than unit elastic if a change in price results in a significant change in demand for this commodity. If 10 percent change in price results in 14 percent change in demand, it is elastic demand. Figure 5.4 below shows elastic demand.

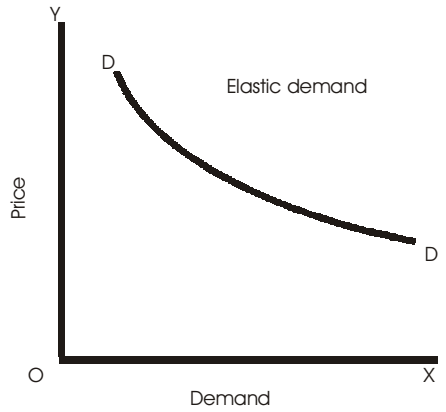


Fig. 5.4

5. **Perfectly Elastic Demand:** Demand for a commodity is said to be perfectly elastic, when a small change in its price results in an infinite change in its quantity demanded. If 10 percent change in price results in (α) percent change in demand, it is exactly elastic demand. In this case, demand curve is horizontal straight line parallel to X-axis as shown in Fig. 5.5. The first and the last cases are rare in real life.

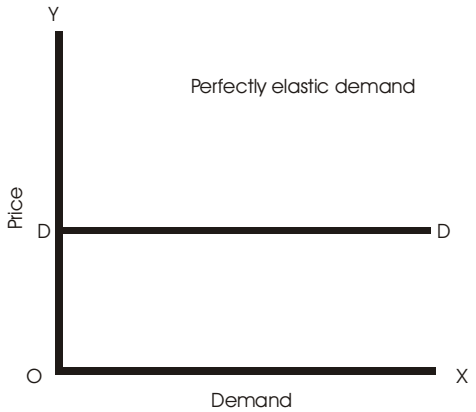


Fig. 5.5

Thus, we can summarize the types of elasticity in the table below:

Percentage change in price	*Percentage change in demand*	*Types*	*Coefficient of elasticity*
10	0	Perfectly inelastic	$e = 0$
10	6	Inelastic	$e < 1$

Contd....

10	10	Unit elastic	$e = 1$
10	14	Elastic	$e > 1$
10	α	Perfectly elastic	$e = \alpha$

The table shows how a 10% change in price of a good influences quantity demanded. If there is no change or zero change in quantity demanded, elasticity is perfectly inelastic. Likewise, if the change is relatively less, demand is inelastic. In case of same change and more changes in demand, elasticity is unitary and elastic demand respectively. When there is very great change, demand is perfectly elastic.

MEASUREMENT OF PRICE ELASTICITY OF DEMAND

It is very important to know to what extent demand is responsive, that is elastic or inelastic. For this purpose measurement of elasticity is necessary. The important methods to measure elasticity are the following:

1. Percentage method.
2. Arc method.
3. Total outlay method.
4. Point/Geometrical method.
5. Revenue method.

Total Outlay/Expenditure Method

Elasticity of demand for a commodity can be measured with the help of the Total Outlay/ expenditure incurred by a household on the purchase of a commodity. Total outlay is (TQ = $p \times q$) where TQ stands for total outlay, p and q for price and quantity respectively. This method provides us with three different measurements of the elasticity of demand, which are as follows:

(1) Less than Unit Elastic ($e < 1$)

(2) Unit Elastic ($e = 1$)

(3) More than Unit Elastic ($e > 1$)

Total outlay method to measure elasticity of demand was primarily used by Prof. Marshall. According to this method, elasticity is measured by comparing the total money spent by the consumer on the goods before and after the changes in price. Elasticity can be measured for the following three situations:

1. **Unit elasticity (e = 1):** When the total money, outlay, or expenditure (TE) remains unchanged even after a change in the price of the commodity, elasticity is said to be unitary. Take for instance the following example, where TE remains the same. It is seen that when price falls to Rs 2 per unit, total expenditure does not change.

Price (Rs. Per unit)	*Quantity (Q)*	*Total Expenditure (TE)*
5	10	50
2	25	50

2. **More than unit elastic (e > 1):** When the total money expenditure rises with a fall in price and falls with a rise in price, it is the case of elasticity greater than one or elastic demand. This will be clear from the table. When price falls from Rs. 5 to Rs. 2 per unit, total expenditure rises from Rs. 50 to Rs. 60. Thus there is inverse relationship between price and total expenditure.

Price (Rs. Per unit)	*Quantity (Q)*	*Total Expenditure (TE)*
5	10	50
2	30	60

3. **Inelastic demand (e < 1):** When the total money expenditure rises with an increase in price and falls with a fall in price, it is the case of inelasticity of demand or elasticity less than one. The adjacent table shows this case. In this case, when price decreases, total expenditure also declines. Thus price and total expenditure have direct relationship.

Price (Rs. Per unit)	*Quantity (Q)*	*Total Expenditure (TE)*
5	10	50
2	15	30

The Fig. 5.6 below also depicts how price elasticity can be measured with the help of total outlay method. Demand is unit elastic over the price range R and Q; inelastic over the price range S and R and elastic over the price range P and Q.

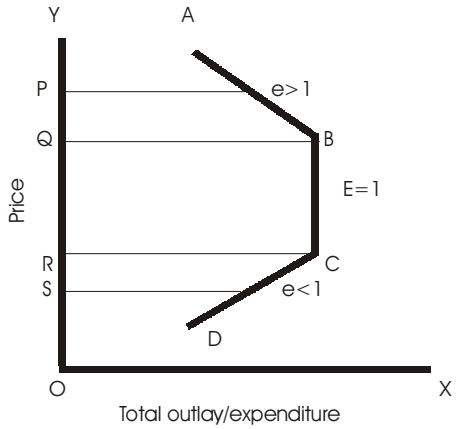


Fig. 5.6

Percentage Method

Price elasticity of demand can also be measured with the help of percentage method or proportionate method. According to this method, percentage change in price is compared with the percentage change in demand. Elasticity is the ratio of the percentage change in quantity demanded to the percentage change in price as expressed below:

$$E_p = \frac{\text{Percentage change in demand}}{\text{Percentage change in price}}$$

$$= \frac{\dfrac{\text{change in quantity demanded}}{\text{quantity demanded}}}{\dfrac{\text{change in price}}{\text{price}}}$$

$$= \frac{\Delta q}{q} \div \frac{\Delta p}{p}$$

$$= \frac{\Delta q}{q} \times \frac{\Delta p}{p}$$

$$e_p = \frac{\Delta q}{p} \cdot \frac{\Delta p}{q}$$

Where, e_p = price elasticity; Δq = change in quantity demanded; Δp = change in price; p = price; q = quantity.

Note: The elasticity of demand is always negative. This is because price and quantity are inversely related. But by convention, for the sake of simplicity, the minus sign is dropped in economics.

Arc Method

This is another important method to measure price elasticity of demand. In this method, we take the averages of original and new prices and quantities to measure elasticity. This method is used when there is a big change in price so that an arc is formed on the demand curve. It can be measured by using the formula shown below:

$$= \frac{\dfrac{\Delta q}{\dfrac{q' + q''}{2}}}{\dfrac{\Delta p}{\dfrac{p' + p''}{2}}}$$

$$= \frac{\Delta q}{q' + q''} \div \frac{\Delta p}{p' + p''}$$

$$e_p = \frac{\Delta q}{\Delta p} \cdot \frac{p' + p''}{q' + q''}$$

Where, p' = original price; p'' = new price; q' = original quantity; q'' = new quantity.

Point/Geometrical Method

This method measures elasticity using demand curve. It is, therefore, also called as geometrical method of measuring elasticity. The diagram below illustrates how to find different types of

elasticity on a demand curve. DD is the straight line demand curve (constant slope). Elasticity is measured as under,

$$E = \frac{\text{Lower segment of the demand curve}}{\text{Upper segment of the demand curve}}$$

All five cases are shown in the Fig. 5.7 below. We find that elasticity of demand falls steadily as we move from D″ toward D.

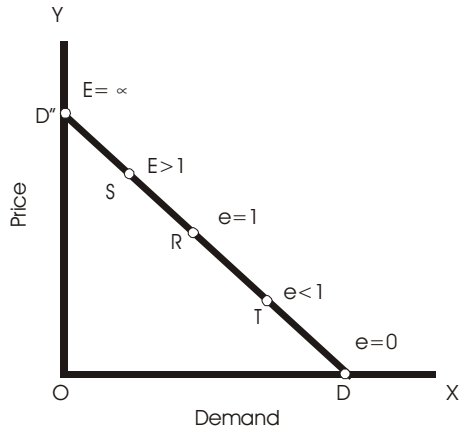


Fig. 5.7

For instance, let us find elasticity at point R using the above expression.

$$E = \frac{RD}{RD''} = 1$$

$\because$ $RD = RD''$

Similarly, elasticity at different points is shown as under:

At D′: $E = \frac{D''D}{0} = \infty$

At S: $E = \frac{SD}{SD''} > 1$

At T: $E = \frac{TD}{TD''} < 1$

At D: $E = \frac{0}{DD''} = 0$

Revenue Method

Revenue is the amount that a firm earns by selling its products. It is measured by multiplying price with total quantity/units of product sold. Thus, TR = Quantity × Price. Elasticity can be measured using the concepts of average and marginal revenue shown as under.

$$E = \frac{\text{Average revenue}}{\text{Average revenue} - \text{Marginal revenue}}$$

Income Elasticity of Demand

It is the ratio of the percentage change in the amount spent on the commodity to a percentage change in the consumer's income, price remaining constant. That is,

$$Ie = \frac{\text{Proportionate change in demand}}{\text{Proportionate change in income}}$$

Cross Elasticity of Demand

The responsiveness of demand to a change in the prices of related commodities (substitutes and complementary) is called cross elasticity of demand. It is responsiveness of demand for commodity X to a change in price of commodity Y and is represented as follows:

$$Cc = \frac{\text{Proportionate change in demand of X}}{\text{Proportionate change in price of good Y}}$$

DETERMINANTS OF PRICE ELASTICITY OF DEMAND

Elasticity of demand differs from commodity to commodity. The various factors upon which elasticity depends are the following:

1. **Substitute goods:** A commodity will have elastic demand if there are good substitutes for it. This is because when price of a good rises, a consumer will not buy the good but purchase its substitute.
2. **Nature of commodity:** All necessities like salt, rice etc that have no substitutes/or less substitutes will have an inelastic demand. People have to purchase such commodities for their sustenance. Therefore, there will be some demand despite the changes in price. Demand for luxury goods, on the other hand, will be elastic. If prices of such commodities rise even a little, consumers refrain to buy. At the same time a little lowering of price of such commodities attract a large number of consumers.
3. **Number of uses of commodity:** The larger the number of uses to which a commodity can be put, the higher will be its elasticity. Therefore the demand of such goods will have elastic demand. For example, milk can be used for various purposes such as for making curd, cake, sweets etc. When its price goes down, demand increases but a little rise in its price makes demand fall greatly.
4. **Possibility of postponement of consumption:** If there is a possibility of postponement of consumption of a commodity then demand will be elastic otherwise inelastic. Demand for certain goods can be postponed for sometime such as computers, printers, scanners etc. People may wait till they become cheaper. Therefore, their demand is elastic. But the demand for food or electricity cannot be postponed. As such their demand is inelastic.

5. **Percentage of income spent:** The elasticity of demand is also influenced by the percentage of income spent on the purchase of a commodity. If the percentage is very less then the demand will be inelastic. For instance, we spend a very less amount of our total money income on things like agarbatties (incense sticks), matches, pens, pencils etc. If prices of such commodities rise also, our demand is not reduced. Thus, demand of such goods is inelastic.
6. **Fashion:** Commodities, which are in fashion, will have inelastic demand. Fashion minded people do not compromise with price. Even if price is high, some people will demand more just because goods are in fashion.
7. **Change in taste:** A habitual commodity or a commodity for which consumers have developed a taste will have inelastic demand. A chain smoker always requires a cigarette, whatever the price may be. Likewise, a habitual paan (betel nut) chewer cannot leave his habit, in spite of rise in price. In such cases, therefore, demand is elastic.
8. **Price of the commodity:** Very high priced or very low priced goods have low elasticity whereas moderately priced commodities are quite high-elastic. If a good is very expensive, demand will not increase much even if there is little fall in its price. And demand will not increase even at very low prices, because people have already purchased their requirement at low prices.

Questions for Review

1. What is the shape of the perfectly inelastic demand curve?
2. What is the shape of the unitary elastic demand curve?
3. What is the shape of the perfectly elastic demand curve?
4. Define price elasticity of demand for a commodity and state its importance.
5. When is demand said to be inelastic?
6. How would you measure price elasticity of demand by the total outlay method? Explain.
7. Define price elasticity of demand. How can it be measured?
8. What will be the shape of demand curve when the demand is unitary elastic?

6 THEORY OF PRODUCTION

UNIT-3

So far we have made an analysis of how a consumer behaves and his demand for a commodity. Now we shall see concepts related to production, which are very useful for a producer in his decision making.

MEANING OF PRODUCTION

Production in economics generally refers to the transformation of inputs into outputs. Inputs are the raw materials or other productive resources used to produce final products i.e., output. In technical terms, production means the creation of utility or creation of want-satisfying goods and services. Any good become useful for us or satisfies our want when it is worth consumption. Thus, a good can be made useful by adding utility. For instance, we cannot consume wheat flour raw when we are hungry (want), unless it is turned into bread (output). This conversion of wheat flour into bread is the process of creating utility. Utilities can be created in three ways. These are the following:

1. *By changing form or shape and size of a good.* The powdery wheat flour has been changed to slices of bread. Thus form of the good has been changed. Likewise, a carpenter giving shape of a chair to a piece of wood or a chef turning a lump of dough into delicious pizzas, are the examples of changing shape or size of a good/s and thereby creating utility.
2. Using the scarce goods and services in proper time when they are most required. Government maintains a buffer stock so that during the time of crisis, it releases food grains in the market to meet the demand.
3. By transferring a good from one place to another where its use is worthwhile. Sand transferred from river side to construction site increases its utility.

Thus, production is the process of adding utility to a good through form utility, place utility and time utility.

MEANING OF PRODUCTION FUNCTION

Production function is defined as the functional relationship between physical inputs and physical outputs. According to Stigler, "*the production function is name given to the relationship*

between the rates of input of productive services and the rate of output of product. It is the economist's summary of technological knowledge." Production function can be expressed as follows:

$$Q = f(a, b, c, d\ldots)$$

Where, Q stands for output, *a, b, c, d*…. are the productive resources or inputs that help producing Q output; *f* refers to function. Thus Q is the function of *a, b, c, d*….., which means Q depends upon *a, b, c, d*…..

Thus a production function shows the maximum amount of output that can be produced from a given set of inputs in the existing state of technology.

RETURNS TO A FACTOR AND RETURNS TO SCALE

There are generally two types of production functions mostly used in economics. First, the production function when the quantities of some inputs are kept fixed and the quantity of one or few input/s are changed. This kind of production functions are studied under law of variable proportions. These are also called short-run production function. The short-run is a period during which one or more factors of production are fixed in amount. There is no time to change plants or equipments of an enterprise.

Secondly, the production functions in which all inputs are changed. This forms the subject matter of the law of returns to scale. These are also called long-run production function. The long run is a period during which all factors become variable. A new plant can be constructed in place of an old one.

Law of Variable Proportions/Law of Diminishing Returns

Law of variable proportions occupies an important place in the economic theory. It examines the production function with one factor variable, keeping the quantities of other factors constant. This law tells us how the total output or marginal output is affected by a change in the proportion of the factors used. The law states that when one factor is increased keeping others fixed, the marginal and average product eventually declines. According to Stigler, *"As equal increments of one input are added; the inputs of other productive services being held constant, beyond a certain point the resulting increments of product will decrease, i.e., the marginal products will diminish."* Thus, an increase in the quantities of a variable factor to a fixed factor results in increase in output to a point beyond which it eventually declines.

Assumptions of the law

The law assumes the following:

1. The state of technology is assumed to be constant.
2. There must be some inputs whose quantity is kept fixed.
3. The law is based upon the possibility of varying the proportions in which the various factors can be combined to produce a product. It cannot be applied to the cases where the factors must be used in fixed proportions to yield a product.

The law of variable proportions is explained with the help of following table.

No. of workers	*Total product**	*Marginal product**	*Average product**
1	10	10	10
2	30	20	15
3	60	30	20
4	88	28	44
5	100	12	50
6	110	10	55
7	118	8	16.85
8	118	0	14.75
9	110	–8	12.22
10	100	–10	10

*Products (in kg)

With a given fixed quantity of land, numbers of workers are increased from 1 to 10. When there are 7 workers engaged, the output is maximum, i.e., 118 kgs. Beyond this point, the total product starts diminishing. Up to 3rd unit of worker, the total product increases at an increasing rate and after that at diminishing rate. This is clear from the third (MP) column that marginal product is falling continuously after 3rd unit of worker and even becomes negative beyond 8th unit of worker. Average product increases up to 4th unit of labour and falls through out thereafter. The law can be also explained using Fig. 6.1 shown as under:

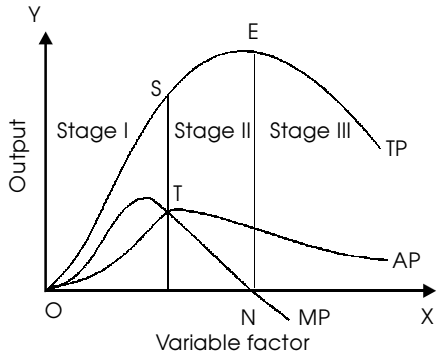


Fig. 6.1

In this figure, OX axis measures units of variable factor and OY axis measures output-total, marginal and average products. We observe three different stages of law of variable proportions as explained below:

1. The **first stage** goes from the origin to point where the average output is the maximum (point S). In this stage, marginal product increases. This stage is known as the stage of increasing returns. The reason for increasing returns is that when more and more units of the variable factor are added to the constant quantity of fixed factor, then fixed

factor is more effectively and intensively used. This causes output to increase at a fast rate.

2. The **second stage** goes from the point where the average output is maximum to the point where marginal output is zero (point N). In this stage, marginal product starts falling. When the fixed factor is most efficiently used, then further increase in the variable factor causes marginal and average products to decline because the fixed factor now is scarce relative to the quantity of variable factor. Therefore, this stage is known as the stage of diminishing returns.
3. The **third stage** starts when the total product is maximum and marginal product is zero. In this stage, marginal product becomes negative. In this stage, the number of variable factors becomes too large relative to the fixed factor so that the total output falls and marginal output becomes negative. This is the reason why this stage is known as the stage of negative returns.

Returns to Scale

Scale of production relates to size of plant. Every entrepreneur has to decide about the size of his plant or business. The question is how large a business should be. Because up to a certain size of plant what is called 'economies of scale' take place. Economies refers to benefits arise due to the expansion of a business. Economies of scale can be broadly divided into two categories-internal and external. Internal economies are caused by some internal factors, which arise within the firm and are not shared by other firms. Use of better technology, purchase of raw materials at cheaper rates and selling the final goods at high price, easy availability of finance from financial institutions etc, are some examples of internal economies/benefits that a firm enjoys. External economies are those advantages which are available to all firms located in an area. Development of transportation, good and fast communication, good banking and insurance facilities, etc are the examples of external economies. Too big or too small size of plant or business is not viable in the economic sense. Optimum scale, which at least covers up cost per unit of output, is more desirable than too small or too large plant.

The study of changes in output as a result of changes (increase or decrease) in the scale is the subject matter of returns to scale. An increase/decrease in the scale refers to increase/ decrease in all inputs in the same proportion. Thus in returns to scale we study the effect of doubling or trebling and so on of all inputs on the total output. The law can be explained with the help of a table shown below :

Scale	*TP*	*MP*	*Stage*
1 lab + 2 units of land	3	3	
2 lab + 4 units of land	7	4	I
3 lab + 6 units of land	12	5	
4 lab + 8 units of land	18	6	
5 lab + 10 units of land	24	6	II
6 lab + 12 units of land	30	6	

Contd....

7 lab + 14 units of land	35	5	
8 lab + 16 units of land	39	4	III
9 lab + 18 units of land	42	3	

Thus we find three phases of returns to scale explained as under. Up to 4th labour, marginal product or returns increases. Returns are constant over the 5th and 6th units of labour and thereafter, returns begin to decline.

Stage I: Output increases in a greater proportion than the increase in inputs. Thus if all inputs are increased by 10%, and as result output increases by 20%, then increasing returns to scale operates. This is also shown in the Fig. 6.2 below. In the beginning when the scale is increased, increased division of labour is possible and is undertaken, as result of which, output increases rapidly.

Stage II: If all inputs are increased in a given proportion and the output increases in the same proportion then returns to scale is constant. More clearly, if all inputs are increased by 10%, and as result output also increases by 10%, then constant returns to scale prevails. Up to a certain point division of labour is possible. After such a point, further increase in scale will make returns to remain constant.

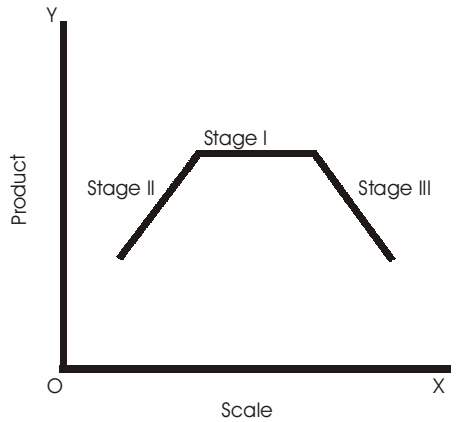


Fig. 6.2

Stage III: If all inputs are increased in a given proportion and the output increases in less than that proportion then returns to scale is diminishing. That is, if all inputs are increased by 10%, and as result output also increases by 6%, then diminishing returns to scale prevails. When scale is increased to a point when division of labour is not possible, returns begins to decline.

Questions for Review

1. What are returns to scale?
2. Give two reasons for the operation of the law of increasing returns to scale.
3. Distinguish between 'Returns to scale' and 'Returns to a variable factor.'
4. How can the scale of production be raised in the long run?

5. Define the following:

(*a*) Production function

(*b*) Returns to factor

(*c*) Returns to scale

(*d*) Marginal product

6. Explain the law of diminishing returns. Draw an imaginary production schedule to depict the operation of this law. How can the law be kept in check?

7. Why do diminishing returns to a factor operate?

8. Complete the following table:

Units of capital	*Total product*	*Average product*	*Marginal product*
1			20
2			16
3			12
4			8
5			4
6			0
7			–4

9. List any three inputs used in production.

10. What is meant by total physical product?

11. What is the general shape of the MPP?

12. What is meant by marginal physical product?

13. Give the meaning of increasing returns to scale.

14. Give the meaning of constant returns to scale.

15. Give the meaning of decreasing returns to scale.

16. What is meant by law of variable proportions?

7

SUPPLY AND ITS DETERMINANTS

UNIT-3

MEANING OF SUPPLY

Supply refers to the amount of good offered for sale in the market at a given price. Supply should be distinguished from stock. Stock is the amount of good which can be brought into the market for sale at a short notice. Thus supply is the quantity actually brought in the market but stock is a potential supply. Let us substantiate with an example. A farmer produces 1000 kg of rice and at a particular price he is willing to offer for sale about 500 kg in the market. Here, the quantity offered for sale i.e., 500 kg is the supply whereas 1000 kg is the stock.

SUPPLY SCHEDULE

Supply schedule represents the relation between prices and the quantities of good supplied. It is a list of quantity supplied by producers at different prices. This is shown as under:

Price (in Rs.)	*Quantity supplied (in units)*
1	10
2	15
3	18
4	24
5	28
6	35

It is seen that when price is Re 1/-, quantity supplied is 10 units and as price increases, supply also increases. This shows that supply and price of the commodity are directly related.

SUPPLY CURVE

Supply curve is the graphical representation of the supply schedule. A supply curve is shown in the figure below.

In the Fig. 7.1, x-axis measures quantities of good supplied and y-axis measures price of the commodity. SS is the supply curve sloping upwards to the right, indicating that when price of the

commodity increases supply also increase. It should be noted here that if price of the product falls too much, producers refuse to supply any good. Thus the price below which the seller will refuse to sell is called the **reserve price**.

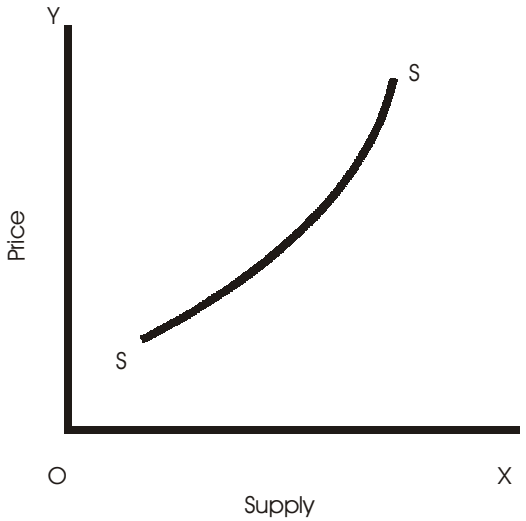


Fig. 7.1

MARKET SUPPLY

The total amount of goods supplied at various prices by all producers/sellers in a market is called market supply. A market supply schedule is shown as under. Let us assume that there are three sellers—A, B and C. Their individual supply schedule is shown in 2nd, 3rd and 4th columns respectively. Market supply is the sum of A's, B's and C's supply of a commodity. We find that the market supply schedule also behaves in the same way as an individual's supply of a commodity. That is, at higher price, supply is greater and vice versa.

Price (per unit)	*A's supply*	*B's supply*	*C's supply*	*Market supply (A + B + C)*
1	3	5	8	16
2	5	7	9	21
4	7	8	10	25
6	9	10	12	31
8	12	14	16	42
10	15	16	18	49

A market supply curve is the graphical representation of market supply and is derived by the lateral/horizontal summation of all individual sellers' supply curve in the market as shown in the Fig. 7.2.

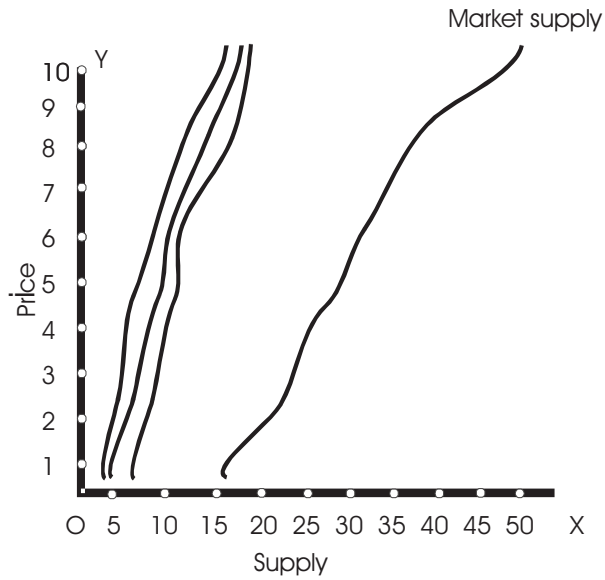


Fig. 7.2

LAW OF SUPPLY

The law of supply states that, other things remaining same, as the price of a commodity rises, its supply also rises and as the price falls, supply contracts. Thus supply and price of a commodity have direct/positive relationship, i.e., higher the price, larger will be the supply and vice versa. According to Marshall, "*As the prices rise, other things remaining same, the supply rises and as the price falls the supply decreases*". The law of supply can be explained through a supply schedule as shown under:

Price of apples (in Rs.)	*Quantity supplied (in units)*
1	5
2	10
3	15
4	20
5	25
6	30

It is seen in the table above that, as price of apples rise from Re. 1 to Rs. 6, sellers increase supply of apples from 5 units to 30 units. Thus price and supply varies directly. Higher the price, more is the supply and vice versa, other factors remaining constant. These factors are money income of sellers and buyers, technology, costs of all factors of production, taxes and subsidies, prices of related goods etc. The Fig. 7.3 below shows the supply curve, which is derived from the schedule above.

SS is the supply curve sloping upwards to the right indicating direct relationship between price and supply of a product.

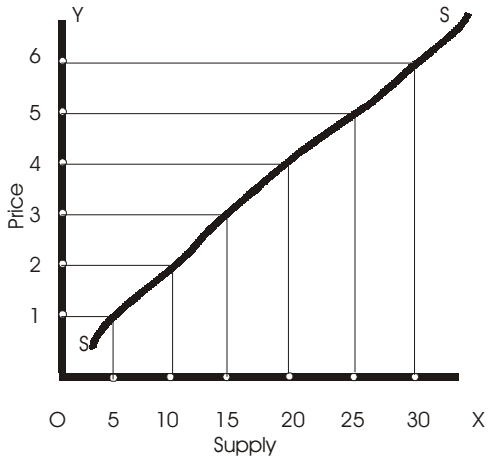


Fig. 7.3

DETERMINANTS OF SUPPLY

Supply of a commodity depends upon a number of factors. The important determinants of supply can be grouped together in a supply function as follows:

$$S_X = f(P_X, P_Y, F, T, G)$$

Supply function describes the functional relationship between supply of a commodity (say X) and other determinants of supply, i.e., price of the commodity (P_X), prices of related commodities (P_Y), price of the factors of production (F), technology (T) and goals (G) or general objectives of the producer.

Let us discuss the factors that determine supply of a product as under:

1. *Price of the product*: As already stated, price determines the supply of a product. When price is high, supply is more and vice versa. Producers are encouraged to produce more when price is high because of high profit margin.
2. *Technology:* The change in technology also affects supply of a product. It may reduce the cost of production and as a result supply will be more. Automatic and digital photocopier machines have increased the speed of photocopy per unit and hence large production.
3. *Price of factors:* Changes in prices of factors also cause a change in cost of production and thereby bring changes in the supply of the product. When costs of factors come down, it reduces the overall cost of production and as a result producers are induced to produce and supply more.
4. *Prices of other products:* Prices of substitutes and complements also affect the supply of a product. For example, if prices of tea rise, it will result in the reduction in the production and supply of coffee as the producers will withdraw resources from the production of coffee and devote these to the production of tea.
5. *Future price expectation:* If sellers expect the prices to rise in future, they would reduce supply of a product in the market and hoard the commodity to sell in the future.

This is specially done for earning high profits. For example, when traders expect that price of kerosene oil will rise further, they create artificial scarcity and stock so as to sell and reap high profits in future.

MOVEMENT ALONG AND SHIFTS IN SUPPLY CURVE

A movement along the same curve simply indicates changes in quantities offered as a result of a change in the price. When supply changes not due to changes in the price of the product but due to other factors, such as change in technology, changes in the prices of related commodities, changes in price of inputs etc, it is said to be shifts in supply curve.

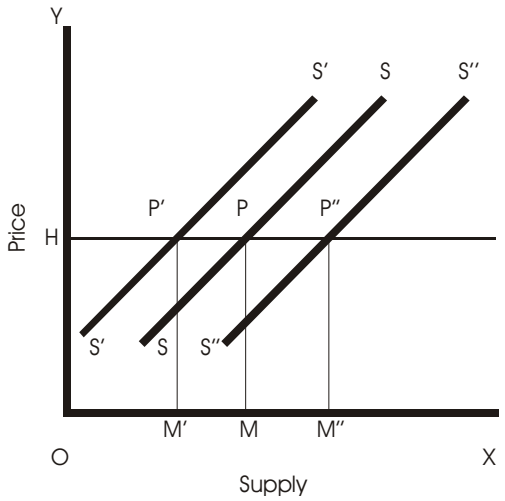


Fig. 7.4

Supply is said to increase (supply curve shifts to the right) when, price remaining same, more is offered for sale and decrease (supply curve shifts to the left) when, at the same price, less is offered for sale in the market. This is illustrated in the Fig. 7.4 above.

SS is the supply curve before the change. S′S′ shows a decrease in supply because at the same price OM′ (OM′ < OM) is offered for sale. S″S″ shows an increase in supply because at the same price OH, more is supplied (OM″ > OM).

When there is a change in price (rise/fall), supply also changes (increases/decreases) and the phenomena is called extension and contraction in supply. In this case, equilibrium point moves along the same supply curve-either to left or right. In Fig. 7.5, SS is the supply curve and the equilibrium point is E at OP price. When price falls to OP″, supply gets reduced by N″N and supply increases to ON′ when price rises to OP′. The equilibrium point E moves to E′ when price falls and moves to E′, when price rises.

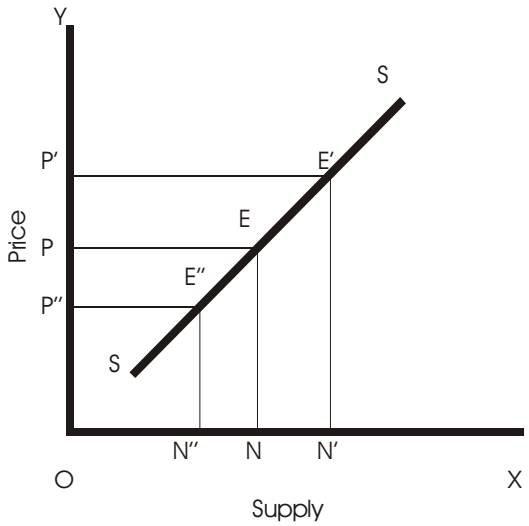


Fig. 7.5

Questions for Review

1. What is meant by shift of the supply curve?

2. What is the law of supply?

3. Explain briefly any three factors on which supply of a commodity depends.

4. What factors determine the supply of a commodity? Briefly explain.

5. What is meant by supply schedule?

6. Write short notes on :

(*a*) Market supply of a commodity

(*b*) Movement along and movement of the supply curve.

7. State the law of supply and illustrate it in the form of a curve with the following data:

Price (in Rs.)	*Quantity supplied (per period)*
0	0
1	1000
2	2000
3	3000
4	4000
5	5000
6	6000

8. Distinguish between contraction/expansion in supply, and decrease/increase in supply. Illustrate with diagrams.

9. What are the factors on which the supply of a commodity depends? Discuss them briefly.

10. The supply schedule of a commodity as follows:

Price per unit (Rs.)	*Quantity supplied initially*	*Quantity supplied after change*
1	20	0
2	40	20
3	60	40
4	80	60
5	100	80

(*i*) Calculate elasticity of supply when price rises from Rs.2 to Rs.3, both in case of A and B.

(*ii*) Why does supply elasticity differ in the two cases even though absolute change in quantity supplied is 20 units in both cases?

(*iii*) The coefficient of elasticity of supply of a commodity X is 2. How much quantity of the commodity will a seller supply at the price of Rs.5 per unit if he supplies 80 units of it at Rs.4 per unit?

11. The supply function of a commodity x is $QS_x = 20P_x$. The value of P_x (in Rs) is given as 6, 5, 4,3,2,1, and 0. Find out the producer's supply schedule.

12. The market supply and demand schedules of a certain commodity at prices of Rs.6,5,4,3,2,1, and 0 are given by the equation

(*a*) $Qd_x = (12\text{-}2P_x)\ 10000$

(*b*) $Qs_x = (20\ P_x)\ 1000$

13. Find out the equilibrium quantity and the equilibrium price.

14. Suppose that a freely determined price of kerosene oil is Rs 4.00 per litre. The government fixes its controlled price at Rs 3.00 per litre. At this price there is a shortfall of 20 lakh litres between the quantity and demand and supplied. What will be the consequence of this? Show with the help of a diagram.

15. What is meant by change in supply?

16. What effect does a cost saving technical progress have on the supply curve?

17. What effect does an increase in input price have on the supply curve?

18. What effect does an increase in excise tax rate have on the supply curve of the product?

19. Name three factors that can shift a supply curve.

8 CONCEPTS OF COST

The concept of cost is of great significance in the micro economic theory. It is the cost of production which determines the production decision of an entrepreneur whose main aim is to maximize profit. Lower the cost of production, greater is the profit margin.

COST OF PRODUCTION

The expenses incurred on all inputs of production–both factor inputs and non-factor inputs are known as the cost of production. Land, labour, capital and organization are the factors of production called factor inputs. Raw materials, fuel, equipments, tools etc are non factor inputs. Thus, cost is a function of various factors. Symbolically, cost function can be expressed as under,

$$C = f\,(Q,\ T,\ P_f)$$

Where C is the total cost of production, Q is output; T is technology, and P_f is the prices of factors of production.

Some important concepts of costs of production are explained as under.

Real Cost and Nominal Cost

Real costs refer to those payments, which are made to factors of production for the toil and efforts in rendering their services. Real cost is estimated in terms of the pain and sacrifices of labour. It is also the cost of waiting.

Nominal cost is the money cost (expenses) of production incurred on various inputs of production.

Explicit and Implicit Costs

Explicit costs are the paid out costs. These are the payments made for productive resources purchased or hired by the firm. These include wages paid to the labourers, rent paid for the premises, payments made for the raw materials, payments into depreciation accounts, premium paid towards insurance against fire, theft, etc. According to Leftwitch, "*Explicit costs are those cash payments which firms make to outsiders for their services and goods*." These costs appear in the accounting records of the firm.

Implicit costs of production, on the other hand, are the costs of self-owned and self-employed resources. These costs are normally ignored while calculating the expenses of a producer. These include the rewards for the entrepreneur's self-owned land, labour and capital. These costs do not appear in the accounting records of the firm.

The sum of explicit costs and implicit costs constitutes the total cost of production of a commodity.

Opportunity/Alternative/ Transfer Cost

The concept of opportunity cost is the most important concept in economic theory. In the simplest terms, opportunity cost of a decision may be defined as the cost of next best alternative sacrificed in order to take this decision. In short, the opportunity cost of using resources to produce a good is the value of the best alternative or opportunity forgone. Opportunity costs include both explicit and implicit costs. For example, if with a sum of Rs. 2000, a producer can produce a bicycle or a radio set and decides to produce a radio set. In this case, opportunity cost of a radio set is equal to the cost of a bicycle that he has sacrificed.

Private, External and Social Costs

A cost that is not borne by the firm, but is incurred by others in society is called an external cost. The true cost to the society must include all costs regardless of who bears them. Private costs refer to the costs to a firm in producing a commodity. It is, in fact, the money costs of the firm. For example, the purchase price of a car reflects the private cost experienced by the manufacturer. The air pollution created in the production of the car however, is an external cost. Because the manufacturer does not pay for these costs, and does not include them in the price of the car, they are said to be external to the market pricing mechanism. The air pollution from driving the car is also an externality. The driver does not pay for the environmental damage caused by using the car.

Social cost is the total of all the costs associated with an economic activity. It includes both costs borne by the economic agent and also all costs borne by society at large. It includes the costs reflected in the organization's production function (called private costs) and the costs external to the firm's private costs (called external costs). Thus, it is the cost of producing a commodity to the society as a whole. Hence, the social cost is the sum of private and external cost.

That is,

$$\text{Social Cost} = \text{Private Cost} + \text{External Cost}$$

Or

$$\text{External cost} = \text{social cost} - \text{private cost}$$

If social costs are greater than private costs, then a negative externality is present. Environmental pollution is an example of a social cost that is seldom borne completely by the polluter thereby creating a negative externality. If private costs are greater than social costs, then a positive externality exists. An example is when a supplier of educational services indirectly benefits society as a whole but only received payment for the direct benefit received by the recipient of the education: the benefit to society of an educated populace is a positive externality.

In either case, economists refer to this as market failure because resources will be allocated inefficiently.

Economic Costs

Economic costs are the payments which must be received by resource owners in order to ensure that they will continue to supply them in the process of production. Economic cost includes normal profit.

Short Run Costs and Long Run Costs

Short run is a period of time within which the firm can change its output by changing only the amount of variable factors, such as labour and raw materials etc. In short period, fixed factors such as land, machinery etc, cannot be changed. Costs of production incurred in the short run i.e., on variable factors are called short run costs. The long run costs are the costs over a period in which all factors are changeable. Thus, costs of production on all factors (in the long run all factors become variable) are long run costs.

Fixed/Supplementary and Variable/Prime Costs

The expenses incurred on fixed factors are called fixed costs, whereas those incurred on the variable factors may be called variable costs.

The fixed costs include the costs of:

(*a*) The salaries and other expenses of administrative staff;

(*b*) The salaries of staff involved directly in the production, but on a fixed term basis;

(*c*) The wear and tear of machinery (standard depreciation allowances);

(*d*) The expenses for maintenance of buildings;

(*e*) The expenses for the maintenance of the land on which the plant is installed and operates and

(*f*) Normal profit, which is a lump sum including a percentage return on fixed capital and allowance for risk.

The variable costs include the cost of:

(*a*) Direct labour, which varies with output.

(*b*) Raw materials; and

(*c*) Running expenses of machinery.

The sum of fixed and variable costs constitutes the total cost of production. Symbolically,

$$TC = TFC + TVC$$

Total Fixed Cost (TFC)

Total fixed cost is the sum of expenses incurred on those inputs that remain same at different levels of output. Total fixed cost is graphically shown in Fig. 8.1. It is a straight line parallel to output or x-axis. TFC is the total fixed cost curve parallel to x-axis indicating that it remains constant at all levels of output.

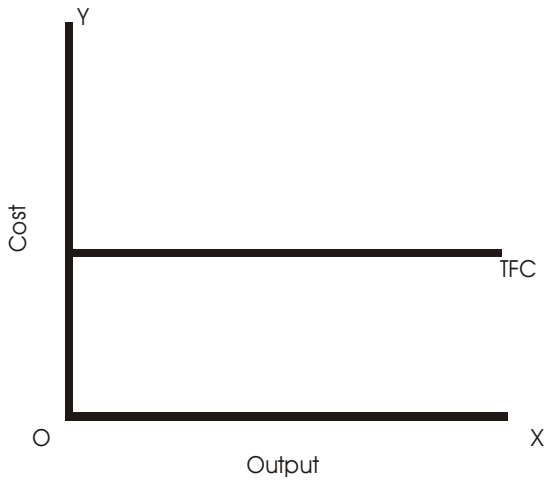


Fig. 8.1

Total Variable Cost (TVC)

Total variable cost is the sum of expenses incurred on those factor inputs whose quantity varies with a change in the level of output. Total variable cost curve TVC is shown in the Fig. 8.2. It has inverse-S shape. Total variable costs increase as the level of output increases.

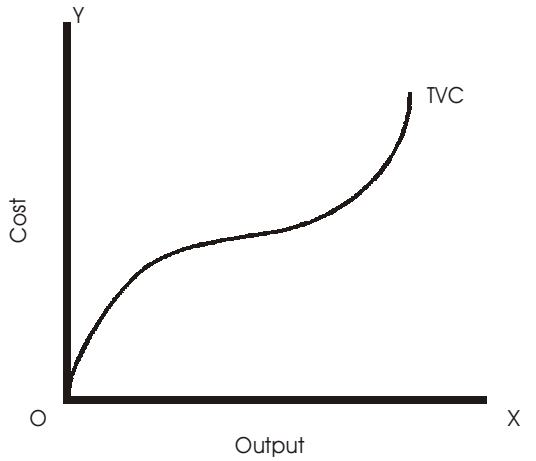


Fig. 8.2

Total Cost (TC)

Total cost to a producer for the various levels of output is the sum of total fixed costs and total variable costs, i.e.,

$$TC = TFC+TVC$$

The adjacent Fig. 8.3 shows total cost of production which is the sum of total variable cost and total fixed cost.

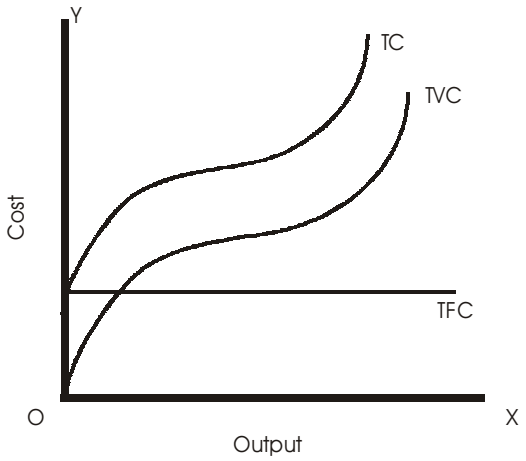


Fig. 8.3

Average Fixed Cost (AFC)

Average fixed cost is total fixed cost divided by total output. It is per unit cost on fixed factors. Symbolically,

$$AFC = \frac{TFC}{TQ}$$

Where, TQ is the total output.

Average fixed cost is shown as under. AFC curve is a rectangular hyperbola, indicating same magnitude at all points as TFC remains constant throughout. This is shown in the Fig. 8.4 below:

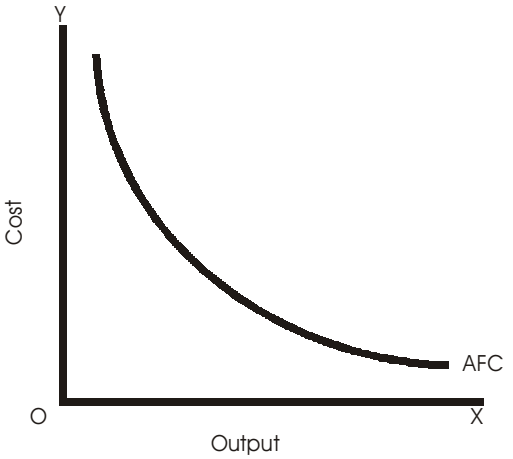


Fig. 8.4

Average Variable Cost (AVC)

The average variable cost is found by dividing the total variable costs by the total units of output, i.e., it is per unit cost of the variable inputs. Symbolically,

$$AVC = \frac{TVC}{TQ}$$

Average variable cost falls initially, reaches a minimum when the plant is operated optimally and rises after the point of normal capacity has been reached. This is shown graphically below in Fig. 8.5.

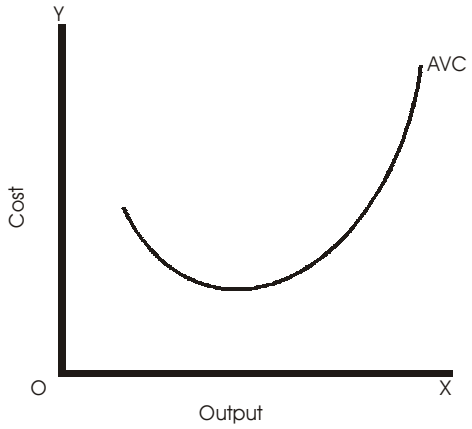


Fig. 8.5

Average Total Cost (ATC/AC)

ATC is the per unit cost of both fixed and variable inputs. Average total cost of production can be obtained by dividing total cost by the units of output, i.e.,

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

or $$= \frac{TFC + TVC}{TQ}$$

or $$= AFC + AVC$$

Average total cost or ATC curve has the similar shape as that of AVC, that is, U-shaped. The figure below shows AC curve.

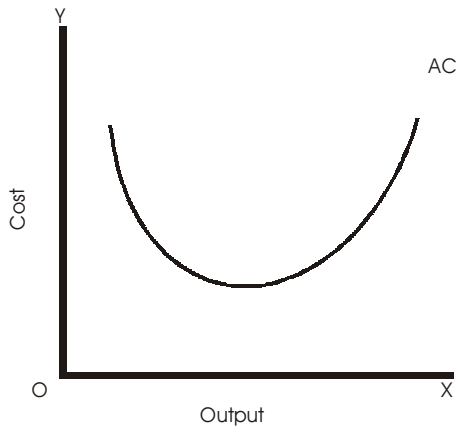


Fig. 8.6

Marginal Cost

Marginal cost is the addition to the total cost as a result of a unit (one unit) increase in the output. It is expressed as:

$$MC_N = TC_N - TC_{N-1}$$

Where, N is the number of units of output. Alternatively, marginal cost can also be expressed as follows:

$$MC = \frac{\Delta TC}{\Delta TQ}$$

Where, ΔTC stands for the change in total cost and ΔTQ for total output.

Graphically, MC curve is the slope of the TC curve, which is shown in Fig. 8.7. MC curve also has U-shaped. It first falls, goes to a minimum and then rises sharply.

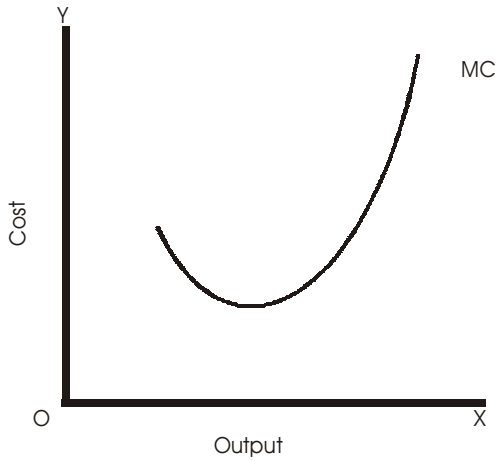


Fig. 8.7

The table below shows the relationship among fixed, variable costs, total, average and marginal costs.

Units of output	*TFC*	*TVC*	*TC*	*AFC*	*AVC*	*AC*	*MC*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0	10	0	10	-	-	-	-
1	10	4	14	10	4	14	4
2	10	7	17	5	3.5	8.5	3
3	10	9	19	3.3	3	6.3	2
4	10	11	21	2.5	2.7	5.2	2
5	10	14	24	2	2.8	4.8	3
6	10	19	29	1.6	3.1	4.7	5

Calculation is done in the following manner:

Column (4) = (2) + (3); (5) = (2) ÷ (1); (6) = (3) ÷ (1); (7) = (5) + (6); (8) = Δ (4) ÷ Δ (1)

RELATIONSHIP BETWEEN AVERAGE COST AND MARGINAL COST

Average cost is obtained by dividing total costs by the units of output. Marginal cost is the change in total costs resulting from a unit increase in output. The relationships between the two are as follows:

1. When average cost falls with an increase in output, marginal cost is less than the average cost (before point P).
2. When average cost rises, marginal cost is greater than the average cost (after point P).
3. Marginal cost curve cuts the average cost curve at its minimum point (minimum point on the average cost curve is also the point of optimum capacity) i.e., at the point of optimum capacity, MC = AC (at point P).

With increase in average cost, marginal cost rises at a faster rate. This relationship between AC and MC is illustrated in the adjacent Fig. 8.8.

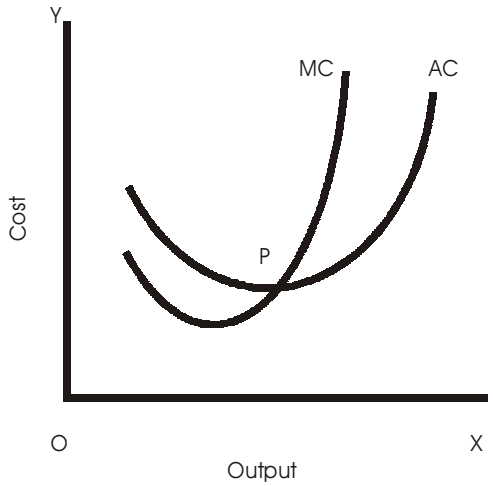


Fig. 8.8

Questions for Review

1. What is meant by opportunity cost?

2. Give two examples of implicit cost of a firm.

3. What is meant by supplementary costs?

4. Give two examples of fixed costs.

5. Give two examples of variable cost.

6. What are explicit costs?

7. Give two examples of implicit cost of a firm.

8. Distinguish between fixed and variable costs.

9. Distinguish between explicit and implicit cost.

10. Give two examples each of implicit and explicit costs in a tailoring shop.

11. With the help of an appropriate diagram state the relationship between Average cost and Marginal cost.

12. Give meaning of real costs, private costs, social cost.

13. Differentiate between money cost and real cost.

14. From the cost function of a firm given below, find:

Output (Units)	*0*	*1*	*2*	*3*	*4*	*5*	*6*
TC (Rs.)	60	90	100	105	115	135	180
TFC (Rs.)	60	60	60	60	60	60	60

(1) TVC

(2) AFC

(3) AVC

(4) ATC

(5) MC

15. What is meant by money costs?

16. What is the significance of time element in determining costs of a firm?

17. How does total fixed cost change when output changes?

18. What is the general shape of the AFC curve?

19. What will happen to ATC when MC > ATC?

20. What are volume discounts?

21. Why is the MC curve in the short run U-shaped?

22. What is the condition of profit maximization for a competitive firm?

23. What is the general profit maximizing condition of a firm?

9 CONCEPTS OF REVENUE

Revenue refers to the payments received by an entrepreneur from the sale of the goods produced. If a producer can sell during a week 200 pens at the price of Rs.5 each his total revenue during the week equals Rs. 5 × 200 = Rs. 1, 000.

Total Revenue

Total Revenue refers to the total amount of money that a firm receives from the sale of its products. By selling 20 apples at the rate of Rs. 2 each, the total revenue he gets is 20 × 5 = Rs. 100. Thus,

$$TR = Q \times P,$$

where Q is total quantity sold and P stands for price per unit.

Average Revenue

Average revenue is obtained by dividing total revenue earned by the total number of units sold by a producer. Average revenue curve of a firm is same thing as the demand curve of the consumer. Thus, it means price of the product. Symbolically,

$$AR = \frac{TR}{TQ}$$

Marginal Revenue

Marginal revenue is the change in total revenue resulting from a unit (one unit) change in the output sold. In other words, it is the revenue, which would be earned by a producer by selling an additional unit of his product.

$$MR = \frac{\Delta TR}{\Delta TQ}$$

Or,
$$MR = TR_n - TR_{n-1}$$

Where, TR_n is the current or selected value of total revenue and TR_{n-1} is the previous value of total revenue. For example, TR of selling first unit of a product is Rs. 12 and TR of selling one more unit is Rs. 20, then TR_n and TR_{n-1} are 20 and 12 respectively. Thus, MR = 20 – 12 = 8. It means, by selling one more unit the seller gets additional revenue of Rs. 8.

RELATIONSHIP BETWEEN AVERAGE AND MARGINAL REVENUE

Let us explain the relationship between AR and MR with the help of a table below:

Units	*Price or Average Revenue*	*Total Revenue*	*Marginal Revenue*
1	15	15	15
2	14	28	13
3	13	39	11
4	12	48	9
5	11	55	7
6	10	60	5
7	9	63	3
8	8	64	1

Total revenue column is derived by multiplying 'units' column with 'AR or price' column. Marginal revenue has been derived from the total revenue column as explained earlier. It is seen that when AR is falling, MR is less than AR. It should be noted that under perfect competition (meaning of perfect competition is dealt in a separate chapter) average and marginal revenue curves coincide, i.e., AR = MR. However, under imperfect competition, AR > MR as shown in the table above.

Under perfect competition, seller cannot influence price of the product. He has to sell at the ruling price prevailing in the industry. Thus, average revenue or price is same throughout. Marginal revenue curve coincides the average revenue curve because additional units are sold at the same price as before. This is shown in the table below:

Units (Q)	*Price or Average Revenue (P)*	*Total Revenue (Q × P)*	*Marginal Revenue*
1	10	10	10
2	10	20	10
3	10	30	10
4	10	40	10
5	10	50	10
6	10	60	10
7	10	70	10
8	10	80	10

The relationship between AR and MR under perfect competition is illustrated in the Fig. 9.1.

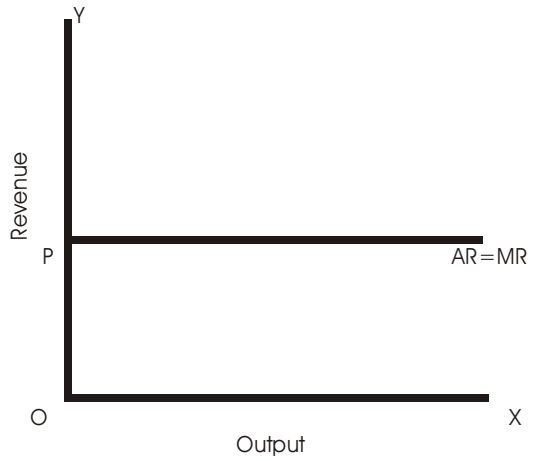


Fig. 9.1

The relationship between AR and MR under imperfect competition is illustrated in the Fig. 9.2 below. AR and MR are the average and marginal revenue curves. Along x-axis output is measured and along y-axis, revenue earned by the seller. It is seen that when AR is falling, MR < AR.

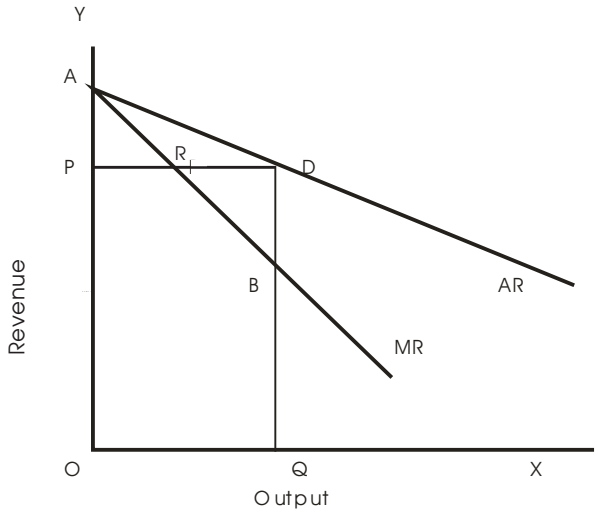


Fig. 9.2

A general relationship between AR and MR are as follows:

(1) When AR is falling (sloping downwards), MR lies below AR (MR < AR).

(2) If AR is constant, AR = MR (under perfect competition, Fig. 9.1).

(3) When AR and MR curves are straight lines perpendicular drawn from any point of the AR curve to the y-axis will cut into equal parts by MR curve. PR =RD in the diagram shown in Fig. 9.2.

(4) When AR and MR curves are not straight lines, but either is convex and concave to the origin, the marginal revenue curve will not lie halfway from the average revenue curve.

Questions for Review

1. What do you understand by the marginal revenue product?

2. What is meant by value of marginal product?

3. Explain the relationship between Average Revenue and the Marginal Revenue.

4. Explain the relationship between average revenue and the marginal revenue under monopoly.

5. What is the relationship between the total revenue, marginal revenue and average revenue?

6. Calculate TR, AR and MR from the following table:

Price per unit (Rs.)	*Demand (units)*
1	100
2	90
3	70
4	60
5	50
6	40

7. What is the relationship between price and marginal revenue for a competitive firm?

8. Why is the total revenue curve facing a competitive firm a straight line passing through the origin?

9. Why is AR always equal to MR for a competitive firm?

10 FORMS OF MARKET AND PRICE DETERMINATION

MEANING OF MARKET

In general, the word 'market' refers to a place or an area where buyers and sellers generally meet so as to buy and sell a particular commodity. In Economics, we make use of the term 'market' in a different sense. It refers to a particular commodity that is sold and purchased rather than a place or an area. For example, cotton market, tea market etc. Any effective arrangement for bringing buyers and sellers into contact with one another is defined as a market in economics. The essentials of a market are the following:

1. Market does not confine to a particular place but the whole area wherein buyers and sellers of a commodity are spread over;
2. There must be buyers and sellers and for that physical presence is not necessary. In modern days, we sell goods through websites or electronic shopping markets or through telephonic media;
3. There must be a commodity which is bought and sold; and
4. There should be free interaction between buyers and sellers so that only one price is agreed upon for the commodity.

FORMS OF MARKET

Economists have classified markets on the basis of:

(*a*) the number of buyers and sellers of the commodity;

(*b*) the nature of the commodity produced by the sellers;

(*c*) degree of freedom in the movement of goods and factors; and

(*d*) whether knowledge on the part of the buyers and sellers regarding prices in the market is perfect or imperfect.

On the basis of these criteria, economists have distinguished between four basic forms of the market:

1. Perfect competition
2. Monopoly

3. Monopolistic competition
4. Oligopoly

These market forms are discussed as under.

PERFECT COMPETITION

A market is said to be perfect when there is a large number of buyers and sellers of the product and there is a complete absence of rivalry among the firms. The firms sell products which are homogeneous.

Features of Perfect Competition

The important features of this type of market are summarized as follows:

(1) Large number of buyers and sellers. The number of buyers and sellers is so large that no individual buyer or seller can influence the market price and output by his independent action. The reason for this is that every buyer and seller purchases or sells a very insignificant amount of the total output.

(2) Homogeneous products. A firm produces a product which is accepted by customers as homogeneous or identical. There is no way in which a buyer can distinguish products sold by different sellers. The assumptions of large numbers of sellers and buyers and of product being homogeneous indicate that a single firm is a price-taker. Demand curve or average revenue curve is infinitely elastic, i.e., demand curve is horizontal straight line parallel to output axis. Therefore, a firm under perfect competition sells any amount of output at the prevailing market price.

(3) Free entry and exit of the firms. Every firm is free to join or leave the industry. If the industry is making profits new firms can enter the market to share these profits. Similarly, if the industry suffers losses the individual firms can quit the market.

(4) No government regulation. There is no government interference in the market in the form of taxes, subsidies, rationing of essential goods etc.

(5) Uniform price. At a particular time uniform price of a commodity prevails all over the market.

The above five conditions are related to pure competition. Perfect competition requires the following additional assumptions/conditions to be fulfilled.

(6) Perfect knowledge of market conditions. Buyers and sellers have full knowledge of the price at which transactions take place in the market.

(7) Perfect mobility of the factors. Factors of production can freely move from one firm to another in the industry. They can also move from one job to another and in this way there is a scope for learning newer skills.

(8) Absence of selling and transportation costs. Selling and other promotional costs are not present in perfect market.

PRICE AND OUTPUT DETERMINATION UNDER PERFECT COMPETITION

Equilibrium price under perfect competition is determined not by the seller/firm but by the industry (all firms together). The price determined by the industry is accepted by all firms. Thus, individual seller/firm is a price taker under perfect market. This is explained with the help of diagrams below:

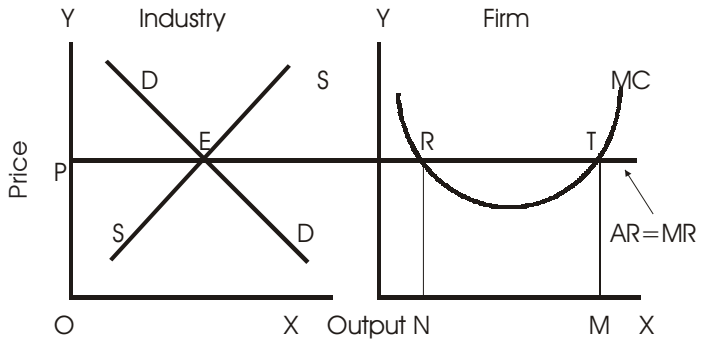


Fig. 32

In the diagram (Industry), DD and SS are the demand and supply curve respectively. The equality point of SS and DD is E, which is the equilibrium point. At this point, price OP is determined. OP price will be accepted by all firms in the perfect market and sell any amount of good at this price. Hence, average revenue curve faced by an individual firm is horizontal straight line parallel to the x-axis or perfectly elastic. Now, the firm's task is to determine equilibrium output.

It is to be remembered that any seller will sell or produce that level of output where its profit is maximized. And profit is maximized where the following two conditions are satisfied:

1. MR = MC
2. MC curve cuts MR from below.

In the second diagram (Firm), it is seen that there are two equilibrium points-R and T, because at these points the first condition is met. However, point T satisfies both conditions. Hence the firm will be in equilibrium at point T and produce OM level of output at OP price. The firm will not stop producing at point R because beyond this point AR > MC and therefore, there is still enough scope to earn profits and maximize it. Similarly any output level greater than OM will bring losses to the firm as MC > AR (=MR) beyond point T.

In the short run, there are three possibilities for a firm. These are – (a) when a firm makes abnormal profits (AR > AC); (b) when it earns only normal profit (AR = AC); and (c) when it incurs losses, but does not shut down. Firms will operate till they are able to get variable costs. They will shut down their business when they cannot earn even average variable costs of production.

MONOPOLY

The word 'Monopoly' has been derived from the two Greek words, 'Monos' which means single, and 'polus' which means a seller, Monopoly is a market situation where there is single seller of

a product and he has full control over the supply of that commodity. He produces such a product which has no close substitutes.

Thus monopoly market has the following features:

1. There is a single seller of the product.
2. There are no close substitutes of the commodity produced by monopoly seller.
3. There is restriction on entry or exit of other firms.
4. There is no distinction between a firm and an industry under monopoly.
5. Seller is a price maker.
6. A monopoly firm earns abnormal profits both in short and long run.
7. Selling costs are negligible.
8. A monopolist is capable of following price discrimination, which means it can charge different prices for its products from different buyers.

Let us now see what the causes of monopoly are:

1. Monopoly can be the result of exclusive ownership of important raw materials or knowledge of production techniques;
2. Patent rights acquired by a firm for its product;
3. Foreign trade barriers imposed by the government, which prevents any foreign company to enter the industry.
4. A price policy adopted by the existing firms which prevents new firms to enter.

MONOPOLISTIC COMPETITION

In a monopolistic competitive market the number of sellers is large but each seller has a product differentiated from those of his rivals. What one firm produces is not quite like what any other firm produces. In fact, each firm has a kind of limited monopoly of its own product and hence the name "monopolistic competition". The following are the main features of the monopolistic competitive market:

1. **Large number of firms:** The number of firms which constitutes an industry is fairly large.
2. **Product Differentiation:** Under monopolistic competition each firm produces a differentiated product. The form or the quality of a product can be differentiated by using different kinds of raw materials, through workmanship, colour, packing, design, durability, etc. For example, different firms produce soft drinks like coca cola, limca, sprite, thums up etc. Though the ingredients are same, products carry a different brand name.
3. **Free Entry and Exit:** Firms under monopolistic competition are free to enter and leave the industry at any time.
4. **Individual Pricing by a Firm:** In this type of market, every individual producer has his own independent price policy.

5. **Selling Costs:** Every firm tries to promote its sales through expenditure on advertisement and on other promotional activities such as sales men's incentives, gifts etc.
6. Under monopolistic competition, both price and non-price competition prevails.

OLIGOPOLY

Oligopoly is a market structure where there are only a few producers/sellers of a commodity (but more than two producers) competing with one another. "Few" means enough number of firms that can keep watch on the actions of rivals and behave accordingly. A firm cannot take independent action without thinking of in what way its opponent firms will react. Precisely, few may mean three or four or twenty or thirty firms, including some major players while others small producers. Automobile companies making two-wheelers (Bajaj, Hero Honda, Kinetic, Yamaha etc) or four-wheelers (Ambassadar, Maruti, Tata, Mahindra & Mahindra etc); TV manufacturers (BPL, Videocon, Onida, LG, Samsung, Sony etc) etc are the examples of oligopoly. Oligopoly is of two kinds:

Pure Oligopoly

It is a market where the products are homogenous. There is mutual interdependence between firms. Any change in price by one firm has a substantial effect on the sales of other and cause them to change their price. Examples of pure oligopoly are found in such industries as cement, coal, gas, steel, etc.

Differentiated Oligopoly

Under differentiated oligopoly, products are close substitutes for each other. Price change by one firm has less direct effect upon rival firms. Examples of differentiated oligopoly are refrigerators, television sets, air-conditioners, automobiles, scooters, motorbikes, instant coffee, etc.

Characteristics of Oligopoly

Some of the important features of oligopoly are as follows:

1. **Interdependence:** Under oligopoly, a firm cannot take independent price and output decision. As the number of competing firms is limited, therefore, each firm has to take into account the reactions of the rival firms. Price and output decisions of one oligopoly firm has considerable effect on the price and output decision of the rival firms.
2. **Indeterminate Demand Curve:** An oligopoly firm can never predict sales correctly. It can never be certain about the nature and position of its demand curve. Any change in price or output by one firm leads to a series of reactions by the rival firms. As a result, the demand curve of the oligopoly firm remains indeterminate (indefinite and shifting). Thus, under oligopoly a price, once determined, continues to prevail for a long time. According to Paul M. Sweezy, an oligopolistic firm faces a kinked demand curve at the existing price as shown under in the figure. If a firm reduces prices of its products, other firms will also follow as demand curve is highly inelastic in its lower part EB. As a result, the firm which has lowered the price will not gain anything out of it act. Now, if it raises its price above the prevailing price OP, other firms will not follow this time as demand curve above the prevailing price (upper part) AE is more elastic.

Thus, the firm will lose due to his action. Therefore, price will remain more or less stable under oligopoly situation. The demand curve in the Fig. 10.1 is kinked (bent) at E.

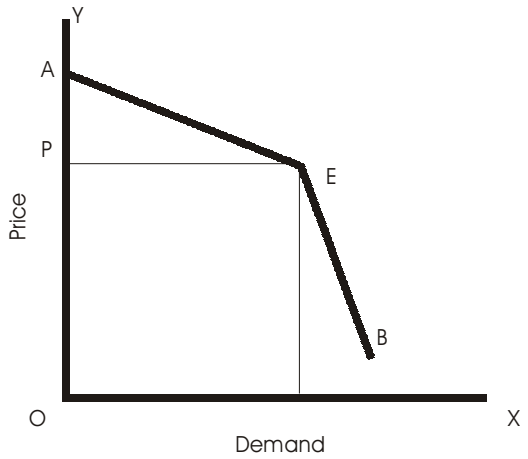


Fig. 10.1

3. **Role of selling costs:** Advertisement, publicity and other sales techniques play an important role in oligopoly pricing. Oligopoly firm employs various techniques of sales promotion to attract large number of buyers and maximize the profits. Selling cost has a direct bearing on the sales of the oligopoly firm.
4. **Price Rigidity:** Oligopoly firm generally sticks to a price, which is determined after a lot of planning and negotiations, with the competing firms. A firm will not resort to price cut, as it would lead to retaliatory actions by the rival firms resulting in price war. An oligopoly firm will also not raise the price because the rival may not follow suit and, as a result, the firm will lose many of its customers.
5. **Group Behaviour:** Price and output decisions of one oligopoly firm have direct effect on the competing firms. Interdependence of the firms compels them to think in terms of mutual co-operation. Firms try to maximize their profits through collusive action. Instead of independent price output strategy oligopoly firms prefer group decisions that will protect the interest of all the firms.

DUOPOLY

Duopoly is a market situation where there are only two sellers. Duopoly can be with or without product differentiation. The important feature of duopoly is that the individual firm has to carefully consider the indirect effects of its own decision to change its price or output or both.

Questions for Review

1. What is meant by market in economics?
2. What type of demand curve does a firm have under perfect competition?
3. Explain the characteristics of monopolistic competition. Compare demand curves under monopolistic competition and monopoly.

4. How is a seller under perfect competition a price taker? What is the relevance of the characteristic that there is large number of sellers in this context?

5. Define market.

6. Define monopoly?

7. What is perfect competition? State its main features.

8. What is oligopoly? Discuss its characteristic features.

9. Distinguish between perfect competition and monopoly.

10. State the main features of monopoly.

11. Define equilibrium price.

12. How does oligopoly differ from monopolistic competition?

13. What is Monopolistic Competition? How is it different from perfect competition?

14. State five necessary conditions for perfect competition to prevail in a market.

15. "Under perfect competition, the seller is a price-taker; under monopoly, he is the price-maker." Expalin.

16. Write short notes on:

(*a*) Pure competition

(*b*) Differentiated product

(*c*) Demand curve of a seller under different market forms

(*d*) Oligopoly.

17. How does an increase in the price of a substitute good in consumption affect the equilibrium price?

18. What does the FAD theory of famines say?

19. What is meant by economic viability of an industry?

20. Give one example of each of direct intervention and indirect intervention in the market mechanism.

21. What do you understand by (a) control price and (b) support price?

22. Name the three forms of imperfectly competitive markets.

23. What is the profit maximizing condition of a competitive firm in the long run?

24. What is meant by abnormal profit?

25. What is meant by abnormal loss?

26. What is break-even price?

27. How many firms are there in a monopoly market?

28. What is a cartel?

29. What is the profit maximizing condition for a monopoly firm?

30. What are anti-trust legislations?

31. Give two examples of monopolistically competitive market?

32. What are selling costs?

33. What are advertising costs?

34. What is persuasive advertising?

11 FACTOR PRICE DETERMINATION

A factor is a human or material agent which contributes something to production. A factor can be a worker, a machine, a building or a piece of land. Every factor has some sort of stored-up productive power which it exerts when used in production. This productive power or the actual contribution to the production is called services of a factor. Factor services are demanded by producers and supplied by factor owners. In economics, factors of production, which help in producing goods and services, are classified broadly into human and non-human factors. Labour, which is provided by a worker, is a human factor whereas buildings and machinery or capital is a non-human factor. When we say 'Prices of factors', it means the price a factor should get for providing its services. Labour gets wages and use of capital is rewarded with interest. Land, which is an important factor of production, earns rent and an entrepreneur who takes the risk of business in the environment of uncertainty earns profits – either positive or negative.

This chapter deals with the explanation of how prices of factors of production are determined by the forces of demand and supply. Prices of factor services are determined in the same manner as that of product pricing, the difference lies in the determinants of factor demand and supply.

Demand for a Factor

The price of a factor service is determined by the demand and supply of that factor. Producers demand various factor services for producing goods and services in the market. Every producer faces the problem of taking decision regarding the payment which it has to make to factors for the return of their services. This is one of the most crucial questions before a producer. In such situation, it is required to know the contribution made by a factor. How much extra a factor adds to the total output produced by a firm is required to be determined at such time. In economics, this extra contribution is called as marginal product of labour/factor. Thus, marginal product or marginal physical product (MPP) of labour/factor is the addition made to the total output by employing one more unit of labour/factor. For instance, if 5 workers together construct 20 meters of road length in a day and when one more worker joins them, the road length increases to 25 meters, then the 6^{th} worker's contribution to the total work is 5 meters. This is marginal physical productivity of 6^{th} labour. The concept of MPP is primarily developed concerning labour, but it is equally applicable to other factors, such as land, capital, and organization. Thus, price of labour, i.e., wages depends upon the MPP of labour. A producer will equate its marginal cost of producing

goods with the marginal productivity of labour so as to maximize his satisfaction/profits. Thus, MPP is of utmost importance in the theory of factor pricing. Marginal physical productivity of labour for a firm is shown in the table and Fig. 11.1 below.

Units of labour	*Total Physical Product*	*Marginal Physical Product*
1	5	5
2	11	6
3	22	11
4	41	19
5	65	24
6	95	30
7	121	26
8	145	24
9	162	17
10	171	9

Marginal physical productivity of labour increases as additional labourers are employed but after certain point it begins to decline continuously. Fall in the MPP after 6th unit of labour is not due to the decline in the efficiency level of labourers but due to the technical conditions which do not allow the continued increase in the units of labourers in relation to other factors. Total physical productivity (TPP) of labour increases, initially, at increasing rate and thereafter at diminishing rate as seen in the table above.

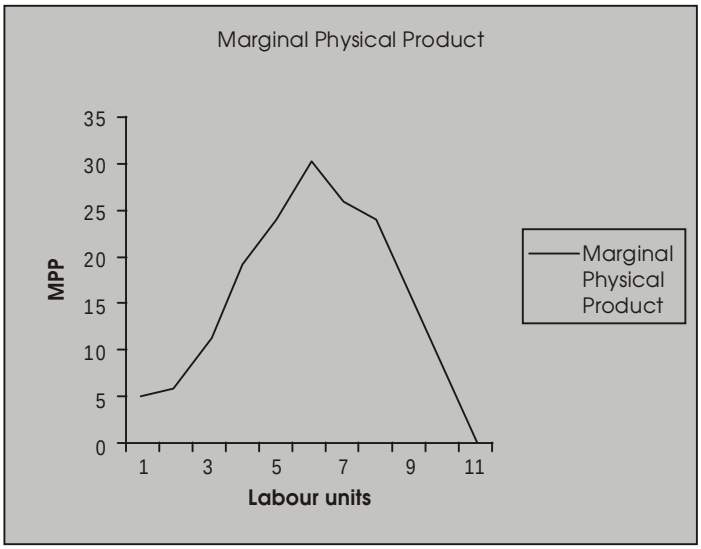


Fig. 11.1

Every producer is interested in the revenue it will earn by employing a factor. In other words, a firm is interested in the money value of MPP of labour than in just productivity in physical terms. Money value of marginal physical product of a factor is estimated by multiplying MPP with price of the product. Thus,

$$VMP = MPP \times \text{Price of the product}$$

A producer has to compare its marginal cost for employing an extra labour with what it adds to the total output, i.e, additional/marginal revenue. The additional revenue earned by using one more unit of a factor is called its marginal revenue product (MRP). MRP is more significant term than MPP. We can find MRP by multiplying MPP with the marginal revenue of the product being produced by the firm. Thus,

$$MRP = MPP \times MR$$

The schedule below explains how MRP is calculated. Let us take Rs. 5/- as the price per unit of the good in question. Further, it is assumed that there is perfect competition in the factor market, so that the price remains same at all levels of factor demanded and supplied. At constant price, MR is equal to the price. Therefore under perfect competition, MRP is equal to VMP. The demand curve of a firm for a single factor is its value of marginal product curve.

Units of labour	*Marginal Physical Product (in units)*	*Marginal Revenue Product (in Rs.)*
1	5	25
2	6	30
3	11	55
4	19	95
5	24	120
6	30	150
7	26	130
8	24	120
9	17	85
10	9	45

The MRP curve like the MPP curve has similar shape. It first rises and then falls continuously.

The determinants of the demand for a variable factor by an individual firm are the following:

1. The prices of the input. The higher the price of a factor, the smaller the demand for its services.
2. The marginal physical product of the factor.
3. The price of the commodity produced by the factor.
4. The amount of other factors which are combined with labour.
5. The prices of other factors.
6. The technological progress, which changes the MPP of all inputs and hence the demand.

The market demand for a factor is not the simple horizontal addition of the demand curves of individual factors. This is because as price the factor falls producers will employ more of this factor and expand their output. It will result in downward shift of supply of the commodity causing price of the commodity to fall. Since price is one of the components of the demand curves of the individual firms for a factor, these curves shift downward to the left. The market demand curve of labour is shown in Fig. 11.2. At W1 wage rate, firms demand ON level of factors and as wage rate falls to W2, demand also increases to OM.

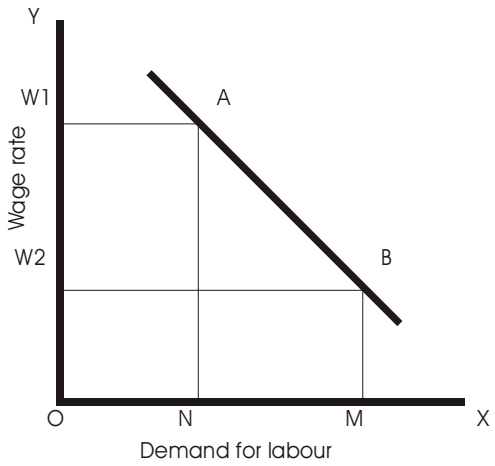


Fig. 11.2

Supply of a Factor

To determine the supply of labour, we assume that labour is a homogenous factor, i.e., all labour units are identical to each other. The important factors which determine market supply of labour are the following:

1. The price of labour, i.e., wage rate.
2. The tastes of consumers which affect their striking balance between leisure and work.
3. The size of population.
4. The labour force participation rate.
5. The occupational, educational and geographical distribution of labour.

The relationship between the supply of labour and the wage rate defines the supply curve. Therefore, other factors than wage rate are assumed to be constant, while determining the supply curve of labour. The market supply is the summation of the supply of labour by individuals. The supply curve of an individual labour is shown in Fig. 11.3.

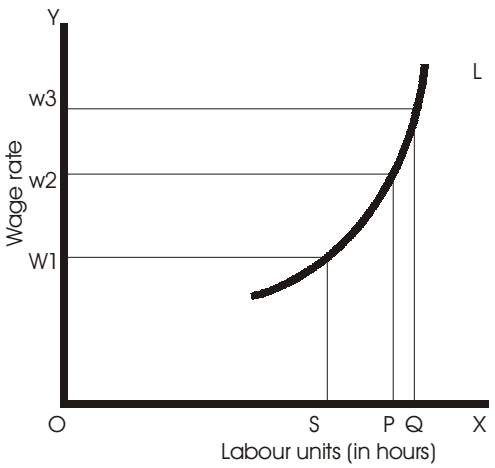


Fig. 11.3

When the wage rate is W1, the individual labour is in equilibrium by working OS hours and as wage rate increases to W2, labour hours also increases to OP. However, at some higher wage rate the labour hours may decline. This is depicted in the figure above, when wage rate rises to W3, the individual works for OQ hours. It is seen that the individual works less than at W2 wage rate, as evident from the fact that PQ < SP. When wage rate increases still further, the hours supplied for work declines even more. The behaviour of labourers at higher wage rates produces a backward bending supply curve for labour as shown in the Fig. 11.4.

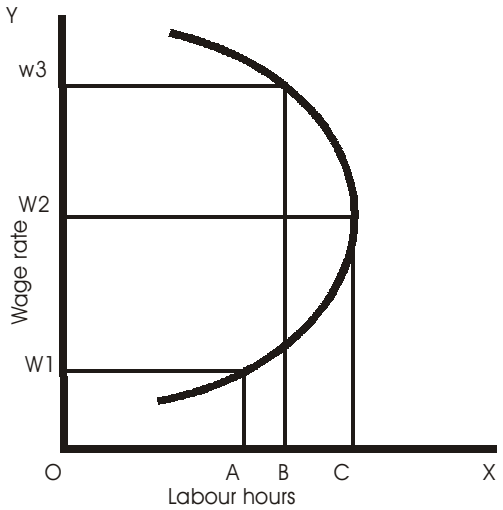


Fig. 11.4

When wage rate increases say up to a point, it gives incentive to the labourers for working or supplying more hours but when wage rates increase further, it creates disincentive for longer hours of work. The reason being longer hours of work means less leisure hours. As the wage rates rises, the individual's income also rises, which enables him to have more leisure hours. Thus, beyond a certain level of the wage rate, the supply of labour declines as the worker prefers to use his increased income on more leisure activities. It means, as incomes reach the level required for a comfortable standard of living, workers like to have more vacations, fewer hours of work per day rather than go on working at higher wage rates.

However, aggregate supply curve of labour does not behave in this manner. Economists argue that in the short run such pattern may be evident but in the long run, the supply curve must have a positive slope. Higher wages may induce some people to work less hours, but will also attract new workers in the market in the long run.

Determination of Price of a Factor under Perfect Competition

Thus, we can determine the factor price in perfect markets with the help of demand and supply curves of a factor. The Fig. 11.5 shows the price determination by the intersection of these two curves. In the figure, the equilibrium wage is OW and then employment level is OM. Thus, we find that the determination of wage rate is same as the determination of price of a commodity. But the determinants of demand and supply of a factor are different than that of goods. The

demand for factors is a derived demand, i.e., their demand arises due to the demand for various commodities in whose production the factors are used. The supply of labour is not cost determined like the supply of commodities, but influenced by attitudes of workers toward work and leisure.

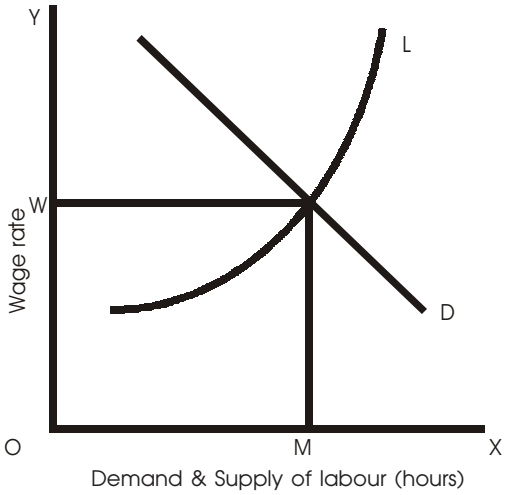


Fig. 11.5

MARGINAL PRODUCTIVITY THEORY

Marginal productivity theory tries to explain how the services of factors are determined. As already stated, a firm works for profits and therefore he will not pay any factor more than its marginal productivity. Similarly, no factor will accept price less than its marginal productivity. Thus, marginal productivity determines the price of a factor. An entrepreneur will substitute one factor for another till the marginal productivities of all factors are equalized. At the margin of employment, the payment made to the factor concerned is just equal to the value of the addition made to the total production due to the addition of an extra employment of a unit of a factor. If the prevailing wage rate is less the marginal productivity, then more labour will be employed. Competition among the firms will raise the wage rate to the level of marginal productivity. On the contrary, when marginal productivity is less than the wage, the firms will reduce the demand for labour. As a result wage will fall to the level of marginal productivity. In this manner, by competition, wage tends to equal the marginal productivity of labour. This is applicable to other factors of production. The Fig. 11.6 shows the above explanation. MRP is the marginal productivity curve for labour. It is the demand curve for the factor. At wage rate OW, OM quantity of labour is employed because at this level of employment, wage is equal to marginal productivity of labour.

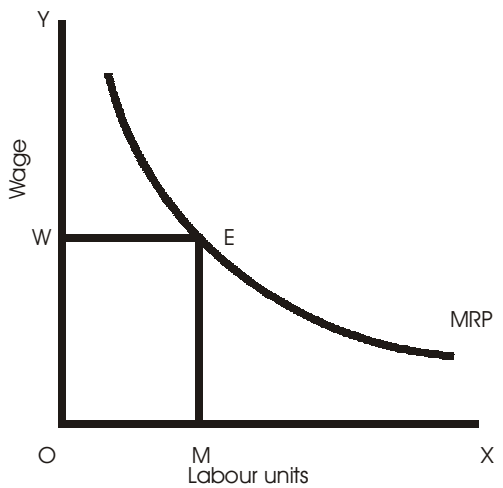


Fig. 11.6

Shortcomings of Marginal Productivity Theory

Marginal productivity theory is criticized on the following grounds:

1. Assumption that all units of factors are homogenous is wrong. All labourers are not alike. Efficiency varies from labour to labour. Similarly, capital units are also of different types.
2. Different factors cannot always be substituted as assumed.
3. It is also assumed that factors are mobile as between various uses. Land lacks mobility. Labour and capital are also not perfectly mobile.

Questions for Review

1. Who demand factors in the markets?

2. Who supply factors in the markets?

3. Define marginal physical productivity. How is it different from marginal revenue productivity?

4. Name two factors which shift the factor demand curve.

5. Explain backward bending supply curve of labour.

6. Demand for labour is derived demand. Explain.

7. What is the essence of marginal productivity theory of distribution?

8. How is price of a factor determined? Explain with the help of a diagram.

9. Describe marginal productivity theory of distribution.

10. What is derived demand?

11. What are the factors that determine market supply of labour?

12. Calculate from the following table-MPP and MRP, given that price per unit of the commodity is Rs. 5/-.

Units of labour	*Total Physical Product*	*Marginal Physical Product*
1	6	
2	14	
3	20	
4	39	
5	60	
6	90	
7	115	
8	130	
9	152	
10	161	

12 FACTOR PRICES, COMPARATIVE ADVANTAGE AND INTERNATIONAL TRADE

A study of international trade necessarily explains why nations trade with other. The immediate cause of international trade is the presence of differences in the prices of goods and services between the countries. Price differences arise because of differences in supply and demand conditions. Supply conditions differ due to various reasons such as natural endowments of economic resources, the degree of efficiency with which factors are employed, the level of technology, labour skills, factor abundance etc. Differences in demand are mainly due to differences in income and taste pattern of people in different countries. The result of international trade will be equalization of product prices as well as factor prices. Before we analyze further, it would be imperative to have acquaint ourselves with some important terms used in the study of international trade.

Internal and International Trade

Internal or inter-regional trade may be defined as exchange of goods and services among the residents of the same country. International trade is the exchange of goods and services between the residents of a given country and those of the rest of the world. The fundamental principles underlying trade between different countries and that within a country are the same. There is free mobility of factors of production within the nation whereas in the international setting, factor mobility is not free. In former case, there could not exist inter-regional differences in factor prices. The factors would always be attracted towards the regions where their prices are higher. As such they would move from the regions where their prices are low paid to the places where they would be rewarded at higher rates. This movement would continue till the factor price differences between the regions are completely removed. In the latter case, mobility is restrictive by immigration laws that prevent free mobility of labour from one country to another. The restrictions are not only limited to labour flow but also to flow of capital and investment across the countries. There are barriers as social, political and cultural that also restricts the flow of capital and labour.

As regards to movement of goods and services within a nation, it is free. The only barriers internally are the distance and cost of transportation. In case of international trade, such movement is not free because of various barriers like import and export duties and quotas, exchange controls non-tariff barriers etc.

Economic environment within the nations is more or less same in all regions. Economic environment such as legal framework, regulations regarding production and exchange of goods,

infrastructural facilities, etc are same within a country. But between nations, there are significant differences in economic environment.

The distinction between internal and international trade can be significantly seen in case of monetary units. There are currency differences between countries. Money and capital market within a country are the same for all regions governed by a single currency facilitating exchange of goods and services. But in the international setting this is not true. International monetary differences create complications in international transactions, which are not found in domestic trade.

Absolute Factor Price Difference

It occurs when the price of a factor in one country is different, in absolute terms, from the price of that factor in another. For example, if a labour earns Rs. 100 by working a day in India and by providing same labour the worker gets Rs. 500 in Japan, then there is absolute factor price difference between these two countries.

Relative Factor Price Difference

It refers to the difference in factor price ratios across regions or countries. For example, in Japan a labour earns Rs. 500 per day and capital earns Rs. 2000 and in India earning of a labour is, say, Rs. 100 and that of capital Rs. 500, then relative factor price difference is,

In case of Japan, $\frac{P_L}{P_K} = \frac{500}{2000} = \frac{1}{4}$

In case of India, $\frac{P_L}{P_K} = \frac{100}{500} = \frac{1}{5}$

Thus, factor price ratio in India is lower than that in Japan.

THE CLASSICAL THEORY OF INTERNATIONAL TRADE

Theory of Absolute Advantage–Adam Smith

Adam Smith provided the base for the development of the classical theory of international trade. His theory is popularly known as the Theory of Absolute Advantage. According to Smith, if one country has absolute advantage over another in one line of production, and the other country has an absolute advantage over the first country in another line of production, then both the countries would gain by trading. He, thus, showed how all countries would gain from international trade through international division of labour. Let us explain Smith's theory of international trade by taking an example.

Let us suppose that there are two countries in the world—India and America. We also assume that there are two goods traded between these countries—tea and textiles. Assume further that both the countries can produce both the goods if they wish. Suppose America can produce 100 units of textiles or 50 units of rice using a given amount of factors of production or any other combination of two goods provided that the opportunity cost ratio remains 2:1. It would mean that if America wants to produce 1 more unit of rice, it will have to give up the opportunity

of producing 2 units of textiles. In the same manner and with same amount of factors of production, India can produce 50 units of textiles or 100 units of rice or any other combination in the opportunity ratio of 1:2. It means that India has to give up 1 unit of textiles for the production of 2 units of rice. Thus, it is clear that America has an absolute advantage in the production of textiles and India has absolute advantage in the production of rice. This means there is scope for India to establish trade relations with America by specializing in production of that commodity where each has absolute advantage.

Thus, America will specialize in the production of textiles and India in the production of rice, when they start trading each other. Autarky is a situation when a country is not having any trade relations with rest of the world. In such situation, two countries in question will produce and consume a combination of textiles and rice as shown in the following table:

Countries	*Textiles (units)*	*Rice (units)*	*Total output/GNP (units)*
U.S.A.	50	25	75
India	25	50	75
World	75	75	150

America produces and consumes 50 units of textiles and 25 units of rice whereas India produces and consumes 25 and 50 units of textiles and rice respectively. When the two countries open their economies to international trade, there take place changes in respect of production lines and GNP, as shown below in the table:

Countries	*Textiles (units)*	*Rice (units)*	*Total output/GNP (units)*
U.S.A.	100	0	100
India	0	100	100
World	100	100	200

After the trade is established, America produces textiles only and India produces rice. The two countries divert their resources in the production of that commodity in which they have absolute advantage. As a result of trade, GNP of both the countries has increased to 100 units. The world trade has also increased by 50 units. Both the countries have become better off, after trade, without making any country worse off. Thus, there have been production gains from international trade between two countries. As regards to consumption gains from trade, it depends on distribution of gains from production between two countries. In other words, consumption gains depend upon the terms of trade, i.e., number of units of textiles exchanged for one unit of rice between India and America.

Theory of Comparative Advantage–David Ricardo

Ricardo's model on international trade is a further refinement of Smith's model. He argued that even if the countries did not have absolute advantage in any line of production over the other countries, international trade would be gainful. Let us explain Ricardo's model as under.

Let us again take the example of a world with only two countries—America and India and two commodities—textiles and rice. Ricardo assumes that one country has the absolute advantage

over the other country in both the lines of production. It means the other country has absolute disadvantage in both the lines of production. Further, in terms of relative or comparative advantage, he assumes that the first country has a greater comparative advantage in one line of production compared with the other and second country has a smaller comparative disadvantage in the second line of production compared with the first line of production. In short, one country's comparative advantage is greater in one line of production, and the other country's comparative disadvantage is smaller in the other line of production. If trade is established between these two countries, it would bring both production and consumption gains. The production possibilities of the two countries are shown in the following table:

Countries	*Textiles (units)*	*Rice (units)*	*Opportunity cost ratios*
U.S.A.	120	120	1:1
India	40	80	1:2

America can produce 120 units of textiles or 120 units of rice, or any other combination of textile and rice at opportunity cost ratio of 1:1. It means America can produce 1 unit of textile (or rice) by sacrificing 1 unit of rice (textile). Here, America has absolute advantage in the production of both textiles and rice. India, on the other hand, has absolute disadvantage in either line of production. She can produce either 40 units of textiles or 80 units of rice or any combination at opportunity ratio of 1:2. It would mean that India has to give up 2 units of rice to produce 1 unit of textiles. Alter natively, ½ unit of textiles have to be given up to produce 1 unit of rice. It is to be noted here that the internal cost ratios for producing two commodities in the two countries are different, implying that there is potentiality of gains from international trade. The cost of producing any commodity in America is same, but in India it is not so. In India, to produce 1 units of rice, ½ units of textiles has to be given up and to produce 1 unit of textiles, 2 units of rice has to be given up. From the table above, we can see that America's comparative advantage over India is greater in the production of textiles (3:1) as compared to rice (1.5:1). Therefore, America would specialize in the production of textiles than rice. Now, India's comparative disadvantage, in relation to America, is lower in the production of rice (1:1.5) than textile (1:3). Thus, India would specialize in the production of rice than textiles.

The theory suggests that a country should specialize in the production and export of those goods in which either its comparative advantages is more or its comparative disadvantage is less. Then only a country can maximize its production and increase economic welfare.

THEORY OF OPPORTUNITY COST

Adam Smith's and David Ricardo's theories were based on the labour theory of value, which has been criticized on the ground that labour is not a homogenous factor and is not the only factor of production. Goods are produced by using all factors of production –land, labour, capital and organization and not labour alone. Thus Heberler has developed a theory in terms of opportunity costs using labour and capital in 1936. Once comparative advantage is defined in terms of opportunity costs, it makes no difference whether goods are produced by labour alone or by all factors of production combined with labour. Let us explain the theory with an example. Suppose U.S. can produce either 100 units of wheat or 100 units of cloth when all factors are fully

employed in the production of either wheat or cloth. However, the country will be interested in producing some combinations of two goods instead of one. The various combinations of wheat and cloth that U.S.A. can produce are shown by a production possibility curve (PP) in the Fig. 12.1 below, which is straight line, since constant returns to scale in the production has been assumed.

On the X-axis, we measure the units of cloth and along Y-axis, units of wheat. The country can produce both the goods at any point lying on the production possibility curve PP and not outside the curve. If it decides to produce at K, then it produces 50 units of each cloth and wheat. The production possibility curve is straight line implying that to produce a unit of wheat; same unit of cloth has to be forgone. Thus, opportunity cost in our example is 1:1. In the same fashion we can draw production possibility curve of another country, India. Let us suppose that India can produce either 100 units of cloth or 50 units of wheat. Thus the opportunity cost of producing cloth in terms of wheat is 1:1/2. Trade will benefit both the countries. Wheat is relatively cheaper in the U.S.A and cloth is relatively cheaper in India. This is because to produce one unit of cloth, U.S.A has to sacrifice one unit of wheat whereas, to produce the same unit of cloth in India, it has to sacrifice ½ unit of wheat. This clearly shows that U.S.A has comparative advantage of production in wheat and India has a comparative advantage in the production of cloth. Thus, U.S.A will export wheat and import cloth and India will export cloth and import wheat from U.S and in this way both the countries will gain from trade.

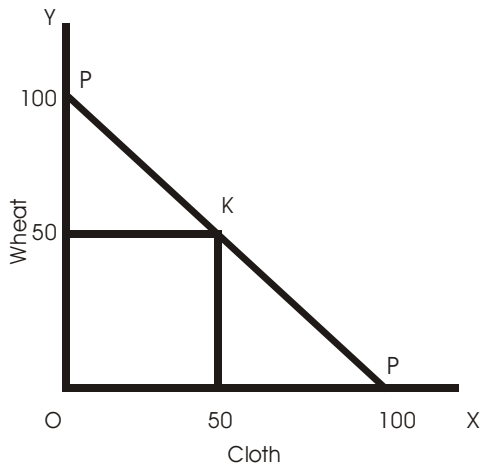


Fig. 12.1

MODERN THEORY OF INTERNATIONAL TRADE—HECKSCHER AND OHLIN

The Modern theory of international trade was developed by Eli Heckscher and Bertil Ohlin. According to them, the immediate cause of international trade is the differences in the relative prices of commodities between the countries. These differences arise on account of the differences in the factor supplies in the two countries. The theory is based on the following assumptions:

1. There are only two factors-labour and capital.
2. There are only two countries and one country has abundant capital and another country has abundant labour.

3. There are only two commodities, the production of which uses both the factors.
4. There is perfect competition both in the product and factor markets.
5. There is full employment of resources.
6. There is no change in technology.

Heckscher and Ohlin predicted that the capital surplus country would specialize in the production and exports of capital intensive goods and the labour abundant country would specialize in labour intensive goods.

Factor Abundance

Factor abundance can be defined in terms of factor prices. Accordingly, a country in which capital is relatively cheap and labour relatively more costly, is regarded as the capital abundant country, regardless of the physical quantities of capital and labour available in this country compared with the other country. Labour abundant country is one where labour is relatively cheaper than capital. Ohlin finds that the differences in factor prices are due to differences in factor supplies in the two countries.

Factor abundance can also be defined in physical terms. According to this criterion, a country is relatively capital abundant if it is endowed with a higher proportion of capital to labour than the other country. Similarly, labour abundant country is defined as the country in which labour is surplus than capital. Thus, a country 'A' would be capital abundant and country 'B' would be labour abundant if the following condition is met:

$$\left(\frac{K_A}{L_A}\right) > \left(\frac{K_B}{L_B}\right)$$

where K_A and L_A are the total amounts of capital and labour respectively in country A, and K_B and L_B are the capital and labour amounts in country B. Since, country A is capital abundant, it will produce capital intensive goods and country B will produce labour intensive goods. This is shown in the Fig. 12.2. The production possibility curve of country A is shown by the curve AB and that of country B by CD. Steel is capital intensive good while cloth is labour intensive good. If the two countries produce the goods in the same proportion along OR ray, then country A would produce at Q' on its production possibility curve AB and country B at Q" on production possibility curve CD. It can be seen that the slope at Q' is more steep than at Q". In other words, the commodity price line shown by P'P' is steeper than P"P". This means that steel is cheaper in country A and cloth is cheaper in country B, provided that two countries produce at Q' and Q" respectively. Thus, country A would produce more of steel than cloth and export to country B and country B would focus itself in the production of cloth and export it to country A. It is seen above that there is greater degree of specialization in the two countries in the production of those goods, in which they are abundant. But complete specialization is absent because of diminishing returns to scale conditions with respect to both the goods. It is to be noted here that, production and export of a country's goods depend upon demand factors. If the tastes of the consumers in regard to goods are identical, then the theory is valid on the basis of physical definition of factor abundance.

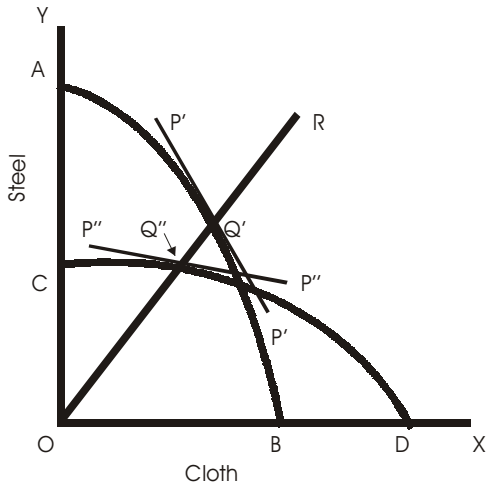


Fig. 12.2

TERMS OF TRADE

Terms of trade is the rate at which a country exchanges its exports with its imports. Terms of trade are of immense use and significance. The gains from trade depend upon the terms of trade. There are many concepts of terms of trade. The most relevant concepts keeping in mind the scope of study are as explained below:

Gross Barter Terms of Trade

The gross terms of trade is the ratio quantity of imports index to the quantity of exports index. Thus, if T_G stands for gross terms of trade, M for imports and X for exports, then gross terms of trade is expressed as,

$$T_G = \frac{M}{X}$$

The higher the ratio of imports to exports, the better the terms of trade. The quantity index of imports and exports for the base year will always be equal to 100. Base year is used to measure changes in the gross terms of trade in any given year.

Net Barter Terms of Trade

Net barter terms of trade is the ratio of price indices of exports to imports of a country. Symbolically,

$$T_N = \frac{X_p}{M_p}$$

where X_p and M_p are price index numbers of exports and imports respectively, T_N stands for net barter terms of trade. Improvement in this terms of trade would mean increase in the economic welfare of the country.

Income Terms of Trade

It is the ratio of the value of exports divided by the price index of imports. Income terms of trade helps in correcting movements in net barter terms of trade for changes in export volume. Symbolically,

$$T_r = T_N.X$$

or

$$T_r = \frac{X_p}{M_p} \times X$$

$$T_r = \frac{X_p.X}{M_p}$$

Questions for Review

1. What do you mean by international trade?
2. What is meant by absolute and comparative advantage?
3. What is meant by relative factor price difference?
4. Explain absolute factor price difference.
5. Why does trade take place between two countries?
6. Explain the theory of comparative costs in international trade.
7. What is meant by terms of trade? How are they measured?
8. Examine the Hecksher-Ohlin's theory of international trade.
9. Point out differences between internal and international trade.
10. What do you mean by gains from trade?
11. What is net terms of trade?

PART B

INTRODUCTORY MACROECONOMICS

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13 INTRODUCTION TO MACROECONOMICS

Macroeconomics is the study of the entire economy in terms of the total amount of goods and services produced, total income earned, the level of employment of productive resources, and the general behavior of prices. Macroeconomics can be used to analyze how best to influence policy goals such as economic growth, price stability, full employment and the attainment of a sustainable balance of payments.

Until the 1930s most economic analysis concentrated on individual firms and industries. With the Great Depression of the 1930s (see note on Great Depression at the end of this chapter), however, and the development of the concept of national income and product statistics, the field of macro economics began to expand. Particularly influential were the ideas of John Maynard Keynes, who used the concept of aggregate demand to explain fluctuations in output and unemployment.

John Maynard Keynes (June 5, 1883-April 21, 1946) was an English economist, whose radical ideas had a major impact on modern economic and political theory as well as Franklin D. Roosevelt's New Deal. He is particularly remembered for advocating interventionist government policy, by which the government would use fiscal and monetary measures to aim to mitigate the

adverse effects of economic recessions, depression and booms. He is considered by many to be the founder of modern macroeconomics. John Maynard Keynes was the son of John Neville Keynes, an economics lecturer at Cambridge University and Florence Ada Brown, a successful author and a social reformist. Keynes enjoyed an elite early education at Eton, where he displayed talent in nearly every field of his unusually wide-ranging interests. His abilities were remarkable for their sheer diversity. He entered King's College, Cambridge to study mathematics, but his interest in politics led him towards the field of economics, which he studied at Cambridge under A.C. Pigou and Alfred Marshall. His magnum opus, The General Theory of Employment, Interest and Money challenged the economic paradigm when published in 1936. In this book Keynes put forward a theory based upon the notion of aggregate demand to explain variations in the overall level of economic activity, such as were observed in the Great Depression.

MEANING OF MACROECONOMICS

Modern macroeconomics mainly owes to J.M. Keynes. His book, "The General Theory of Employment, Interest and Money" published in 1936 has analytically studied what causes large and prolonged fluctuations in the level of employment.

Macroeconomics deals with the aggregates of the system. The word macro means large. Macroeconomics, thus, deals with the behaviour of various economic variables that refer to the economy as a whole. These variables are—total national income, aggregate employment, the extent to which the economy's resources are being fully employed, aggregate saving and investment, and the general price level in the economy. Thus, under macro economics we study economy as a whole. According to Kenneth. E. Boulding, "*Macroeconomics deals not with individual quantities as such, but with aggregates of these quantities, not with individual income, but with national income, not with individual prices but with price levels, not with individual outputs but with national output.*"

DISTINCTION BETWEEN MICROECONOMICS AND MACROECONOMICS

Micro and macroeconomics are the two broad branches of economic theory. These two terms are coined by Prof. Ragnar Frisch of Oslo University. As we already know that microeconomics deals with a small part of the economy. It studies the economic behaviour of individual unit—an individual, a firm or an industry. Microeconomics studies product and factor pricing and also theory of economic welfare. It is sometimes referred to as price theory, because it mainly revolves around the prices of different variable.

Macroeconomics, on the other hand, deals with the aggregates of the whole economy. In other words, it is a study of all units combined together. It is a study of economic system as a whole. It deals with aggregates such as total income and employment, general price level, total production, consumption and investment etc. Macroeconomics, therefore, studies theories related to income, output, employment, and growth. The distinction can also be explained with the help of a diagram Fig. 13.1 below.

Let us take the whole economy as a circle. When we study any aspect of the circle, we deal macroeconomics. The economy consists of, say, four firms/companies— A, B, C and D. If we are analyzing price of products sold, employment generated or output produced by firm A, we are studying microeconomics. Further, If A and B together make one industry (industry means many

firms producing similar types of products), and we study any aspect related to this industry, we are again studying microeconomics.

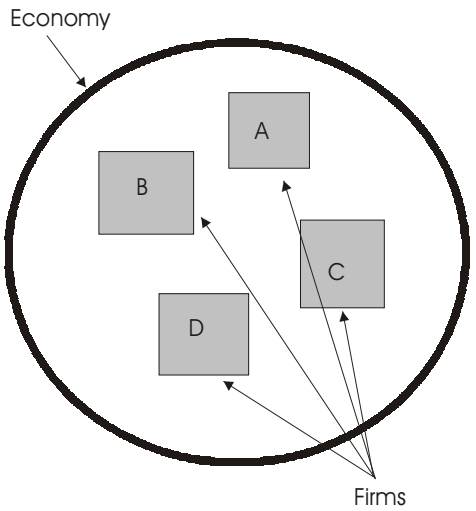


Fig. 13.1

GREAT DEPRESSION

The Great Depression was a massive global economic recession (or "depression") that ran from 1929 to 1941. It led to massive bank failures, high unemployment, as well as dramatic drops in GDP, industrial production, stock market share prices and virtually every other measure of economic growth. It bottomed out in 1933, but it would be well after World War II before such indicators as industrial production, share prices and global GDP could surpass their 1929 levels.

It remains one of the most studied events of history to economic historians. Major theories proposed include the stock market crash of 1929, collapse of the gold standard, collapse of international trade due to the Smoot-Hawley Tariff Act, Federal Reserve policy, and many other influences. The question in economic theory is which effects drove the Great Depression, and therefore which policy actions may have caused or should have been taken to prevent, ameliorate, or end, the Great Depression.

Theories from mainstream capitalist economics focus on the relationship between production, consumption and credit and on personal incentives and purchasing decisions. In these theories attempts are made to order the sequence of events which imploded the industrialized world's monetary system and its trade relationships. Theories from Marxian or Marxists economics focus on the relationships of the control of production and the concentration of wealth. For Marxists, the Great Depression is the kind of crisis which capitalism is prone to, and its occurrence is not surprising.The cause of the Great Depression was in large part due to the collapse of international trade as the result of restrictive trade practices globally. Many nations experienced a decline, though the severity and timing differed from country to country. For example, Britain hit its trough in the third quarter of 1932, while France did not reach its low point until April of 1937.

Questions for Review

1. Distinguish between microeconomics and macroeconomics.
2. What do you understand by macroeconomics?
3. Give examples of macroeconomic variables.

14 NATIONAL INCOME AND RELATED AGGREGATES

MEANING OF NATIONAL INCOME

National income is generally defined as the value of final goods and services produced in a country in an accounting year. However, it can be defined in terms of– total output (as defined above), total factor income and total expenditure.

In terms of total factor income, it is the sum of factor incomes (wage, rent, interest, profit) in a country in a year. Factors of production viz., land, labour, capital and organization/entrepreneur earns reward as rent, wage, interest and profit respectively. The sum of these rewards is the national income in terms of income generated in the economy. National income, in terms of total expenditure, is the aggregate expenditure of a country in a year's time. Spending of households, private sector and government sector in a country adds up to national income by expenditure method.

NATIONAL INCOME AT CURRENT AND CONSTANT PRICES

National income at current prices is the money value of all goods and services produced in a country estimated at the prevailing prices.

National income at constant prices is the national income estimated at a base year, which is an earlier year to the current year. National income at constant prices is used for making comparisons of national income and related data. Let us explain the concept of national income at current and at constant prices with the help of following table. The economy produces rice, cars, steel and provides some services during 2000 and 2005. The year 2000 is taken as a base year for calculating national income at constant prices. Prices in two years are given in columns-3 and 5. Quantity of goods produced and units of services provided in both years are assumed to be same. It is seen that national income at current price is Rs. 740 and that at constant prices is Rs. 600. National income at current price is more than at constant prices by Rs. 40. This is illusory and not real. This output in 2005 has not increased and rise in national income is due to increase in price. Thus, to get a true picture of the growth of an economy, national income at constant prices is more useful.

National income at current prices can be converted into national income at constant prices when comparison is required, by using the following formula:

$$N.I_{\text{constant prices}} = \frac{\text{National income at current prices}}{\text{Price Index}} \times 100$$

	2000		*2005*		*N.I. in 2005*	
Products	*Q*	*P*	*Q*	*P*	*At constant prices*	*At current prices*
1	2	3	4	5	4 × 3	4 × 5
Rice	10	05	10	07	50	70
Car	20	10	20	12	200	240
Steel	10	20	10	25	200	250
Services	15	10	15	12	150	180
					600	740

Q (quantity) in units; P (price) in Rs.

CIRCULAR FLOW OF INCOME

As stated above, national income is the aggregate factor income (earnings of labour and property) which arises from the current production of goods and services by the factors of production; this is represented by a circular flow Fig. 14.1 as under.

Let us take an economy with two sectors only—households and firms. Households are basically consumer units and they own factors of production. Firms produce goods while households provide services of the factors of production to these firms. Factors of production receive incomes for rendering their services. The sales value of net production must equal the sum total of payments made by the firms to the factors of production in the form of wages, rents, interest and profits. These incomes are spent on various goods and services by households. Thus income flows from firms to households in exchange of productive services while products flow in return when expenditure by households takes place.

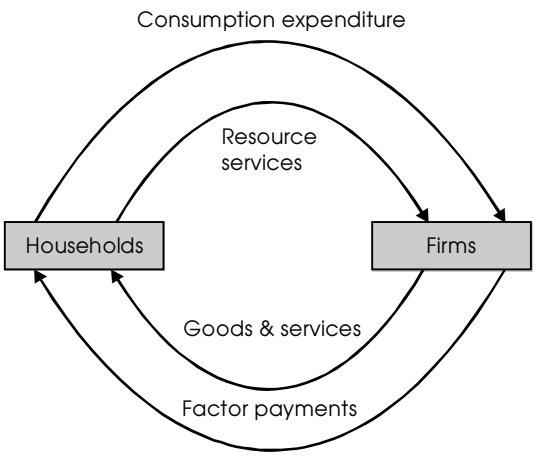


Fig. 14.1

In short, circular flow of income is defined as the flow of payments and receipts for goods and services and factor services between different sectors of the economy. There are two types of flows—money flows and real flows. Money flow is the flow of income/payments in terms of money. Real flow refers to the flow of goods and services. National income is both a flow of goods and services and flow of money income.

The following are the assumptions that are considered for explaining circular flow of income in two-sector model simple economy.

1. The economy is closed economy. That is, there is no foreign sector;
2. Households do not produce but provide factors of production;
3. Firms or business sector is the only producing sector;
4. Whatever is produced by firms is sold and there is no accumulation of inventories;
5. Consumers or household sector do not save their income but spend all their income;
6. There is absence of taxes, government expenditure on goods and services etc.

It is thus clear that, production in a two sector model equals sales and income equals expenditure. In real working of circular flow of income, however, there are injections and leakages in the economy. Injections are factors which increase spending flow and leakages are those factors which reduces spending. For instance, households usually save a part of their income. This savings cause leakages from the income stream or flow in the economy. Similarly, when we pay taxes to the government, our income gets reduced by the amount of tax paid. This is also an important form of leakage. On the other hand, if government spends on goods and services, it increases income which acts as a stimulant to production. This is an injection in the economy.

CONCEPTS OF NATIONAL INCOME

It is very necessary to know the following basic concepts of national income before we know how to measure national income. The important concepts or aggregates of national income are—Gross national product, net domestic product, private income, personal income and personal disposable income.

Gross National Product (GNP_{mp})

Gross national product is the total market value of all final goods and services produced by nationals of a country during a year. It is a monetary measure of the current output of economic activity in an economy. While calculating GNP, we should only include the value of final goods and services and not of intermediate goods. The value of factor income earned from abroad by the residents of a country is included in the calculation of GNP. Final goods are those goods which are being purchased for final use and not for resale or further processing. Intermediate goods are those goods which go through one or several stages of production to become final goods. In other words, they help in the production of final goods. If we include the value of these goods and services, it would mean double counting. Double counting results in exaggerated estimate of gross national product. In brief,

$$GNP_{mp} = GDP_{mp} + \text{Net factor income from abroad}$$

Gross Domestic Product (GDP_{mp})

The GDP_{mp} is the money value of all final goods and services at prices prevailing in the market produced in the domestic territory of a country in a year's time. The value of factor income from abroad which is earned by the residents of a country is not included in the calculation of GDP. The various sectors of a country engaged in the production activities produce normally a certain amount of goods and services like rice, fertilizers, cement, steel, services of doctors, teachers, engineers, advocates, etc. The money value of all these goods and services taken together gives us the GDP_{mp}. Thus,

$$GDP_{mp} = GNP_{mp} - \text{Net factor income from abroad}$$

Net Domestic Product at Market Prices (NDP_{mp})

Net domestic product at market prices (NDP_{mp}) is defined as the money value of final goods and services produced by the residents within the domestic territory of a country in a year's time less consumption of fixed capital/depreciation. Depreciation or consumption of fixed capital is the value of wear and tear of capital goods in the process of production. To get the real increase in availability of goods in the economy, deducting of depreciation value is necessary.

$$NDP_{mp} = GDP_{mp} - \text{Depreciation}$$

$$NDP_{mp} = GNP_{mp} - \text{net factor income from abroad} - \text{Depreciation}$$

Net National Product at Market Price (NNP_{mp})

NNP_{mp} is the market value of all goods and services produced by residents of a country after allowing for depreciation. Thus,

$$NNP_{mp} = GNP_{mp} - \text{Depreciation}$$

$$NNP_{mp} = NDP_{mp} + \text{net income from abroad}$$

NNP_{mp} is a more accurate measure of the true output of the economy than GNP_{mp}.

Gross Domestic Product at Factor Cost (GDP_{fc})

GDP at factor cost is the measure of gross domestic product in terms of earnings of factors of production. It is the sum total of wages, interest, rent etc, within the domestic territory of a country. To get GDP_{fc}, we use the following,

$$GDP_{fc} = GDP_{mp} - \text{Net indirect taxes (indirect taxes - subsidies)}$$

$$GDP_{fc} = GNP_{mp} - \text{Net factor from abroad} - \text{net indirect taxes}$$

Gross National Product at Factor Cost (GNP_{fc})

It is the sum total of earnings received by various factors of production in terms of wages, rent, interest etc, by the normal residents of a country.

$$GNP_{fc} = GNP_{mp} - \text{Net indirect taxes}$$

$$GNP_{fc} = GDP_{mp} - \text{Net indirect taxes} + \text{net factor from abroad}$$

Net Domestic Product at Factor Cost (NDP_{fc})/Domestic Factor Income

Net domestic product at factor cost is the measure of the domestic product in terms of earnings of factors of production within domestic territory of a country. Thus,

$$NDP_{fc} = GDP_{fc} - \text{Depreciation}$$

National Income OR Net National Product at Factor Cost (NNP_{fc})

It is the value of all final goods and services produced by the residents of a country—operating both in domestic territory and outside the country—at their factor cost. In simple words, it is the factor income accruing to the residents of a country. In brief,

$$\text{National Income/}NNP_{fc} = \text{domestic factor income + net factor income from abroad}$$

$$\text{National Income/}NNP_{fc} = GNP_{fc} - \text{depreciation}$$

As payments to the factors of production are the factor cost of production, national income is also called as NNP at factor cost.

Private Income

Private income is the current income earned from all sources of private sector consisting of private enterprises and factor owners, within the domestic territory of a country and abroad. It does not include the income accruing to the government from its property and commercial enterprises and also saving of non-departmental enterprises. However, transfer income received by the private sector is included. Moreover, interest on public debt which private sector receives is also added to the private income. In brief:

Private Income = national income – income from property and entrepreneurship accruing to the government-saving of non-departmental enterprises + interest on national debt + current transfers from government + net current transfers from the rest of the world

Personal Income

The personal income refers to the sum total of all current incomes received by the individuals or households from all sources within the domestic territory of a country during an accounting year. It is to be noted that a certain part of the income earned by an individual in a year may not be actually received. For instance, undistributed profits and corporate taxes paid by the enterprises and net retained earnings of foreign companies may not be actually received by the persons. Moreover, personal income includes not only factor incomes but also transfer earnings etc. Thus,

Personal income = Private income – undistributed profits – corporate taxes – net retained earnings of foreign companies – contributions for social security.

Personal income = National income – undistributed profits – corporate taxes – net retained earnings of foreign companies – contributions for social security + transfer payments.

Personal Disposable Income

Personal disposable income refers to that part of personal income which is actually available to households for consumption and saving. In other words, it is the income of a person which he can spend as he desires. An individual or households have many compulsory payments to make in the real life. These are income tax, property tax, and other receipts of the government. After deducting the amount of such payments, one has the income to be spent at one's wish. Therefore,

Personal disposable income = personal income – personal taxes – miscellaneous receipts of the government

Suppose you have a earning of Rs. 10,000 every month. You have to pay some compulsory payments such as income tax, fees, and other miscellaneous receipts such as water tax, telephone bills etc, and these amounts to, say, Rs. 2000. Then, your personal disposable income is Rs. 8000, which you can spend for food, clothing and other expenses of family.

National Disposal Income

Net national disposal income is measured by adding to national income net indirect taxes and other current transfers from abroad. Thus,

Net national disposal income = national income + net indirect taxes +net current and capital transfers from abroad.

Income from Domestic Product Accruing to Private Sector

Income from domestic product accruing to the private sector refers to that part of domestic product at factor cost which accrues to the private sector in an accounting year.

Transfer Payments

These are the payments made by the government to households, enterprises and non-profit institutions and vice-versa without any promise to supply goods and services. E.g., payments made to households by the government in the form of unemployment allowance, old-age pension, scholarships, etc. Similarly, direct taxes and indirect taxes, gifts, etc., given by the households to the government are transfer payments. Direct taxes are those taxes, the burden of which cannot be shifted to others. For example, when government levies income tax on our income, we have to pay it ourselves. We cannot make others to pay our income tax. Thus burden of the tax has to be borne by us. Indirect taxes are those taxes, the burden of which can be easily shifted to others. For example, sales tax imposed on various goods are first paid by sellers and then by ultimate consumers. Sellers shift the tax by adding it to the price of goods thereby increasing the price of the products. Subsidies, investment allowance, etc., given by the government to enterprises are also transfer payments. Subsidies are given by the government to producers so that prices of certain products can be kept low. Generally, when a tax is imposed or increased, prices of goods in the market rise which makes poor class to suffer. In such a situation, government may grant subsidies to producers to lower the price. Similarly, corporate taxes, excise duties, custom duties and gifts from enterprises to the government are also transfer payments.

Transfer payments do not contribute to the flow of goods and services. In other words, transfer payments do not generate any factor income therefore; these should not be included in the GDP.

CURRENT TRANSFER PAYMENTS AND CAPITAL TRANSFER PAYMENTS

A distinction is made between current transfers and capital transfers as under.

Current transfer payments are made from the current income of the payer and added to the current transfers' income of the recipient for consumption expenditure. Current transfers affect consumption.

Capital transfer payments are payments in cash and in kind which are used for gross capital. These are made out of wealth or past saving of the payer. Capital transfers influence the level and rate of capital formation in the economy.

RELATIONSHIP AMONG IMPORTANT NATIONAL INCOME AGGREGATES

The relationship among important national income aggregates can be analyzed as under:

1. GDP_{mp} = Price × Quantity of final goods and services
2. NDP_{mp} = GDP_{mp} - depreciation
3. NDP_{fc} or domestic income = NDP_{mp} – net indirect taxes
4. NNP_{fc} or national income = NDP_{fc} + net factor income from abroad
5. Private income = NNP_{fc} - income from property and entrepreneurship arising to the government – savings of non-departmental enterprises + national debt interest + current transfers from government + other current transfers from the abroad
6. Personal income = private income – undistributed profits – corporation taxes – net retained earnings of foreign companies – contributions for social security
7. Personal disposal income = personal income – personal taxes and other miscellaneous receipts of the government

   Or consumption + saving

Questions for Review

1. Who publishes 'National Accounts Statistics in India'?

2. Distinguish between Gross Domestic Product at market prices and Net National Product at factor cost.

3. Distinguish between private income and personal income.

4. Distinguish between private income and national income.

5. Giving examples explain the distinction between current transfer payments and capital transfer payments.

6. What are transfer payments? How are they treated in the estimation of national income?

7. How is personal income different from national income?

8. How is net domestic product at factor cost different from gross domestic product at market prices?

9. How is gross domestic product different from gross national product?

10. Define gross domestic product.

11. What are the components of net factor income from abroad?

12. What does the real flow of income show?

13. Does transfer earning enter into national income?

14. Explain the relationship between consumption, production and investment.

15. Distinguish between national income at constant prices and national income at current prices.

16. Define consumption of fixed capital.

17. What are capital goods?

18. What are final products?

19. Define value of output.

20. How is the value of gross output different from gross value added?

21. How is capital loss different from the consumption of fixed capital?

22. Distinguish between intermediate products and final products.

23. What is meant by value added?

24. Does the household sector produce goods and services?

25. Under what title does the CSO publish the annual national income statistics?

26. Distinguish between stock and flow.

27. Distinguish between personal income and disposable income.

28. Explain briefly the methodology adopted in India for estimating the contribution of unregistered manufacturing.

29. Define capital transfer.

30. Define subsidy.

31. What is the principle of circular flow of income and product?

32. Explain circular flow with two sector economy.

33. Explain the concepts of 'leakages' and 'injections' in the circular flow of income.

34. Explain the meaning of non-market activities.

35. What is called 'Green GNP'?

36. What is GNP deflator?

APPENDIX

National income accounting has gained very importance due to its many usefulness. The concept of national income accounting was first mentioned by William Petty in 1676. National income accounting developed after the break down of Second World War. The systematic approach to national income accounting was done by Simon Kuznets and therefore he is also regarded as the father of modern national accounting. National income accounting is the method of preparing national income of a country. It is a statistical statement or classification which shows the value of total goods and services produced in the various sectors of the economy. Thus, national income accounts provide "a quantified framework of output, spending and income". (Charles Schultz)

While studying national income accounting, students should have a prior knowledge of certain basic concepts, which are briefly summarized as under:

Productive and Non-productive Activities

Any activity which generates income or adds to the flow of goods and services in an economy is called productive activity. On the other hand, those activities which do not add to the flow of goods and services are non-productive activities. A teacher teaching in a college is a productive activity because it involves earning of money. But a teacher teaching his son in his house, though a useful activity in general parlance is not a productive activity because this does not involve earning of money.

Domestic Territory of a Country

It is an important concept used in national income accounting. It includes the following besides the geographical or political boundary:

(*i*) Territorial waters including sea-water of a country;

(*ii*) Ships and aircrafts owned and operated by the residents of a country between two or more countries;

(*iii*) Fishing vessels, oil rigs, and floating platforms operated by the residents in the international waters;

(*iv*) Embassies, consulates, high commissions and military establishments of the country located in foreign lands.

Normal Residents of a Country

A normal resident of a country is a person or institution that normally resides/located in a country and their economic interest lies in that country. It includes the following:

(*i*) Production units operating in the country;

(*ii*) Nationals and the foreign nationals who stay for more than a year in a country;

(*iii*) Nationals who have gone abroad but returned within a year;

(*iv*) Nationals working in the foreign embassies and international institutions located in a country;

(*v*) Students and patients of a country who have gone aboard and stay there even for more than a year.

However, the following persons/institutions are not included in the normal resident of a country:

(*i*) Foreign nationals who visit a country for purpose of conferences, tour etc and period of their stay in the country is of less than a year.

(*ii*) Crew members of foreign vessels, businessmen and workers whose stay is less than a year;

(*iii*) International organizations such as IMF, WTO, WHO, ILO, FAO etc located in a country;

(*iv*) Foreign national employees of international organizations, if they stay for less than a year;

(*v*) Foreigners who are employees of non-resident enterprises and who have come to the country for installing machinery etc and their stay are of less than a year.

Stocks and Flows

A stock is quantity measurable at a particular point of time whereas a flow is the quantity measurable over a period of time. Water in a tank at a particular point of time, say, at 9 am is a stock. And water flowing out from a tank over a period of time, say, between 9 am to 12 noon is a flow concept. Similarly, population of a country is a stock but number of births in a year is a flow.

Closed and Open Economy

A closed economy is one, which has no economic relations with the rest of the world. In other words, it is an economy that remains in isolation. It has no trade relations with any country, that is, no exports and imports take place in such an economy.

An open economy on the other hand is an economy which has economic relations with the outside world. In such an economy, export and imports are common. Exchanges of gifts and other transactions take place in an open economy.

National Capital and National Wealth

National capital is the total of all physical assets of a country that are helpful in further production. National capital consists of the following:

(*i*) Structures, which include residential buildings, commercial buildings and government buildings;

(*ii*) Equipment, which includes durable consumer and producers' goods and inventories;

(*iii*) Stocks of gold and silver with the governments as well as jewellery etc;

(*iv*) Net foreign assets, which is the value of our assets abroad less the value of assets owned by foreigners in our country.

National wealth is a broader concept than the national capital. It is the sum of all reproducible and irreproducible resources. National wealth is therefore the sum of national capital and natural resources.

Real and Financial Capital

Financial capital or assets refers to paper claims or paper titles such as debentures, bonds, national saving certificates, kisan vikas patra etc. These do not generate any new income. Therefore they are not included in the national income. Real capital is the physical capital or asset which helps in the production of goods. Machines, equipments, roads, inventories are the examples of real capital.

Investment

The excess of production over consumption when used for further production is called investment. Gross investment is the total investment made during a period. It includes inventory investment and fixed investment. Inventory investment is the investment made in the stocks of raw materials, semi-finished goods and finished goods. Investment made in fixed assets such as buildings, machines, equipments etc, is called fixed investment. Net investment is the gross investment less depreciation.

Category of Producers

In the study of national income accounting, it is essential to know different categories of producers. The three categories of producers are—household enterprises, corporate and quasi-corporate enterprises and general government.

Household enterprises are the consumer producers who produce goods and services for sale in the market. They are of three categories viz., unincorporated enterprises, non-profit institution serving households and households who render domestic services to other households. Unincorporated enterprises are the enterprises owned, controlled and managed by members of a family (producers of baskets, toys, retail traders, small shopkeepers etc). Non-profit institution serving households produces and extends services to households (charitable trusts, hospitals, trade unions etc). Households who render domestic services to other households such as domestic servants, cook, driver, gardener, watchman etc.

Corporate enterprises are large enterprises in public and private sectors which are set up under authority of law. All joint stock companies are corporate enterprises. Quasi-corporate enterprises are large unincorporated enterprises. Large-scale partnerships, sole-proprietorships, financial institutions and cooperative societies come under this category. Non-profit institutions serving business enterprises such as trade associations, chambers of commerce are also included in this category.

Government also organizes to produce and sell certain goods and services as private business enterprises. Such organizations/setups are called government enterprises. These include– departmental and non-departmental enterprises. Departmental enterprises are the enterprises operated by government departments such as railways, post and telegraphs, defence manufacturing etc, who get finance from government budget. Non-departmental enterprises are managed and controlled by government autonomous bodies. They do not get finance from the government budget. They are again divided into two categories—financial and non-financial enterprises. IFCI, ICICI, LIC, IDBI etc are financial non-departmental enterprises and ONGC, HMT, SAIL, BHEL etc are non-financial non-departmental enterprises.

The third category of producer is the general government. General government includes state and central governments which produces services of defence, law and order, street lighting, health, education etc. It does not sell its goods or services but provides to people either at very nominal price or free of cost.

Goods and Services

Goods are material things which satisfy human wants. Services are non-material goods that satisfy our wants. Services cannot be seen or touched and they do not have any shape. Table, chair, book, pens etc are goods while services of a teacher, a banker, a transporter, doctor, etc are the examples of services. There is a time lag between the production and consumption of goods. But services are instantly produced and consumed. For example, when a teacher delivers a lecture, students receive this immediately without any time gap. In case of goods, production takes time and consumption is not possible immediately. For example, making a cup of tea requires at least 10 minutes before it is consumed.

Goods may be economic or non-economic. Economic goods command price (payment of price is must) as these are scarce. Non-economic goods are available abundantly and freely. These goods are obtained without any payment. For example, air, water, sunshine etc are non-economic goods as these are freely obtainable. But bottled mineral water available nowadays are not available free of cost because mineral water is not abundant in towns and cities.

Again goods may be of single use or durable. Single use goods or perishable goods can be used only once while durable goods can be repeatedly used. Milk, food stuffs, etc are perishable goods and table, chair, car etc are durable goods. Clothes and shoes are semi-durable goods as do not lasts long.

Change in Stocks

It refers to the difference of closing stock and opening stock of producing units. It includes the following—(*a*) stocks of raw material, semi-finished goods and unsold finished goods with the produces; (*b*) stocks of food grains, and other important commodities; (*c*) livestock such as cows, goats, etc raised for slaughter by the producers.

Domestic Factor Income and its Components

Domestic factor income is the total income generated within the domestic territory by all producing units. The three components of domestic factor income are— ompensation of employees, operating surplus and mixed income of the self-employed.

Compensation of employees refers to all payments by producers to their employees in the form of wages and salaries both in kind and cash. It also includes social security contributions such as pension, provident fund, gratuity etc.

Operating surplus is the sum of income from property (interest and rent) and income from entrepreneurship (profits = dividend, corporate tax, and undistributed profits). Thus, it is the sum of interest, rent and profits. In other words, operating surplus is gross value of output less the sum of intermediate consumption, consumption of fixed capital, indirect taxes and compensation of employees.

Mixed income of the self employed is the income earned by self employed people like doctors, lawyers, chartered accountants, cobblers, barbers, shopkeepers, farmers etc. A part of their income is wage income and another part is property income. This is the reason that it is called mixed income.

15 MEASUREMENT OF NATIONAL INCOME—VALUE ADDED METHOD

MEASUREMENT OF NATIONAL INCOME

There are three methods of measuring national income. These are the following:

1. Net output method/Value added method/product method/industry of origin method,
2. Income method, and
3. Expenditure method.

These methods are explained as under:

Net Output Method/Value Added Method/Product Method/Industry of Origin Method

This method measures national income as the sum of net final output produced or net value added by all the firms in a year.

Steps to Estimate National Income by Value added/Product Method

National income by product method can be estimated using the following steps:

1. *Identification of production units and classifying them into industrial sectors:* The first step is to identify all the production units and classify these into three industrial sectors (*i*) primary sector, (*ii*) secondary sector, and (*ii*) tertiary sector.
2. *Estimation of net value added*: Net value added is estimated by estimating gross output produced by each enterprise, intermediate consumption, depreciation and net indirect taxes. Gross value of output can be measured by multiplying goods produced by the firms by their market prices. In other words, sales and change in stocks of all firms together gives the value of gross output. Net value added at market price is obtained by deducting the value of intermediate consumption (value of inputs that a firm obtains from other production units) and depreciation from gross value of output. Further, to get net value added at factor cost, we have to deduct net indirect taxes. Net indirect taxes is the indirect taxes less subsidies. The sum of net value added of all the industrial enterprises in the domestic territory of a country gives us net domestic product at factor cost.

3. *Estimation of net factor income from abroad:* The final step is to estimate net factor income from abroad and add it to the net domestic product in order to get national income or NNP_{fc}. Net factor income from abroad is the factor income of the residents of a country earned abroad less the factor income of foreign nationals earned in the domestic territory of the country. Thus,

National Income or NNP_{fc} = NDP_{fc} + Net factor income from abroad

Precautions in the Estimation of National Income by Product Method

We have to take certain precautions while measuring national income by value added method. There are certain items which should not be included and items which are to be included while estimating national income.

Households construct residential buildings for their living and business sector constructs factory buildings for the production of goods. These are own account production of fixed assets, the value of which is to be estimated at prevailing market price and included in the national income. Similarly, certain items are produced for self consumption which do not enter the market. Their value is also required to be calculated at the prevailing price in the market. Imputed rent is rent calculated for owner occupied houses. Rent of owner occupied houses is generally not calculated. For the sake of measuring national income, it must be estimated at the prevailing market price.

Households, government and private sector sell those goods which are worn or torn out. These are second hand goods. Any transactions (sale and purchase) related to second hand goods are not included in the national income since their value has already been included in the year of their production. These do not involve any new production in the economy. However, we must not forget to include commission or brokerage earned out of such transactions (to be used in measuring national income by income method). Any transactions related to financial assets such as sale and purchase of bonds and shares are also not to be included in the measurement of national income. Such transactions do not generate any new income or contribute to the flow of goods and services. These are only paper claims transferred from one hand to the other. For example, when we buy shares of a company, money from our hand goes to company's hand without any new production taking place in this transaction. Finally, services rendered by housewives are also excluded from the measurement of national income as they render services out of love, affection and sense of duty to their family. Such transactions are useful but not economic as these do not involve generation of income.

The items that are included and not included are summarized in the table below:

Items to be included	*Items to be excluded*
1. Own account production of fixed assets.	1. Sale and purchase of second hand goods.
2. Food and other items for self consumption.	2. Sale and purchase of bonds and shares.
3. Imputed rent of owner occupied houses.	3. Services of housewives.

Difficulties of the Product Method

The following difficulties arise while estimating national income by the product method:

1. Prices are not stable. These change frequently. In such situations, finding value of inventories becomes quite difficult.
2. It is difficult to determine the prices of goods which do not enter market and are kept for self-consumption. For instance, the value of owner-occupied buildings or imputed rent cannot be easily determined.
3. A clear cut distinction between the intermediate goods and the final goods is always not possible. Final goods for some may be intermediate goods for others.
4. In case the value of a capital good rises or falls due to changes in market conditions, it becomes difficult to estimate the depreciation.
5. It is still not clear whether services should be included in national income or not.
6. Lack of adequate and reliable data particularly in the unorganized and unincorporated enterprises is also a major problem in measurement of national income by value added method.

Questions for Review

1. Explain value-added method of estimating national income.
2. What is double counting? How can it be avoided?
3. What are transfer payments? How are they treated in the estimation of national income?
4. What are the components of net factor income from abroad?
5. Does transfer earning enter into national income?
6. What are final products?
7. Define value of output.
8. How is the value of gross output different from gross value added?
9. Distinguish between intermediate products and final products.
10. What is meant by value added?
11. Does the household sector produce goods and services?
12. Explain the problem of double counting.
13. Show how the sum of value added is equal to sum of factor incomes.

16 MEASUREMENT OF NATIONAL INCOME—INCOME METHOD

We know that factors of production viz., land, labour, capital and organization assist in production and get reward for their factor services. The reward that the factors of production receive for their services is called 'factor income'. The factors receive payments both in cash and kind. This is factor cost to the producer, which is equal to the factor income received by the factors of production.

The income method measures national income at the point of factor payments made to primary factors for the use of their services in the production process. In other words, national income is measured by taking sum total of all the incomes arising to primary factors of production. Thus, national income is the sum of rent, wages, interest and profits.

The *steps* to be followed while calculating national income by income method are explained briefly as below:

1. *Identification of production units and classifying them into industrial sectors:* The first step is to identify producing enterprises which employ factor services and classifying them into various industrial sectors such as primary, secondary and tertiary.
2. *Classification of factor incomes:* The factor incomes are classified into three categories—compensation of employees, property income and mixed incomes. Compensation of employees includes payments made by producers to their employees in the form of wages and salaries — both in cash and in kind, and contribution towards social security schemes. Property income is the income paid for the ownership and control of capital such as dividend (part of company's profit distributed to shareholders), undistributed profits (part of profit retained by companies for their development and other activities), corporate taxes (taxes levied on companies' income), interest, rent, royalties (payments made for the use of mineral deposits, use of patents, copyrights, trade marks etc), profits etc. Mixed income is the combination of wage and property incomes of self-employed (those who provide their own labour and capital services) people such as doctors, lawyers, shopkeepers, farmers, barbers, etc.
3. *Estimation of domestic factor income:* Domestic factor income is obtained by adding up the incomes generated in each industrial sector. In other words, the sum total of compensation of employees, property income and mixed incomes by all the production

units in the domestic territory of the economy during an accounting year gives the value of domestic factor income.

4. *Estimation of net factor income from abroad:* The last step is to estimate net factor income from abroad and add it to the net domestic product to get national income.

Precautions in the Estimation of National Income by Income Method

As already stated, income received from sale and purchase of second hand goods should not be included but commission earned in such transactions is to be included as this is new income generated in the economy. Transfer payments which do not generate income are to be excluded from the measurement of national income. Incomes from gambling, smuggling etc are not to be included as these are illegal activities. Windfall profits or gains are sudden incomes arise due to favourable conditions at certain times such as income from lotteries etc. These are not hard earned income. Such income is not included in the national income. Income from interest on national debt is also not included in the national income. Income from interest on national debt is the income from financial capital, which are only paper claims and they do not generate any new income. These are merely transfer of money from public to government.

Items to be included	*Items to be excluded*
1. Value of production for self consumption, such as agricultural products. 2. Imputed rent of owner occupied houses.	1. Income received from sale and purchase of second hand goods. 2. Income received from sale and purchase of bonds and shares. 3. All transfer payments like pensions, scholarships, subsidies. 4. Illegal incomes such as income from smuggling, gambling etc. 5. Corporation taxes. 6. Interest on national debt. 7. Wealth Tax, Death Duties, Gift Tax. 8. Windfall gains, such as income from lotteries.

The table above shows items to be included and excluded while calculating national income by income method.

Difficulties of the Income Method

The following difficulties arise while estimating national income by the income method:

1. To estimate mixed income of self employed people is not an easy task. It is difficult to get reliable information from unincorporated sector/unorganized sector.
2. Some economists opine that interest on national debt is used for productive purposes and therefore its value should be included. Thus, there is controversy whether to include it or not.
3. Income tax returns (account of incomes of an individual) are the basis of calculation

of income received in the country. In underdeveloped countries a very small proportion of income earners actually pay taxes. Therefore, income method may be of limited use in such countries.

Questions for Review

1. What precautions are necessary while estimating national income by income method?
2. What are the steps in the computation of national income by income method?
3. What is double counting? How can it be avoided?
4. What are transfer payments? How are they treated in the estimation of national income?
5. Why is the money received from the sale of shares not included in domestic capital factor income?
6. Can income from smuggling be included in national income accounting?
7. Is the expenditure on research and development an example of intermediate consumption?
8. Is windfall profit a part of national income?
9. What is meant by mixed income of the self-employed?
10. How is income generated in the production process?
11. State five precautions to be taken while estimating national income by income method.
12. What is GNP deflator?
13. Give reasons for not including leisure in GNP.
14. Does GNP measure national welfare?

17 MEASUREMENT OF NATIONAL INCOME—EXPENDITURE METHOD

Expenditure method measures national income at the disposition stage/spending point. It measures national income by computing final expenditure on gross domestic product by households, government and private sector.

COMPONENTS OF FINAL EXPENDITURE

The final expenditure in gross domestic product consists of the following:

(*i*) *Private final consumption expenditure:* It includes expenditure on goods and services by the households and private non-profit institutions such as schools, clubs etc.

(*ii*) *Government final consumption expenditure:* It includes expenditure on administration, defence, maintenance of law and order, education etc.

(*iii*) *Gross domestic capital formation:* It consists of expenditure on capital goods by the producers. It increases capital stock in the economy.

(*iv*) *Net exports of goods and services:* The value of import of goods and services minus the value of export of goods and services is called net exports.

The *steps* to be followed while calculating national income by expenditure method are explained briefly as below:

1. *Estimation of private final consumption expenditure*: To get final consumption expenditure by households and non-profit institutions serving as households, volume of goods and services on which money is spent is multiplied with their retail prices.
2. *Estimation of government final consumption expenditure*: Government final consumption expenditure is calculated in terms of the cost to the government as government services have no market price. This is because general government does not sell goods in the market. Therefore, cost to the government is the sum total of compensation of employees and the cost of the goods and services purchased by the government. Thus, government final consumption expenditure includes compensation of employees (wages and salaries) and net value of goods and services purchased by the government both in domestic and international market.

3. *Estimation of gross domestic capital formation:* It comprises expenditure on construction, machinery and equipments and changes in stocks.
4. *Net exports:* The last step is to find the value of net exports i.e., exports value minus imports value of goods and services.

The sum total of private and government final consumption expenditure, gross domestic capital formation and net exports gives us GDP at market prices. To get NNP at factor cost or national income, we have to deduct depreciation and net indirect taxes from GDP at market prices and add net factor income from abroad to it.

Precautions in the Estimation of Expenditure

The items to be included and excluded while estimating national income by expenditure method are as follows:

(1) Expenditure on secondhand goods should not be included because they are the part of the stock of goods produced in the past.

(2) Expenditure on the purchases of shares, bonds, etc., should not be included because these are paper titles, which only represent the ownership of property. No material things are produced through the purchase/sale of shares, bonds, etc.,

(3) Expenditure on pensions, scholarships, unemployment allowance, etc., should not be included because these are transfer payments.

(4) Expenditure on intermediate goods or semi-finished goods should be excluded to avoid double counting.

REMEMBER

1. To find 'net' from 'gross' aggregates, deduct depreciation;
2. To find measures at 'factor cost' from 'market' prices, deduct the value of net indirect taxes;
3. To estimate 'domestic' measures from 'national' measures, deduct the amount of net factor income from abroad.

Questions for Review

1. Describe the expenditure method of the estimation of national income and also explain the difficulties in using this method.

2. Define consumption of fixed capital.

3. How is capital loss different from the consumption of fixed capital?

4. Is the expenditure on research and development an example of intermediate consumption?

5. Name two types of expenditure that are included in the expenditure method.

6. Explain the meaning of non-market activities.

7. Explain the following terms:

(*a*) Business fixed investment (*b*) Inventory investment

(*c*) Residential construction investment (*d*) Public investment

18 AGGREGATE DEMAND AND AGGREGATE SUPPLY

MEANING OF AGGREGATE DEMAND

Aggregate demand refers to the total demand for all goods and services taken together. In other words, "it is the total volume of purchases that consumers, investors and government are willing to undertake." (Charles Schultze)

Thus, aggregate demand or aggregate expenditure consists of the following four components:

1. **Household consumption demand:** The total demand of goods and services for consumption purposes, by all households of the country is the household consumption demand. The level of consumption demand depends on the level of disposable income of household. If a households' disposable income increases, the total amount spent on consumption also increases. But consumption does not increase as fast as income. Saving also increases as result of increase in income of the household.
2. **Private investment demand:** Investment is the money spent on the creation of new capital assets. Private investment depends upon rate of interest and marginal efficiency of capital (expected rate of return of an additional unit of capital goods). An entrepreneur will continue to invest up to the point where rate of interest is equal to marginal efficiency of capital (MEC).
3. **Government demand for goods and services:** Today, government has become a prominent buyer of goods and services. Government demand these for meeting public needs such as roads, schools, health, irrigation, power and infrastructure, maintenance of law and order etc.
4. **Net export demand:** Net exports (exports minus imports) refer to foreign demand for goods and services produced by an economy. It is affected by many factors such as trade policy of the trading partners, relative prices of goods, incomes of the nations, foreign exchange rates etc.

Aggregate demand is, thus, composed of consumption expenditure/demand and investment expenditure/demand. In short,

$$Y = C + I$$

Where, Y = Income or aggregate demand; C = consumption demand and I = investment demand.

The aggregate demand schedule which shows levels of consumption and investment is shown as under:

Level of income (Y)	*Consumption expenditure (C)*	*Investment expenditure (I)*	*Aggregate expenditure (C + I)*
0	10	10	20
5	15	10	25
10	20	10	30
15	25	10	35
20	30	10	40
25	35	10	45
30	40	10	50

The Fig. 18.1 below shows aggregate demand curve.

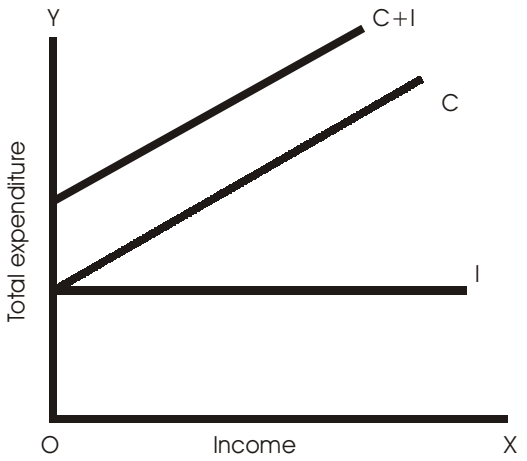


Fig. 18.1

MEANING OF AGGREGATE SUPPLY

It refers to the sum-total of goods and services produced in an economy during a certain period of time. It is nothing but net national product. Thus, aggregate supply is the aggregate cost of producing the output, which goes to factors as income in the form of wages, rent, interest and profits. The producers must receive the cost of producing the output in the economy. Thus,

$$\text{Aggregate Supply} = \text{Consumption} + \text{Saving}$$

i.e.
$$Y = C + S$$

Where, Y is total factor income, or domestic product, C is consumption, and S is saving.

The aggregate supply schedule shows levels of consumption and investment, which is shown as under:

Level of income (Y)	*Consumption expenditure (C)*	*Saving (S)*	*Aggregate Supply (C + S)*
0	20	–20	0
10	25	–15	10
20	30	10	20
30	35	–5	30
40	40	0	40
50	45	5	50
60	50	10	60

The Fig. 18.2 below represents aggregate supply curve. The aggregate supply curve as shown above is a straight line, originating from the origin, which makes it to form 45º angle.

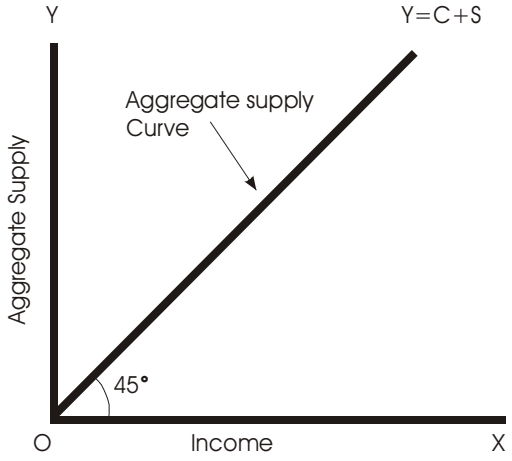


Fig. 18.2

Questions for Review

1. What is effective demand?

2. What is aggregate demand? State its components.

UNIT-8

19 DETERMINATION OF INCOME AND EMPLOYMENT

In macro economics, income and employment are used synonymously because in the short period national income depends on the total employment in the economy. Determination of income and employment is a major issue that economists have dealt with from time to time. It is necessary to first understand how classical economists have analyzed the determination of income and employment and then analyse the modern version of the theory of employment propounded by J.M. Keynes in his book, "General theory of Employment, Interest and money."

CLASSICAL THEORY OF EMPLOYMENT

Classical theory of employment assumes full employment of labour and other productive resources. The classical economists also opined that it is the flexibility of prices and wages which brings about full employment in the economy.

According to classical economists, general over-production which results in general unemployment is impossible. There may be temporary instability in the economy but it is restored within a short period. Thus, they believed that there will always be a stable equilibrium at full employment. Any disturbances in the full employment situation may be due to government interference or any other causes in the free market economy. As government does not interfere in free market activities, there is no possibility of general unemployment or instability in the normal situation, i.e., stable equilibrium at the full employment level. According to classical theorists, it is market forces of demand and supply which determines how to allocate resources and what rewards the factor resources should get.

Prices and wages, classical economists say, are flexible. This helps in bringing full employment by itself. In a situation when there is general over production in the economy; it would result in depression (a situation when all business activities are at very low level) and hence large scale unemployment. Thus, prices would go down. This in turn results in increase in demand which would push prices up and in this way business activities will get a boost and unemployment would disappear. Wages can also help in increasing unemployment if it is flexible. For example, wages are lowered to increase demand for labour.

Jean-Baptiste Say (Jan 5, 1767—Nov 15, 1832) was a French economist and businessman. He had liberal views and argued in favour of competition, free trade and lifting restraints on business.

Say is well known for Say's Law, often summarised as "Aggregate supply creates its own aggregate demand". He argued that production and sale of goods in an economy automatically produces an income for the producers of the same value, which would then be reinjected into the economy and create enough demand to buy the goods. Thus production is determined by the supply of goods rather than demand. Unemployment of men, land or other resources would not be possible unless it were by choice, or due to some kind of restraint on trade.

He was also among the first to argue that money was neutral in its effect on the economy. Money is not desired for its own sake, but for what it can purchase. An increase in the amount of money in circulation would increase the price of other goods in terms of money (causing inflation), but would not change the relative prices of goods or the quantity produced. This idea was later developed by economists into the Quantity theory of money. Say's ideas helped to inspire neoclassical economics which arose later in the 19th century.

SAY'S LAW OF MARKETS

French economist Prof. J.B. Say's law of markets is the foundation of classical theory of employment and income. This law states that there is no possibility of general overproduction and hence general unemployment in the economy. According to Say, "It is production which creates market for goods; for selling is at the same time buying and more of production, more of creating demand for other goods. Every producer finds a buyer". Thus, whatever is supplied in the economy, demand for it is automatically generated so that there is no general overproduction. Hence, it is said, 'supply creates its own demand'. When production takes place, it generates incomes for factor resources. The income so generated is spent on goods produced in the economy. Thus income is generated at the same time when goods are produced in the economy. It is therefore production which creates market for goods or demand.

According to say's law, there would always be adequate amount of expenditure on goods so that there is full employment of resources. Factor resources spend their income on goods and a part of it is saved. But savings so generated is invested on capital goods. Thus, classical economists assumed savings and investments to be equal. Since, there is no possibility of any break in the flow of income stream; supply would always create its own demand. Any difference between savings and investment would be brought to equality by the prevailing market rate of interest.

Assumptions of Say's Law

The important assumptions of Say's law of markets are the following:

1. There is free exchange economy and there is no government intervention. It follows the policy of laissez-faire. Buyers and sellers are free to buy and sell goods as they wish.
2. There is perfect competition prevailing in the market.
3. There is no break in the flow of income. Whatever income is received is spent. Savings and investments are also assumed to be equal.
4. The size of the market is limited by the volume of production.

J.M. Keynes vehemently criticized the classical theory on the ground that supply does not create its own demand and that cut in wage rate cannot increase employment during depression.

Saving is the leakage in the income stream, which breaks the flow of income and expenditure in the economy. It does not allow the whole income earned to be spent on what is produced. Unless investors are willing to invest an equal amount of intended savings, the total effective demand will not be adequate to absorb the entire available supply of output. Effective demand is the demand for consumers' goods and producers' goods. Thus there will be general overproduction and unemployment.

Savers have different reasons for their savings. Likewise, investors have different reasons for their investment. Thus there is no mechanism which ensures that intended saving and intended investment are equal because these are undertaken by different persons for different reasons. Savings is the function of income. It depends on income of a person. On the other hand, investment demand depends in the short run, primarily, on marginal efficiency of capital and rate of interest. Changes in technology and growth in population in a country are the long run factors which affects investment demand. Marginal efficiency of capital (MEC) is the yield expected from a new capital asset. Inducement to invest of a businessman depends on marginal efficiency of capital. High marginal efficiency of capital induces investment.

Keynes argued that a general cut in wages will not increase employment because wages are income to a large section of population. When purchasing power gets reduced, their demand for goods and services also falls. Employment in the economy depends on effective demand (aggregate spending) and not on wage level.

According to Keynes, the implication of Say's "law" is that a free-market economy is always at what the Keynesian economists call full employment. Thus, Say's law is part of the general world-view of laissez-faire economics, i.e., that free markets can solve the economy's problems automatically (here the problems are recessions, stagnation, and involuntary unemployment). There is no need for any intervention by the government or the central bank to help the economy attain full employment.

In fact, modern proponents of Say's law argue that such intervention is always counterproductive. Consider Keynesian-type policies aimed at stimulating the economy. Increased government purchases of goods (or lowered taxes) merely "crowds out" the private sector's production and purchase of goods. From a modern macroeconomic viewpoint Say's law is subject to dispute. John Maynard Keynes and many other critics of Say's law have paraphrased it as saying that "supply creates its own demand". Under this definition, once a producer has created a supply of a product, consumers will inevitably start to demand it. This interpretation allowed for Keynes to introduce his alternative perspective that "demand creates its own supply" (up to, but not beyond, full employment). Some call this "Keynes' law".

KEYNES VS. SAY

Keynsian economics places central importance on demand, believing that on the macroeconomic level, the amount supplied is primarily determined by effective demand or aggregate demand. For example, without sufficient demand for the products of labor, the availability of jobs will be low; without enough jobs, working people will receive inadequate income, implying insufficient

demand for products. Thus, an aggregate demand failure involves a vicious circle: if I supply more of my labor-time (in order to buy more goods), I may be frustrated because no-one is hiring – because there is no increase in the demand for their products until after I get a job and earn an income. (Of course, most get paid after working, which occurs after some of the product is sold.)

Keynesian economists also stress the role of money in negating Say's Law. (Most would accept Say's Law as applying in a non-monetary or barter economy.) Suppose someone decides to sell a product without immediately buying another good. This would involve hoarding, increases in one's holdings of money (say, in a savings account). At the same time that it causes an increased demand for money, this would cause a fall in the demand for goods and services (an undesired increase in inventories (unsold goods) and thus a fall in production). This general glut would in turn cause a fall in the availability of jobs and the ability of working people to buy products. This recessionar process would be cancelled if at the same time there were dishoarding, in which someone uses money in his hoard to buy more products than he or she sells. (This would be a desired accumulation of inventories.)

Some classical economists suggested that hoarding would always be balanced by dishoarding. But Keynes and others argued that the hoarding decision are made by different people and for different reasons than the decisions to dishoard, so that hoarding and dishoarding are unlikely to be equal at all times.

Some have argued that financial markets and especially interest rates could adjust to keep hoarding and dishoarding equal, so that Say's Law could be maintained. But Keynes argued that in order to play this role, interest rates would have to fall rapidly and that there were limits on how quickly and how low they could fall (as in the liquidity trap). To Keynes, in the short run, interest rates were determined more by the supply and demand for money than by saving and investment. Before interest rates could adjust sufficiently, excessive hoarding would cause the vicious circle of falling aggregate production (recession). The recession itself would lower incomes so that hoarding (and saving) and dishoarding (and real investment) could attain balance below full employment. Worse, a recession would hurt private real investment, by hurting profitability and business confidence, in what is called the accelerator effect. This means that the balance between hoarding and dishoarding would be even further below the full employment level of production.

Kensians believe that this kind of vicious circle can be broken by stimulating the aggregate demand for products using various macroeconomic policies mentioned in the introduction above. Increases in the demand for products leads to increased supply (production) and an increased availability of jobs, and thus further increases in demand and in production. This cumulative causation is called the multiplier process.

Most modern advocates of laissez-faire economics have rejected Say's Law, except perhaps in the long run. Instead, the emphasis is on the automatic adjustment of the labor market to get to full employment: if wages are allowed to fall, this increases the availability of jobs and allows full employment. Many advocates of laissez-faire economics are quite activist in their approach, advocating the use of state power to destroy unions, minimum wage laws, and the like in order to make labor markets more "flexible" so that this idealized vision of labor markets can be attained.

FULL EMPLOYMENT AND INVOLUNTARY UNEMPLOYMENT

Economists distinguish between five major kinds of unemployment, i.e., cyclical, frictional, structural, classical, and Marxian. Real-world unemployment may combine different types, while all five might exist at one time. The magnitude of each of these is difficult to measure, partly because they overlap and are thus hard to separate from each other. All but cyclical unemployment can

be seen as existing at full employment, the level of employment and unemployment that represents the inflation barrier to demand-side growth.

According to classical economists, **full employment** is a situation when there is no 'involuntary unemployment', though there may be other types of employment such as frictional, structural or voluntary employment. Thus, full employment is a situation in which the economy's resources are being used fully. In other words, it is zero deflationary unemployment i.e., a situation in which all those who want to work at the current rate of wages are, in fact, employed. A worker is said to be **voluntary unemployed** when he refuses to work at the current wage rate.

Cyclical unemployment exists due to inadequate effective aggregate demand. It gets its name because it varies with the business cycle, though it can also be persistent, as during the Great Depression of the 1930s. Gross Domestic Product is not as high as potential output because of demand failure, due to (say) pessimistic business expectations which discourages private fixed investment spending. Low government spending or high taxes, under consumption, or low exports net of imports may also have this result.

In this case, the number of unemployed workers exceeds the number of job vacancies, so that if even all open jobs were filled, some workers would remain unemployed. This kind of unemployment coincides with unused industrial capacity (unemployed capital goods). Keynesian economists see it as possibly being solved by government deficit spending or by expansionary monetary policy, which aims to increase non-governmental spending by lowering interest rates.

Frictional unemployment is a situation when a worker is unemployed because he lacks the required skills or placed in wrong jobs. This type of unemployment is caused by immobility of labour, seasonal nature of work, short-term scarcity of raw materials, collapse of machinery etc. In other words, it involves people being temporarily between jobs, searching for new ones; it is compatible with full employment. (It is sometimes called **search unemployment** and is seen as largely voluntary.) It arises because either employers remove workers or workers quit, usually because the individual characteristics of the workers do not fit the individual characteristics of the job.

This type of unemployment coincides with an equal number of vacancies and cannot be solved using aggregate demand stimulation. The best way to lower this kind of unemployment is to provide more and better information to job-seekers and employers. In theory, an economy could also be shifted away from emphasizing jobs that have high turnover, perhaps by using tax incentives or worker-training programs. But some frictional unemployment is beneficial, since it allows workers to get the jobs that fit their wants and skills best and the employers to find employees who promote profit goals the most. One kind of frictional unemployment is called **wait unemployment**: it refers to the effects of the existence of some sectors where employed workers are paid more than the market-clearing equilibrium wage. Not only does this restrict the amount of employment in the high-wage sector, but it attracts workers from other sectors who *wait* to try to get jobs there. The main problem with this theory is that such workers will likely "wait" while having jobs, so that they are not counted as unemployed.

Structural unemployment is said to exist when large number of persons are unemployed because the co-operant factors of production which engage them fully are not sufficiently available. There may be scarcity of land, capital, in the economy causing structural unemployment. In other

words, it involves a mismatch between the workers looking for jobs and the vacancies available. Even though the number of vacancies may be equal to the number of the unemployed, the unemployed workers lack the skills needed for the jobs — or are in the wrong part of the country or world to take the jobs offered. That is, it is very expensive to unite the workers with jobs.

Structural unemployment is a result of the dynamic changes of a capitalist economy such as technological change and capital flight. Workers are "left behind" due to costs of training and moving, and inefficiencies in the labour markets.

Structural unemployment is hard to separate empirically from frictional unemployment, except to say that it lasts longer. It is also more painful. As with frictional unemployment, simple demand-side stimulus will not work to easily abolish this type of unemployment. Some sort of direct attack on the problems of the labor market — such as training programs, mobility subsidies, or anti-discrimination policies are better solutions. These policies may be reinforced by the maintenance of high aggregate demand, so that the two types of policy are complementary.

NOTE ON MARXIAN UNEMPLOYMENT

As Karl Marx noted, some unemployment — the **reserve army of the unemployed** — is normally needed in order to maintain work discipline in jobs, keep wages down, and protect business profitability. If profitability suffers a sustained depression, capitalists can and will punish people by imposing a recession via their control over investment decisions (a *capital strike*). To the Marxian School, these strikes are rare, since in normal times the government, responding to pressure from their most important constituencies, will encourage recessions before profits are hurt.

To Marxists, this kind of unemployment cannot be abolished without overthrowing capitalism as an economic system and replacing it with democratic socialism — or running capitalism using a fascist state, under which profitability is protected by the systematic use of direct force.

As with cyclical and classical unemployment, with Marxian unemployment, the number of jobless exceeds the availability of vacancies. (It's the scarcity of jobs that gives unemployment such a motivational effect.) However, simple demand stimulus in the face of the capitalists' refusal to hire or invest simply encourages inflation: if profits are being squeezed, the only way to maintain high production is via rising prices.

Structural unemployment may also be encouraged to rise by persistent cyclical unemployment: if an economy suffers from long-lasting low aggregate demand, it means that many of the unemployed become disheartened, while finding their skills (including job-searching skills) become 'out of form' and obsolete. Problems with debt may lead to homelessness and a fall into the vicious circle of poverty. This means that they may not fit the job vacancies that are created when the economy recovers. The implication is that sustained *high* demand may *lower* structural unemployment. However, it also may encourage inflation, so some kind of income policies (wage and price controls) may be needed, along with the kind of labor-market policies.

Much **technological unemployment** (e.g., due to the replacement of workers by machines) might be counted as structural unemployment. Alternatively, technological unemployment might refer to the way in which steady increases in labor productivity mean that fewer workers are needed to produce the same level of output every year. The fact that aggregate demand can be raised to deal with this problem suggests that this problem is one of cyclical unemployment.

Seasonal unemployment might be seen as a kind of structural unemployment, since it is a type of unemployment that is linked to certain kinds of jobs like construction work, migratory farm work etc.

Involuntary unemployment is the situation in which people are willing to work at current or slightly lower level of wages, but do not find jobs due to deficiency of aggregate effective demand. When involuntary unemployment exists, equality between aggregate demand and aggregate supply is at a point less than the level of full employment. In other words, equilibrium attained is underemployment equilibrium.

J.M. Keynes defined full employment as a level of employment where increase in **effective demand** does not lead to an increase in the level of output and employment. In other words, full employment is a level of employment where given capacity of an economy is fully utilized. It is a situation beyond which an increase in effective demand does not result in an increase of employment and output. Effective demand is the total money spent on consumption and investment. It is the demand for output as a whole. A full employment situation is shown in Fig. 19.1. At full employment level, note that AD = AS. Point E where aggregate demand and aggregate supply are equal is the point of effective demand. In any economy, effective demand represents the money actually spent by people on the products produced in the economy. The money received by producers from sale of their products is distributed to factors in the form of wages, rent, interest and profit. Therefore, effective demand is equal to national income/national output. Thus,

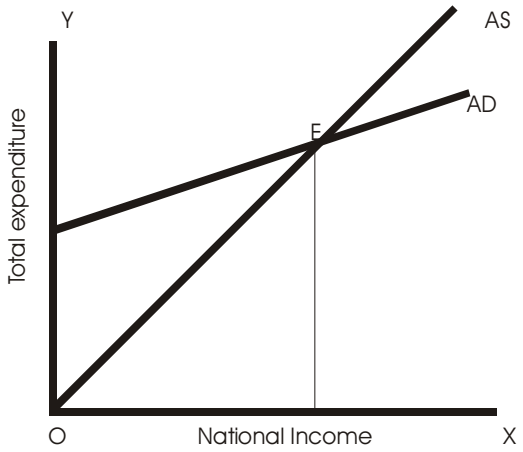


Fig. 19.1

Effective demand (E) = national income (Y) = national output (O)
= expenditure on investment goods (I) + expenditure on consumption goods (C).

Therefore,

$$E = Y = C + I = O = \text{Employment.}$$

Hence, effective demand determines employment at a particular time. In modern days, the role of government has increased significantly. Therefore, we have to include government sector also so that,

$$E = C + I + G$$

The principle of effective demand occupies an important place in the Keynesian theory of employment since total demand in the economy determines employment level. A deficiency of effective demand causes the situation of unemployment.

The important **determinants of effective demand** are the following:

(*a*) *Aggregate demand function:* It represents a schedule of proceeds or money expected from the sale of the output produced at different levels of output. In other words, aggregate demand price at any level of employment is the amount of money which all producers in the economy expect that they will receive by sale of output produced by the employed workers. Thus, aggregate demand is measured in terms of the quantity of labour employed and not in terms of a unit of commodity, as in case of determination of demand for products of an individual firm. Aggregate demand schedule is an increasing function of the amount of employment. It shows increase in aggregate demand price as the amount of employment increases.

(*b*) *Aggregate supply function:* It is a schedule showing the minimum amounts of proceeds required to induce producers to give varying amounts of employment. In other words, the minimum expected proceeds or money out of sale of the output resulting from a given amount of employment is called aggregate supply price. Thus, these are minimum expected money from sale that producers must receive so that they are induced to provide a certain level of employment. This is also an increasing function of the employment.

The determination of equilibrium level of employment in the economy is explained in the next section.

DETERMINATION OF INCOME AND EMPLOYMENT

The equilibrium level of income in an economy is determined at the point where aggregate demand (AD) is equal to aggregate supply (AS).

The following table describes the determination of equilibrium level of income and employment in the economy.

Level of income (Y)	*Aggregate expenditure (C + I)*	*Aggregate supply (C + S)*
0	20	0
10	25	10
20	30	20
30	35	30
40	**40**	**40**
50	45	50
60	50	60

It is seen in the table that the aggregate demand is equal to aggregate supply when the level of income in the economy is Rs. 40 crore. This is the equilibrium level of income and employment. It is also known as the level of effective demand. There may be cases when aggregate demand is more or less than the aggregate supply. In either case, there is imbalance and this needs to be corrected by adopting various measures under the hands of monetary authority of the country.

The equilibrium level of income and employment is illustrated in the Fig. 19.2. AS and AD are the aggregate supply and aggregate demand curve respectively. Because the sum of all income received corresponds to the sum of all production, AS is drawn as a 45 degree line. Both these curves intersect each other at point E, which is the equilibrium point. At this point of equilibrium, income, the aggregate demand and aggregate supply-all amounts to Rs. 40 crore.

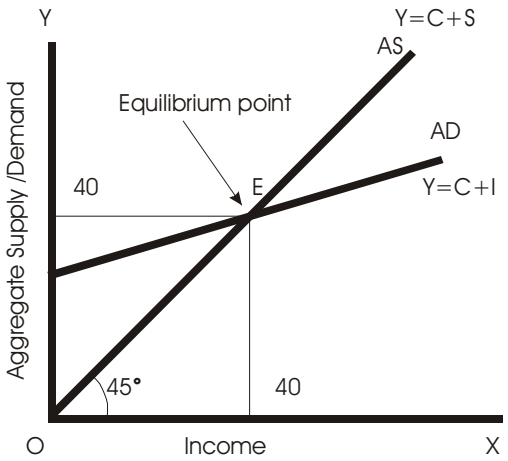


Fig. 19.2

The movement toward equilibrium is mostly via changes in inventories inducing changes in production and income. If current output exceeds the equilibrium, inventories accumulate, encouraging businesses to cut back on production, moving the economy toward equilibrium. Similarly, if the level of production is below the equilibrium, then inventories run down, encouraging an increase in production and thus a move toward equilibrium. This equilibration process occurs when the equilibrium is stable, i.e., at point E.

It may be noted that the economy is no doubt in equilibrium at point E because the producers have no tendency to either increase or decrease employment, but this may not be the point of full employment. Aggregate demand and aggregate supply might be equal to full employment. This is so when investment happens to equal the gap between aggregate supply price and the amount spent on consumption. According to Keynes, investment is never sufficient to fill up such gap. Thus, there is every likelihood that aggregate demand and aggregate supply meet each other at a point less than full employment level, which is called underemployment equilibrium. If any of the components of aggregate demand rises at each level of income, for example because business becomes more optimistic about future profitability, that shifts the entire AD line *upward*. This raises equilibrium income and output. Similarly, if the elements of AD fall, that shifts the line downward and lowers equilibrium output.

Saving and Investment Equality—An Alternative Approach to Determination of Income and Employment

There is another way to determine the equilibrium level of income and employment by bringing equality between saving and investment.

Saving is the excess of income over consumption expenditure (S = Y – C). According to Keynes, aggregate saving is the result of the saving of individuals in the economy. It is current income which determines the current saving and not the past income as stated by Robertson. Swedish economists have defined saving in ex-ante and ex-post sense. According to them, ex-ante savings are planned or expected savings of the economy. Ex-post savings are actual or realized savings.

Investment, according to Keynes, is the additions to the stock of real capital assets such as the construction of roads, new factories, infrastructure, etc in the economy. His definition excludes investment on financial assets such as purchase of stocks, securities, bonds, etc. Investment also includes additions to inventories (stock of goods). Ex-ante investment is planned or expected investments of the economy. Ex-post investment is actual or realized investment.

Saving, in a sense, is withdrawal of money from the income stream whereas investment is injection of money into the income stream. When intended investment is greater than intended saving, it means more money is put into the income stream than what is taken out. Thus, national income will increase in such case. In case, intended investment is less than the intended saving, it would mean more is withdrawn from the income stream than what is put into it. This results in decrease in national income. When intended saving is just equal to intended investment, it would mean that what is withdrawn is put into the income stream. At this position, national income will be in equilibrium. The Fig. 19.3 below shows determination of national income by equality of saving and investment.

Income is measured along x-axis and saving and investment along y-axis. SS and II are the saving and investment curves respectively. Investment at a particular time is assumed to be constant at any level of income. This is the reason why investment curve is straight line parallel to x-axis. SS and II curves intersect each other at point E. At this point intended saving and intended investments are equal. OY is the national income determined.

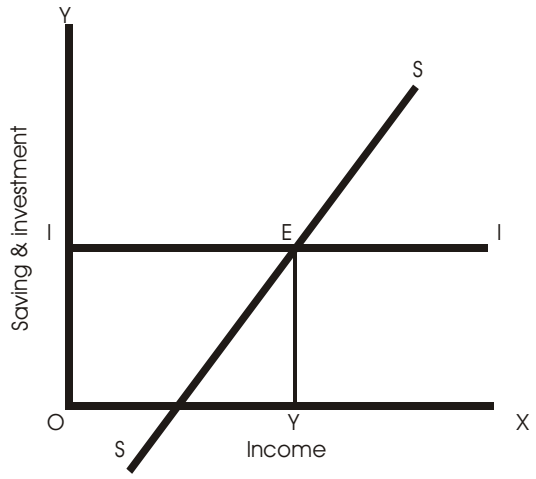


Fig. 19.3

SAVING AND INVESTMENT EQUALITY— A CONTROVERSY

There is a controversy whether saving and investment are always equal. Some economists are of view that savings and investment are made by two different classes of people having different motives. Therefore, it is not necessary that planned (ex-ante) savings may be equal to planned (ex-ante) investment. But actual (ex-post) savings are always equal to actual (ex-post) investment. The equality of saving and investment is derived from the general equality of aggregate demand and aggregate supply (Y = C + I). In macro sense, what the households plan to save is equal to what the firms plan to invest. According to Keynes, national income is derived from the production and sale of consumer and investment goods. That is,

$$Y = C + I \quad ...(i)$$

We know that income is also equal to saving and consumption. Thus,

$$Y = C + S \quad ...(ii)$$

Where, C is consumption expenditure and S is saving out of total income.

From equations (*i*) and (*ii*), we get:

$$C + I = C + S$$

$$\therefore \quad I = S$$

When planned savings are less than planned investment, national income will be less than the equilibrium level of income. There will be excess demand in the economy. As such production will have to be increased to meet this excess demand. This will increase income where savings and investment are equal. When planned saving are more than planned investments, national income will be more than the equilibrium level of income. As a consequence, consumption lags behind production. This will lead to stock piling which would compel producers to cut down their levels of production. Thus, income will decline and equilibrium level is restored to its original position, where savings will be equal to investment.

Questions for Review

1. What is effective demand?
2. What happens to the level of income in an economy when ex-ante (intended) savings are less than the ex-ante (intended) investment?
3. How is equilibrium level of income or employment determined?
4. What is aggregate demand? State its components.
5. What is the difference between ex-ante saving and ex-post saving?
6. What is meant by ex-post saving?
7. “Saving and investment are always equal.” Discuss.
8. How is the classical concept of aggregate supply different from the Keynesian concept of aggregate supply?
9. Which are the elements important in understanding investment?
10. What is the investment demand function?
11. How does the introduction of government sector affect economy?

20 CONSUMPTION FUNCTION

Households spend a part of their total income on purchase of goods and services to satisfy their wants. This is known as consumption. Moreover, they also save a part of their income by not spending on goods and services. This is known as saving. According to classical economists consumption and savings depend on rate of interest. Keynes stated that consumption expenditure depend on levels of income and relatively unaffected by interest rates.

PROPENSITY TO CONSUME OR PSYCHOLOGICAL LAW OF CONSUMPTION

The relationship between consumption and the level of income is referred to as propensity to consume or *consumption function*. In other words, consumption is a function of income. Thus, $C = f(Y)$ where C stands for consumption expenditure, f = function, and Y is income. Keynes observes that as income increases, consumption also increases, but by less than the increase in income. The reason is that people do not spend the whole of their increased income on consumption. According to Keynes, "The psychology of the community is such that when aggregate real income is increased, aggregate consumption is increased, but not by so much as income." Keynes law of consumption depends upon the following propositions:

(*a*) As aggregate income increases, spending on consumption also increases but by less than increase in income;

(*b*) Amount of increase in income is divided into a certain ratio of saving and spending;

(**c**) Increase in income does not lead to either less saving or less spending than before.

Thus, consumption function shows spending of consumers on goods and services at different levels of disposable income. Thus, consumption function expresses the relation between income (Y) and consumption (C). Consumption is the function of income so that $C = f(Y)$. The following schedule shows consumption expenditure at different levels of disposable income. It is seen that when income increases consumption expenditure also increases. But the rate of increase in consumption expenditure is not same beyond the level of income of Rs. 18 crores as initially. It increases at decreasing rate. This is why the consumption expenditure curve in the Fig. 20.1 below rises upward as income increases and rises at a lesser degree at the later part of the curve.

Disposable income (Y) in Rs. Crores	*Consumption (C) in Rs. Crores*
10	6
12	7
14	8
16	9
18	10
20	10.5
22	10.8
24	10.8

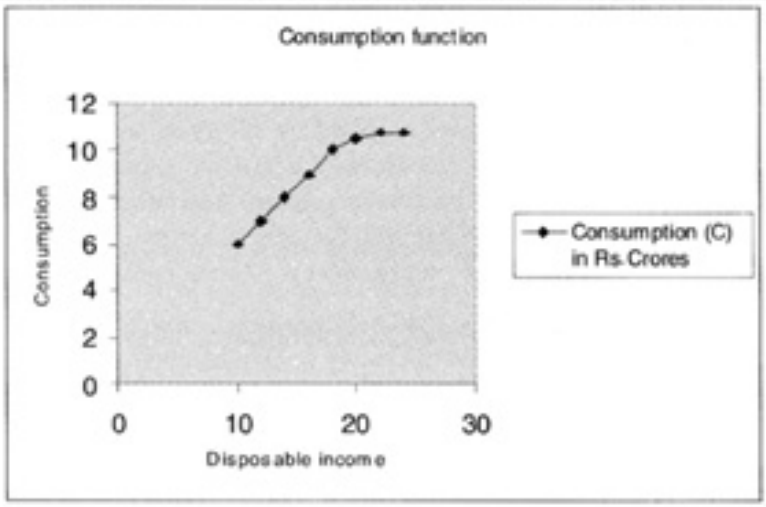


Fig. 20.1

The two ways of measuring this relationship between income and consumption are the following:

(*a*) The average propensity to consume (APC), and

(*b*) The marginal propensity to consume (MPC).

These are explained as under:

The Average Propensity to Consume (APC)

The average propensity to consume is the ratio of consumption to income. It can be expressed as under:

$$\text{APC} = \frac{\text{C}}{\text{Y}}$$

For example, if total income is Rs. 500 crores and total consumption is Rs. 200 crores, then,

$$\text{APC} = \frac{200}{500} \text{ or } 0.4$$

The Marginal Propensity to Consume (MPC)

The ratio of change in consumption to change in income is known as marginal propensity to consume. Symbolically, change (Δ) in the income is denoted as ΔY (read as delta Y) and change in consumption as ΔC. Hence,

$$MPC = \frac{\Delta C}{\Delta Y}$$

For example, if income increases by Rs. 40 crores and as a result consumption increase by Rs. 20 crores, then,

$$MPC = \frac{20}{40} \text{ or } 0.5$$

We have shown below a table illustrating the concept of APC and MPC.

Income (Y) in crores Rs.	*Consumption (C) crores Rs.*	*APC = C/Y*	*MPC = ΔC/ΔY*
0	5	–	–
5	7	1.4	0.4
10	10	1.0	0.6
15	12	0.8	0.4
20	15	0.75	0.6
25	17	0.68	0.4
30	20	0.66	0.6
35	22	0.62	0.4

This can also be explained diagrammatically as below:

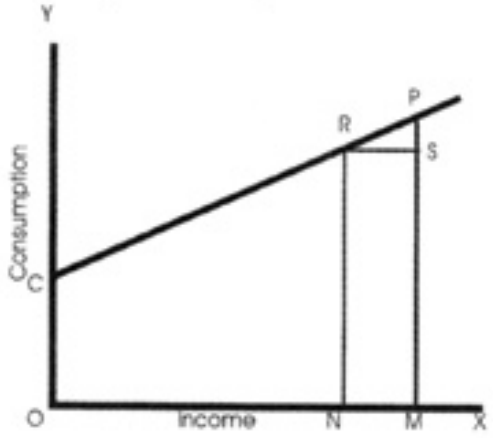


Fig. 20.2

C is the consumption curve. At the income level of ON, consumption expenditure is NR.

Thus APC can be measured as,

$$APC = \frac{C}{Y}$$

$$APC = \frac{NR}{ON}$$

Similarly, MPC can be found by using the formula as shown under:

$$MPC = \frac{\Delta C}{\Delta Y}$$

Since $\Delta Y = OM - ON\ (= NM)$ and $\Delta C = PM - NR\ (= PS)$. Therefore,

$$MPC = \frac{\Delta C}{\Delta Y} = \frac{PS}{NM} = \frac{PS}{RS}$$

PROPENSITY TO SAVE/SAVING FUNCTION

The relationship between the change in income and the change in saving is the propensity to save. We can also express propensity to save in two different ways. These are the following:

(*a*) The average propensity to save (APS), and

(*b*) The marginal propensity to save (MPS).

The Average Propensity to Save (APS)

The average propensity to save is the ratio of total savings to total income. Thus,

$$APS = \frac{S}{Y}$$

where, S = saving and Y = income.

The Marginal Propensity to Save (MPS)

Marginal propensity to save is the ratio of change in saving to change in income. Symbolically, change in income is denoted as ΔY and change in saving as ΔS. Hence,

$$MPS = \frac{\Delta S}{\Delta Y}$$

We know that MPC + MPS = 1. Therefore, MPS = 1 – MPC or

$$MPS = 1 - \frac{\Delta C}{\Delta Y}$$

RELATIONSHIP BETWEEN APC AND MPC

The following relationships arise between APC and MPC:

(*i*) MPC refers to marginal increase in consumption due to marginal increase in income and APC means the ratio of total consumption to total income.

(*ii*) As income increases, both MPC and APC decline but decline in MPC is more than the decline in APC.

(*iii*) When MPC is constant, the consumption function is a straight line curve.

(*iv*) MPC is higher in case of poor communities and lower in case of rich communities. This is because the basic needs of rich communities have already been fulfilled and any further increase in income is saved. But in case of poor communities, most of the basic needs remain unfulfilled and as a result, any additional increase in income increases their consumption.

IMPLICATIONS AND IMPORTANCE OF PSYCHOLOGICAL LAW OF CONSUMPTION

The important implications of Psychological Law of Consumption are the following:

1. *Crucial role of investment:* The Psychological Law of Consumption establishes vital and crucial role of investment when the community spends less than the increase in income. This is important for increased output and employment in the economy.
2. *Repudiation of Say's Law:* Keynes' law invalidates Say's Law of Markets that supply creates its own demand. Keynes assumes MPC being less than one. Thus, all that is increased is not consumed. Keynes' law explains general overproduction and general unemployment in the economy. The supply fails to create its own demand.
3. *Declining marginal efficiency of capital:* The expected rate of profit from a capital asset or MEC may fall as a result of constant or not rising propensity to consume. This tendency could be avoided if propensity to consume can be increased with the rise in income. Thus, stable consumption with rise in income tends to lower MEC and investment in the short run.
4. *Oversaving gap:* Oversaving gap is the difference between the amount people planned to save and the total volume of private investment. When consumption function remains constant or does not rise with increase in income, an oversaving gap tends to exist.
5. *Explains turning points of business cycle:* As MPC is less than one; it helps in explaining the turning points of business cycle. The causes of upswings and downswings of business activities are explained.
6. *Effective demand:* Keynes law of consumption has helped us in explaining the determinants of effective demand and underemployment equilibrium.

FACTORS INFLUENCING CONSUMPTION FUNCTION

The important factors influencing consumption function are the following:

1. *Subjective factors*: Psychological motives which affect propensity to consume consist of subjective factors. These motives affect both individual and corporate savings. Such motives are family affection, old age security, foresight, precaution, etc. According to Keynes individual's decision to consume or save is a choice between the present and future consumption. People refrain from present consumption sometimes and keep bank

balances to meet their unforeseen contingencies. There are some motives which also induce a person to increase consumption such as better standard of living, extravagance, generosity, enjoyment, recreation etc.

2. *Objective factors*: Consumption function is affected by objective factors such as income, distribution of income, financial policies of corporation, changes in expectations, windfall gains, fiscal policy, demographic factors, wage rates, wealth and stock of money, liquid assets, changes in the rate of interest etc. The most important factor which affects consumption function is the income. As income rise or falls, consumption also rises or falls. Distribution of income and wealth is another important factor. Widespread inequality of income lowers the overall propensity to consume. Financial policies of companies such as less payment of dividend and retaining more reserves also affect consumption habits of people. People in such situation spend less. People have expectations regarding future events. If they expect a war in near future, they spend more on current consumption. When speculators expect fall in future bond prices, they sell bonds at current prices. Sudden or unexpected gains also results in increase in consumption. The government's fiscal policy also affects consumption function greatly. A progressive taxation brings about more equitable distribution of income, thereby increasing consumption. On the other hand, a regressive tax policy will reduce consumption in the economy. Liquid assets also affect propensity to consume. It has been observed that people having large amount of liquid assets have greater tendency to consume.

Questions for Review

1. Explain the concept of consumption function.
2. What is propensity to consume?
3. What is marginal propensity to consume?
4. What is propensity to save?
5. What is average propensity to save?
6. What is marginal propensity to save?
7. Define average propensity to consume.

21 CONCEPT OF MULTIPLIER

MEANING OF INVESTMENT MULTIPLIER AND ITS WORKING

The concept of 'Multiplier' occupies an important place in Keynesian theory of income, output and employment. Keynes borrowed the idea of multiplier from R.F. Kahn who explained the effect of an increase in investment on employment. Keynes explained the relationship of a small increase in investment to final increase in income. According to J.M. Keynes, employment depends upon effective demand, which further, depends upon consumption and investment ($Y = C + I$). Consumption function (propensity to consume) is stable in the short period and marginal propensity to consume is less than one. Therefore, all the increase in income does not go to increase consumption at the rate at which income increases. As a result, a gap is created between incomes (output) and consumption which must be filled up by making additional investment. Keynes believed that the initial increase in investment will increase the final income by many times. Thus, investment multiplier shows the relationship between an initial increase in investment and final increase in aggregate income. In other words, it is the ratio expressing quantitative relationship between the final increase in national income and the increase in investment which induces the rise in income. Arithmetically,

$$\Delta Y = K.\Delta I$$

Where, ΔY is the change in income; K stands for multiplier and I for investment. Therefore multiplier coefficient can be expressed as,

$$K = \frac{\Delta Y}{\Delta I}$$

That is, K is equal to the ratio of increase in income to the increase in investment, which helps to raise income manifold.

Thus, if investment in the economy increases by Rs. 1 crore and the national income rises by Rs. 5 crore, then the multiplier is 5. This is because when investment is made in the economy, it not only expands the income of one industry where initial investment is made but also in other industries whose products are demanded by men employed in investment industries. It should be noted that the value of multiplier depends on marginal propensity to consume. The multiplier is large or small according as the MPC is large or small. The value of multiplier ranges between

one to infinity. However, it can never be one because whole of the increase in income is not consumed and it can never be zero, which means the economy saves whole of its additional income. As Keynes assumed that MPC is less than unity, its value can never be equal to infinity. It has been observed in real life that actual value generally varies from 2 to 4. The general formula for the multiplier is:

$$K = \frac{1}{1 - \frac{\Delta C}{\Delta Y}}$$

where K stands for multiplier and for $1 - \frac{\Delta C}{\Delta Y}$ the marginal propensity to save. In other words, the multiplier is nothing but the reciprocal of the marginal propensity to save. Let us derive the coefficient of multiplier as shown under:

$$Y = C + I$$

Or $$\Delta Y = \Delta C + \Delta I$$

Or, $$\Delta I = \Delta Y - \Delta C \quad ...(i)$$

By definition, we know that $K = \frac{\Delta Y}{\Delta I}$ or $\Delta Y = K.\Delta I \quad ...(ii)$

From (*ii*), we get

$$\Delta I = \frac{\Delta Y}{K}$$

Substituting (*ii*) into (*i*) we get,

$$\frac{\Delta Y}{K} = \Delta Y - \Delta C$$

Now, dividing it by ΔY,

$$\frac{1}{K} = 1 - \frac{\Delta C}{\Delta Y}$$

or, $$K = \frac{1}{1 - \frac{\Delta C}{\Delta Y}}$$

or, $$K = \frac{1}{MPS}$$

It is thus clear that investment multiplier (K) varies directly with the marginal propensity to consume $\frac{\Delta C}{\Delta Y}$. Higher the MPC, higher is the magnitude of K and vice versa.

Working of the Multiplier

Multiplier is the mechanism which increases income in multiple counts as a result of initial investment. How this happens is clear from the following example. Let us assume that MPC is

½ and an initial investment of Rs. 10 crores in public works take place. Therefore, the value of multiplier (K) comes to

$$\left[\frac{1}{1-\frac{1}{2}}\right] = 2$$

It means an investment of Rs. 10 crores will increase the total income by Rs. 20 crores. When an initial investment of Rs. 10 crores is made in the economy, half of it will be spent on consumption (as MPC = ½). In the second round, income will increase by Rs. 5 crores and again half of it will be spent on consumption so that in the third round, income will be Rs. 2.5 crores, in the fourth round by Rs. 1.25 crores and so on, till it has increased to Rs. 20 crores, i.e., two times the original investment. Thus, we see that the multiplier is equal to the ratio of the increase in income to the increase in investment. In brief, $\frac{\text{Rs. 20 crore}}{\text{Rs. 10 crore}} = 2$. Therefore, the multiplier is 2. One should note that income expansion is spread over a period of time and not all at once. The working of multiplier is also shown in the adjacent diagram. In the Fig. 21.1, CC is the consumption curve drawn according to the MPC value, i.e., ½ at all income levels. EY1 is the equilibrium level of income. Income rises from C+I to C+I+I'. The new curve C+I+I' intersects the 45° line at E'. E'Y2 is the new level of income at Y2, which is greater than the old level of income by Y1Y2. Thus, assuming MPC of ½ and multiplier being 2, the original investment results in doubling the income level Y1Y2.

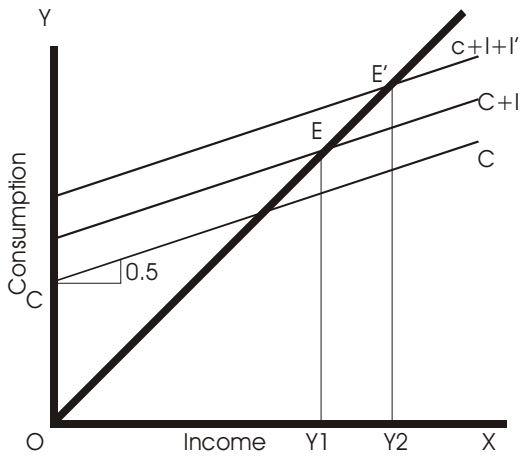


Fig. 21.1

Assumptions of Multiplier

The following are the assumptions of multiplier as described by Keynes:

1. There is no change in MPC.
2. There is no induced investment.

3. The new higher level of investment is maintained long enough for the completion of the adjustment process.
4. There is complete absence of government policy like taxation or expenditure.
5. There is no time lag between the receipt of income and its expenditure.
6. There is closed economy.

Importance of Multiplier

Multiplier is an important contribution to economic theory. It not only has theoretical importance but also is an important tool for formulation of various economic policies. It has given emphasis on investment as the major dynamic element in the economy. Investment helps in directly creating employment in the economy and also in generating income manifold. The introduction of the concept of multiplier has strengthened the importance of public investment in the economy. It indicates that a small increase in investment results in a large increase in investment and employment. Multiplier is also helpful in analyzing the matters related to business cycle. Thus the concept of multiplier is of vital importance in economic analysis.

Leakages in the Working of Multiplier

It is observed in reality that the whole of increment in the income is not spent on consumption. Therefore, marginal propensity to consume is never equal to one. This is due to several leakages from the income stream, which slows down income propagation. These leakages are explained as under:

1. *Saving*: Saving is an important leakage in the income stream. A part of increase in income is saved, thereby limiting the value of multiplier. It is thus clear that higher the saving lower will be the value of multiplier.
2. *Payment of old debts*: A part of income received by the people is used to pay off the old debts, thereby reducing money for consumption and hence the value of multiplier.
3. *Imports:* In case of excess imports over exports, part of increased income goes to increase income in the foreign countries. In the long period, the increased income in foreign countries will help in increasing demand for exports and thus have beneficial effects on the income of the country importing goods. However, it may or may not happen also. As such imports are important leakages.
4. *Inflation:* Price inflation results in degeneration of increased income instead of promotion of consumption, income, and employment.
5. *Hoarding:* Hoarding means holding idle cash balances. It is an important form of leakage. If people have high liquidity preference or high demand for money for holding as cash, expenditure on consumption decreases as a result of which multiplier value goes down.
6. *Purchase of stocks and securities:* People are also having tendency to buy old stocks and securities when their income is increased. As such consumption expenditure goes down. Such financial investment restricts the value of the multiplier.

It is therefore clear that these leakages in the flow of income in the economy severely restrict the value of multiplier. It is necessary to control such leakages to have greater multiplier effects.

Questions for Review

1. Explain the concept of multiplier with the help of a suitable example.
2. What are the important leakages in the multiplier?
3. What is the importance of multiplier in economic theory?
4. Write five assumptions of multiplier.
5. What is hoarding?

22 EXCESS AND DEFICIENT DEMAND

MEANING OF EXCESS DEMAND

Excess demand is a situation when aggregate demand exceeds aggregate supply at the full employment level of income. The difference between aggregate demand and supply at the level of full employment is called the 'inflationary gap'. Inflationary gap in the economy exists when planned expenditure is greater than the value of available output produced by making full use of resources. It is to note that an increase in demand beyond the equilibrium level of full employment does not increase the output and employment but only prices. Fig. 22.1 illustrates excess demand in the economy. It is seen that aggregate demand exceeds aggregate supply at full employment level OY by AB length. This gap is called inflationary gap, where aggregate demand is AY and aggregate supply is BY. Aggregate demand AY > aggregate supply BY. Therefore, AY – BY = AB (inflationary gap).

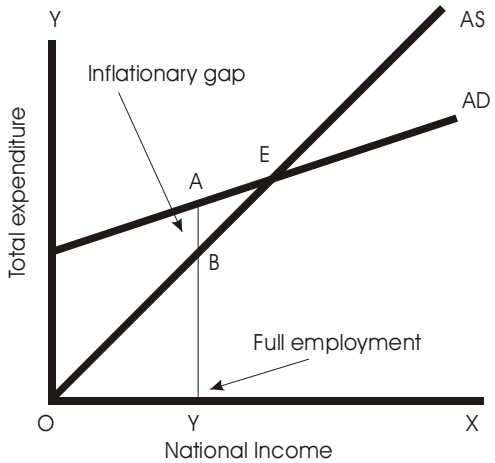


Fig. 22.1

Impact of Excess Demand in the Economy

If the economy has involuntary unemployment, an increase in demand will increase employment and output. Once the economy reaches full employment level and demand is further increased,

it will lead to rise in prices, i.e., an inflationary situation in the economy. Output and employment cannot be increased. An increase in productivity of labour could to some extent increase output but this is not generally considered in short period analysis of business cycle.

MEANING OF DEFICIENT DEMAND

Deficient demand is a situation when aggregate demand is less than aggregate supply of goods and services at the full employment level of income. It is also termed as the 'deflationary gap'. Deflationary gap in the economy causes large scale unemployment. It comes to exist in the economy when demand for goods and services do not match the level of good and services available. It falls short rather.

The adjacent Fig. 22.2 explains deficient demand in the economy. It is seen that aggregate demand falls short of aggregate supply at full employment level OY by CD length. This gap CD is called deflationary gap, where aggregate demand is DY and aggregate supply is CY. Aggregate demand DY < aggregate supply CY. Therefore, CY – DY = CD (deflationary gap).

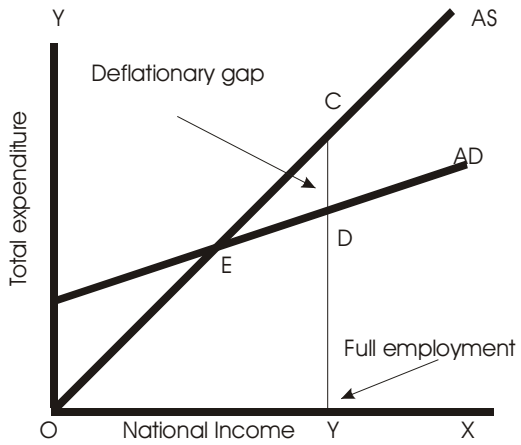


Fig. 22.2

Impact of Deficient Demand in the Economy

The impact of deficient demand may be analyzed in three respects—impact on output, employment and prices. However, one should note that its impact depends upon various factors, important among these are:

1. The structure of the economy—competitive or oligopolistic;
2. Elasticity of supply of factors of production;
3. Influence of trade unions.

In case the economy is competitive (large number of produces); a fall in the aggregate demand will result in a quick fall in prices of goods and services. But if the economy is oligopolistic (a few sellers dominating the market) in nature, then prices will not be much affected as employment and output are. Employment and output may get reduced in such an economic structure.

Elasticity of supply of the factors of production also affects output, employment and prices in the economy. If the economy is competitive, and supply of factors is perfectly elastic (slight changes in price leads to infinite change in factors supply), prices will not be affected. This is because a change in demand will be matched by a change in output and employment. But if the supply of factors is inelastic, prices generally fall depending upon the extent of inelasticity of factors.

Trade unions' influence is also noteworthy. Trade unions may not accept lower wages. In other words, if wages are prevented to fall with the fall in aggregate demand, the producers will be compelled to reduce the level of output and employment.

CAUSES OF EXCESS AND DEFICIENT DEMAND

The following are the important factors that cause excess or deficient demand in the economy:

(*i*) An increase in government expenditure (spending), which is not matched by a corresponding increase in taxation. Deficient demand may be caused if the government expenditure falls short of the revenue.

(*ii*) Increase in autonomous investment (due to past savings) without any increase in current savings. And no corresponding increase in taxation. Reduction in autonomous investment may lead to deficient demand.

(*iii*) Increasing surplus on the balance of payments. Increasing deficits on the balance of payments may result in deficient demand.

(*iv*) If available resources are used for the production of goods other than consumer goods, it will result in the fall in the supply of consumer goods and services. The available output will not be sufficient to match the aggregate demand, i.e., there will be excess demand. Conversely, deficient demand will occur due to cut in capital formation.

MEASURES TO CORRECT EXCESS AND DEFICIENT DEMAND

There are generally the following ways to come out of excess or deficient demand:

1. Fiscal Policy
2. Monetary Policy
3. Foreign Trade Policy

Let us explain these in brief.

Fiscal Policy

This is referred to as government expenditure and taxation policy. Fiscal policy influences aggregate demand significantly. In a situation of excess demand, it may help if there is cut in the government expenditure — to reduce budgetary deficit — and rise in incomes/revenues through ways that are not inflationary such as progressive taxation and borrowing.

Government may reduce expenditure on public works programmes such as road building, rural electrification etc; investment in public health and education, defence, internal administration and maintenance of state.

Borrowing will reduce purchasing power of people and as a result reduce effective demand. Similarly taxation withdraws purchasing power from circulation and reduces the effective demand.

Deficient demand can be corrected by increasing government expenditure and increased budgetary deficit met through the creation of more money and other inflationary ways. Taxes, particularly the corporate and income taxes may be cut down to increase effective demand by encouraging private investment. In times of depression, government expenditure on transfer payments such as unemployment subsidies, tax receipts etc go down automatically. Vigorous public works programmes may be undertaken to generate more demand.

Monetary Policy

Monetary policy refers to the policy through which the monetary authority expands or contracts the money supply in the economy. In other words, it relates to changes in the rate of interest and the availability of credit in the economy.

Higher rate of interest means costlier credit, which discourage effective demand. Investors get discouraged as borrowing becomes costlier. As a result excess demand gets reduced.

A lowering rate of interest, on the other hand, makes borrowing cheaper. Investors are encouraged to borrow more. If marginal efficiency of capital remains constant, the low rate of interest will increase the level of investment. Thus, deficient demand in the economy tends to be corrected.

Availability of Credit

Commercial banks create credit in the economy. To influence availability of credit, bank credit needs to be influenced. Important monetary tools that are available with the central bank of a country to control credit are explained as under:

1. **Cash reserve ratio:** Every commercial bank in a country is required to maintain a minimum percentage of its total deposits in the form of cash with the central bank. If the central bank increases this ratio, the cash reserves with the commercial banks get reduced. As a result they are forced to contract credit. Thus excess demand in the economy is also reduced.

   In case of deficient demand, where the objective is to expand credit, the cash reserve ratio is lowered by the central bank. This will increase cash availability with the commercial banks and they can lend more and create more credit.

2. **Bank rate:** Bank rate is the rate at which central bank lends money to commercial banks. If this rate is raised, cost of borrowing increases as interest rate rises. This results in credit contraction.

   In the situation of deficient demand, bank rate is lowered. When the bank rate is lowered, costs of borrowing get reduced as interest rate decreases. This results in credit expansion in the economy. This is because businessmen will now borrow more than before.

3. **Open market operations:** Open market operations refer to sale and purchase of government securities in the open market by the central bank. These operations have

an effect on the volume of cash reserves and hence the overall cost and availability of credit. At the times of excess demand, central bank sells these securities which are generally purchased by commercial banks or by their customers. Sale of government securities reduces the cash reserves with the banks, which reduces lending power of the banks and thereby forces to decline deposits.

Purchase of securities by the central bank increases the cash reserves with the commercial banks. In this case, money flows from governments' hands to commercial banks and their customers. This expands deposits and hence credit. Thus deficient demand gets corrected.

4. **Changing margin requirements:** Margin requirement is the percentage down payment on borrowing to finance purchase of stock by firms. For example, if central bank fixes a 30 percentage margin on the value of a security worth Rs. 20000, then commercial banks can lend Rs. 6000 only to the holder of the security. To correct excess demand, central bank raises the margin requirement. When margin requirements are raised, credit borrowed for speculative purposes is discouraged. This results in downswings of economic activity and thus, has a disinflationary impact. To correct deficient demand central bank lowers the margin requirement.

5. **Moral suasion:** Moral suasion is the method of persuasion, request, advice and suggestion to the commercial banks by the central bank of a country. Central bank arranges the meeting of the heads of the commercial banks and clarify them the need for implementation of a particular monetary policy and requests them to follow this policy. This is effective in both cases — excess demand and deficient demand.

Foreign Trade Policy

Foreign trade generally relates to exports and imports of a country. Excess and deficient demand can be influenced substantially by adopting a favourable foreign trade policy.

Additional exports increase incomes directly and enlarge spending. But additional incomes also create demand for imports. Thus, income generated in the economy is partly spent on goods produced by other economies and imported into the country. To this extent the excess demand will be reduced.

To correct excess demand i.e., to reduce inflationary gap, an economy can create and increase the size of its imports surplus (excess of imports over exports).

Import surplus can be created or increased by selling a country's holdings of foreign assets; raising loans from foreign governments or other international institutions such as IMF, World Bank etc., and through receipt aid from other countries in the form of grants.

An inflationary situation can be brought under control by preventing wage to increase and increasing output by fuller use of existing idle (inactive) capacities. Wage increase matched by an increase in productivity of labour is desirable as it also improves supply position. But when wage increase is without corresponding increase in productivity, then it leads to increase in costs and prices.

In an inflationary situation, an increase in production through increased investment is not advisable as it will only increase prices further. If large under-utilized capacity in the industrial

sector can be fully utilized, this will increase output without much additional investment. In other words, real output will increase and prices will not rise.

Export surplus helps to fight deficient demand. Export surplus raises aggregate demand. Exports can be raised by increasing net investment abroad. An economy can give up a part of its domestic production of goods which are in demand abroad for increasing export. Government can take various measures to boost exports such as removing unnecessary restrictions, providing tax concessions, subsidies, incentives for exports etc, use of latest and modern technology and developing modern infrastructure.

Questions for Review

1. What happens in an economy when credit availability is restructured and credit made costlier?

2. Explain fiscal measures by which excess demand in an economy can be reduced?

3. Explain the impact of excess demand on output, employment and prices?

4. Show 'inflationary gap' (excess demand) with the help of a diagram.

5. Show 'deflationary gap' (deficient demand) with the help of a diagram.

6. What are open market operations?

7. How is monetary policy used to correct excess demand in the economy?

8. What is bank rate? How does it affect the availability or credit?

9. Give meaning of fiscal policy and monetary policy.

10. Discuss in brief the impact of deficient demand on output and employment.

11. Name any four instruments of monetary policy.

12. How does excess demand affect price?

13. What is the impact of demand deficiency on output, employment and prices in (*a*) industrially developed countries, (*b*) less developed countries?

14. What happens when credit availability is restricted and credit made costlier?

15. Write short notes on :

(*i*) Export surplus

(*ii*) Budgetary deficits

(*iii*) Built–in income stabilizers

(*iv*) Fiscal policy.

16. How does the introduction of government sector affect economy?

23 MONEY—MEANING AND FUNCTIONS

Money is widely used instrument in modern days and its role in economic system is indispensable. In earlier days, barter system was prevalent, which was beset with too many difficulties. As such a new medium of exchange was felt necessary by every society. Therefore a uniform medium of exchange was invented which is what today's money is. However, money did not come into existence overnight. It took several centuries of its present form to develop. Money itself must be a scarce good. Many items have been used as money, from naturally scarce precious metals and conch shells through cigarettes to entirely artificial money such as banknotes.

Commodity money was the first form of money to emerge. Under a commodity money system, the object used as money has inherent value. It is usually adopted to simplify transactions in a barter economy; thus it functions first as a medium of exchange. It quickly begins functioning as a store of value, since holders of perishable goods can easily convert them into durable money. In modern economies, commodity money has also been used as a unit of account. Gold-backed currency notes are a common form of commodity money. A variety of commodities had been used to serve as money. The most common commodities used were cattle, leather and hides, bear, wine, corn, tobacco, salt, rice, and so on. In medieval Iraq, bread was used as an early form of currency. In his book, "Primitive Money", Paul Einzing, listed almost 172 objects and materials which had been used as money in the past.

Development of economic life has changed commodity money to metallic form of money. Metals such as gold, silver, copper, iron, lead and bronze were used to make money. Metals like gold and silver have been used as commodity money for thousands of years, being in the form of metal dust, nuggets, rings, bracelets and assorted pieces. Eventually the Lydians began coining gold and silver around 560 BC.

Gold and silver, in due course, came to be recognized as universal and natural money. Then came the era of abstract money which includes paper currency and bank deposits together with coins; it is the modern system of money came into existence during depression of 1930s. According to G.L.S. Shackle, *"Money began as commodity money and ended as a system of recording transactions and bringing every act of purchase and sale of borrowing and lending, of working and producing at any time, into some degree of relation with every other such act".*

The origin of the word "money" comes from the Latin word "moneta", which comes from

the temple of Hera the Moneta where the Roman money came from, in the early days of Rome. In the Olympian pantheon of classical Greek Mythology, Hêra (Greek) was the wife and sister of Zeus. In Greek language, "*Hera Mone tas*" means the lonely Hera. Zeus, once upon times, punished Hera and tied her with a golden chain between earth and sky. Hera, because she was alone between sky and earth tied with gold, was called moneres or mone which means lonely, and this is where the word money comes from. Hera, with the help of Hephaestus, broke the golden chain and released herself. It is said that all gold found on earth (which forms approximately a single cube 20 m a side, so you can imagine how Hera looked inside it) originates from the fragments of this golden chain, which fall from the sky and became human's mone(y).

May be due to this fable, gold was used in ancient Greece only in temples, graves and jewels and there is not any ancient Greek golden coin, until the days around 390 BC, when the Greek king Philip II of Macedon coined golden coins. The first golden coins in history were coined by Lydian king Croesus, around 560 BC. The first Greek coins were made initially of copper, then of iron and this is because copper and iron were powerful materials used to make weapons. Pheidon king of Argos, around 700 BC, changed the coins from iron to a rather useless and ornamental metal, silver, and, according to Aristotle, dedicated some of the remaining iron coins (which were actually iron sticks) to the temple of Hera. King Pheidon coined the silver coins at Aegina, at the temple of the goddess of wisdom and war Athena the Aphaia (the vanisher), and engraved the coins with a Chelone, which is used until nowdays as a symbol of capitalism. Chelone coins were the first medium of exchange that was not backed by a real value good. They were widely accepted and used as the international medium of exchange until the days of Peloponnesian War, when the Athenian Drachma replace them. According to other fables, inventors of money were Demodike (or Hermodike) of Kyme (the wife of Midas), Lykos (son of Pandion II and ancestor of the Lycians) and Erichtonius, the Lydians or the Naxians.

BARTER SYSTEM

Barter system involves the system of trading or exchange where goods and services are exchanged with other goods and services. This system was prevalent before the invention of money. A producer of rice can purchase cloth by exchanging rice from a producer who produces cloth. This system is as old as human civilizations. Barter system of trading originated when man required such things which he cannot produce himself. He started producing such goods and services which he is able to produce and fulfilling the satisfaction of those goods by buying from others which he cannot produce in best way. Thus in a barter, one person sells goods to other in exchange of other goods.

Difficulties of Barter

Barter system is beset with many difficulties which are explained as under:

1. *Lack of double coincidence of wants*: The most serious problem in barter system is the lack of double coincidence of wants. Thus, a seller of a commodity must not find some person who is willing to purchase and sell his goods to him. In other words, double coincidence of wants means that a person who owns goods and services, must find some person, who not only wants this commodity but who also possesses the good and service which the first person wants. If a person wants to sell his cow in exchange with rice, he must find a person who is willing to sell rice and buy cow.

2. *Absence of common unit of measure*: There was no common unit of measuring the values of different goods and services. As such the value of each commodity in the market does not remain as same and constant. It had to be determined in as many separate quantities as there were kinds and qualities of other goods and services meant for bartering in the market.
3. *Lack of store of value*: There is lack of any good method to store the generalized purchasing power or wealth. People can store wealth in terms of specific commodities. The stored commodities may lose its value due to damage with passage of time. Moreover, the method of storing goods is somewhat expensive.
4. *Problem of future payments*: A barter system suffered from the disadvantages of lack of any satisfactory unit in terms of which deferred payments for any future contracts can be made. Contracts concerning payments in future period are important feature of an exchange economy. Agreements relating to payments of wages, rent, interest, salaries etc extend over a period of time. These payments have to be made in future. Barter system is unable to undertake such transactions. The reason are controversy regarding the quality of goods and services accepted for payment; disapproval in regard to exchange of specified commodity and risk involved in the contract due to fall or rise of value of commodity accepted for payment.

MEANING OF MONEY

Money is any marketable good or token used by a society as a store of value, a medium of exchange, or a unit of account. Money objects can meet some or all of these needs. Since the needs arise naturally, societies organically create a money object when none exists. In other cases, a central authority creates a money object; this is more frequently the case in modern societies with paper money.

Money plays an important role in the determination of income and employment. Money has been defined in different ways by different economists. F.A. Walker defines it in terms of its functions. Cole, Keynes, Seligman and Robertson defined in terms of its 'general acceptability'. According to Robertson, *"anything which is widely accepted in payment for goods or in discharge of other kinds of business obligation is called money."* Prof. Crowther has given a very comprehensive definition of money. He defined money as, *"anything that is generally acceptable as a means of exchange and at the same time, acts as a measure and store of value."*

FUNCTIONS OF MONEY

The important functions of money can be discussed under the following heads:

1. Primary Functions

(*i*) **Medium of exchange:** Money serves as a medium of exchange. It facilitates the buying and selling of goods.

(*ii*) **Measure of Value:** Money acts as a common and uniform measure of value. The values of various commodities are measured in terms of money. Now a days, money made transactions simple and easy. Thus, money serves as a unit of account. For instance, in India the unit of account is Rupee.

2. Secondary Functions

(*i*) **Store of value:** Money also serves as a store of value. It means people can keep wealth in the form of money. In other words, storing money means holding of purchasing power. Money is a very liquid (quick conversion of assets into cash) asset, and therefore it can purchase goods and services at any time.

(*ii*) **Standard of deferred/delayed payments:** Standard of deferred payment means that future payments of any transaction can be made in terms of money. It means payment can be spread over a period of time. A person who borrows a certain sum of money in the present may make payment in the future, and the amount of money to be paid is definite.

(*iii*) **Transfer of value:** Money helps to transfer value from one person to another. For example, when we purchase a good from a seller, we actually transfer value to the seller by making payment in terms of money equal to the price of the good.

3. Contingent Functions

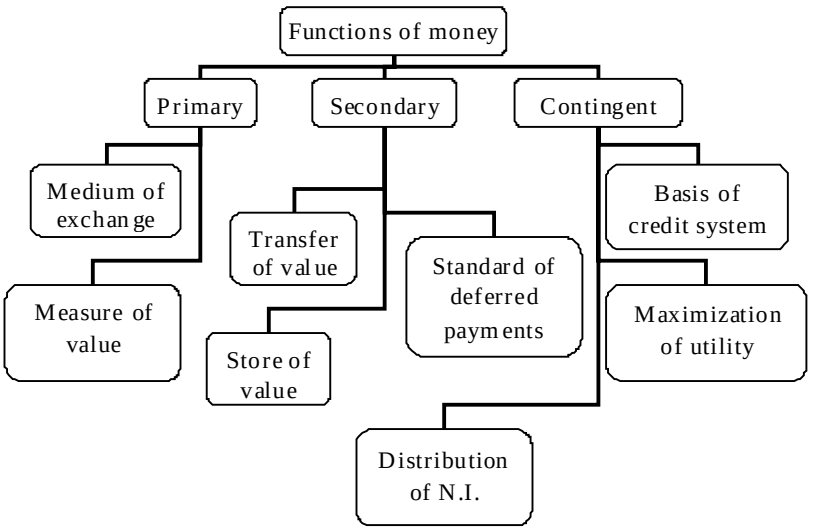
This refers to the use of money in assisting various economic entities, such as consumers, producers etc in taking important decisions.

(*i*) **Distribution of income:** Money helps in the distribution of national income. In other words, factors of production contribute to production process by rendering their services and for such act they get reward in terms of money and not in terms of goods and services.

(*ii*) **Maximization of utility:** A rational consumer or a producer always tries to maximize utility (satisfaction). For instance, a consumer equalizes his total utility by equalizing the ratios of marginal utilities of different goods with the price ratio of different goods in terms of money.

(*iii*) **Basis of credit system:** Credit plays important role in the modern economy. Commercial and business activities are highly dependent upon the credit system. All credit instruments like cheques, bills of exchange etc., cannot be used in absence of money.

The chart below summarizes various functions of money:



UNIT-9

SUPPLY OF MONEY

Money supply refers to total amount of money in circulation in an economy. It is a stock at any point of time held by the public. Money supply is determined jointly by monetary authority, banks and the public. According to Reserve Bank of India, stock of money includes – (a) currency with public and (b) deposit money. Currency includes all coins and paper money issued by the government and the banks. RBI has included the four alternative measures of money supply. These are – M_1, M_2, M_3, and M_4. M_1 is the sum of currency held by public, net demand deposits of banks and other deposits of the RBI. M_2 is M_1 + savings deposits with post office; M_3 is M_1 + net time deposits of banks. M_4 is M_3 + total deposits with post office savings. Net demand deposits include deposits held by public and other deposits of RBI include deposits other than those held by the government, banks, and others.

Ordinary Money and High powered money: There are two types of money—ordinary money (M) and high powered money (H). Ordinary money is the sum of currency and demand deposits. High powered money (H) is the money produced by the RBI and government of India (small coins including one rupee notes) held by the public and banks. RBI calls it 'reserve money'. Thus H is the sum of currency held by public, cash reserves of the banks and other deposits of RBI. The difference between ordinary money and high powered money is due to demand deposits in ordinary money and cash reserves in high powered money. Banks produce demand deposits and these are treated as money at par with currency. To create demand deposits, banks have to maintain a cash reserve, which is the part of high powered money, produced only by monetary authority and not by banks. We know that demand deposits are multiple of cash reserves, which are component of H; it gives H the quality of high poweredness, that is, the power of serving as a base for multiple creations of demand deposits. High powered money, for this reason, is also called as base money. Thus, H is the dominant factor in determining money supply.

It is thus clear that the main components of the supply of money are coins, paper currency and demand deposits or credit money created by commercial banks.

COMPONENTS OF MONEY

Money is classified on the basis of its form, legal recognition or its nature.

Metallic Money: It is made out of different metals such as gold, silver, copper, lead, nickel etc. Metallic money may be classified into three categories. These are—standard money, token money and subsidiary money. Standard money is also known as full-bodied money. Standard coins are made of gold or silver, which have well defined weight and fineness. Their face value is always equal to their intrinsic (metallic) value. Token money is used for making smaller payments. It is made of inferior metals such as copper, nickel etc. It is the money whose face value is higher than its intrinsic value. Coins are token money used for making smaller payments. Whereas token money is a limited legal tender, standard money is unlimited legal tender. The subsidiary money or coins are used to make smaller payments like token money. These are low value coins made of generally aluminum. These are also limited legal tender.

Paper Money: Currency notes are the paper money. In India, paper money consists of all paper currency of various denominations issued by the central bank (Reserve Bank of India) of the country. The first bank to issue paper currency in India was Bank of Bengal in 1806.

Representative paper currency is fully backed by gold and silver reserves. Convertible paper money is a type of paper currency which can be converted to standard coins. Inconvertible paper money is not convertible to standard coins or other valuable metals. Today almost all countries have the system of inconvertible paper money. The promise made by the governor in Indian rupee simply means that the currency cannot be converted into any metal but notes and coins of equal value. To issue this type of currency, the issuing authority does not keep metallic reserves for backing the amount of currency issued. Fiat money is a variant of inconvertible money. It is issued at the time of crisis or emergencies. It is fiat because government has declared it as legal tender. It is a relatively modern invention. A central authority creates a new money object that has minimal intrinsic value. In this case, the public's faith in the money exists only because the central authority mandates the money's acceptance. In cases where the public loses faith in the fiat money, there is little a central authority can do to prevent the adoption of other money objects by society. The money itself is given value by government fiat in Latin means "let it be done" or decree, enforcing legal tender laws, previously known as "forced tender", whereby debtors are legally relieved of the debt if they (offer to) pay it off in the government's money. Intrinsic value in general, is the argument that the value of a product is intrinsic within the product rather than dependent on the buyers perception. An example of fiat money is the new, international currency, the Euro. Its introduction changed the face of money, superseding many of the world's oldest currencies.

Near Money: On the basis of liquidity money is classified into—actual money and near money. Actual money is perfectly liquid (quickly and without loss of value converted into cash) but near money is not perfectly liquid asset. Examples of near money are treasury bills, bonds, debentures etc.

Legal Tender Money: It is money accepted as medium of exchange. It is legally sanctioned money. No person can refuse it to as a means of transactions. Legal tender money can be grouped into two categories—limited legal tender and unlimited legal tender. Limited legal tender is that money which people cannot be forced to accept beyond a certain limit. For instance, in India, coins of face value one, two, five, ten, twenty and twenty five paise are legal tender up to a maximum of Rs. 25. It means a person cannot refuse to accept coins totaling Rs. 25 in India, but beyond this limit, one can refuse to accept. Unlimited legal tender is money which one has to accept up to any limit. Thus, one-rupee coin, 50-paise coin, and currency notes of all denominations are unlimited legal tender. Everybody has to accept this money.

Optional Money: It is the money which has no legal sanction behind it but generally accepted by people. No person can be forced to accept such money. It is an option to accept or not. For example, credit instruments like cheques, hundies, and bills of exchange are optional money.

Money Proper: Money proper or actual money is the money which circulates in a country as a medium of exchange. It is also the basis of deferred payments. Goods and services are purchased and sold in the market with the help of this money. Benham calls it units of currency. Keynes categorized actual money into—commodity money and representative money. Commodity money is made of certain commodity or metal and treated as money. It is also known as full-bodied money or standard money. It not only the medium of exchange but also acts as store of

value. Representative money circulates in the form of cheap metallic coins or convertible paper notes. In this case, purchasing power cannot be stored as it has little intrinsic value. A person can convert representative money into commodity money whenever is desired.

Money of Accounts: It is that form of money in which accounts are maintained and value is measured. According to Keynes, money of account is "that in which debts and prices and general purchasing power are expressed". For example, rupee in India and dollar in America is being used as money of accounts. It is static in nature and does not change with the passage of time.

A NOTE ON GRESHAM'S LAW

Gresham's law is stated as: "Bad money drives good money out of circulation". Money is a marketable good or token that acts as a store of value, a medium of exchange and a unit of account. Gresham's law applies specifically when there are two forms of commodity money in circulation which are forced, by the application of legal tender laws, to be respected as having the same face value in the marketplace. It is named after Sir Thomas Gresham, an English financier.

The terms "good" and "bad" money are used in a technical sense, and with regard to exchange values imposed by legal tender legislation. Good money is money that has little difference between its exchange value and its commodity value. In the original discussions of Gresham's law, money was conceived of entirely as metallic coins, so the commodity value is the market value of the bullion of which the coins are made. An example is the US dollar, which, prior to the 1900s was equal to 1/20.67 ounce (1.5048 g) of gold, and carried an exchange value roughly equal to its gold bullion market value.

Bad money is money that has a substantial difference between its commodity value and its market value, where market value is lower than exchange value. In Gresham's day, bad money included any coin that had been "debased," Debasement was often done by members of the public, cutting or scraping off some of the metal. Coinage could also be debased by the issuing body, whereby less than the officially mandated amount of precious metal is contained in an issue of coinage, usually by alloying it with base metal. Other examples of "bad" money include counterfeit coins made from base metal. In all of these examples, the market value was the supposed value of the coin in the market. In the case of clipped, scraped or counterfeit coins, the market value has been reduced by fraud, while the exchange value remains at the higher value. On the other hand, with coinage debased by a government issuer the market value of the coinage was often reduced quite openly, but the exchange value of the debased coins was held at the higher level by legal tender laws.

All modern money is "bad money" in this sense, since fiat money has entirely replaced the commodity money to which Gresham's law applies. The universality of fiat money could indeed be taken as evidence for the truth of Gresham's law.

Gresham's law says that any circulating currency consisting of both "good" and "bad" money, where both forms are required to be accepted at equal value under legal tender law, quickly becomes dominated by the "bad" money. This is because people spending money will hand over the "bad" coins rather than the "good" ones, keeping the "good" ones for themselves.

If "good" coins have a face value below that of their metallic content, individuals may melt them down and sell the metal for its higher bullion value. In addition to being melted down for its bullion value, money that is considered to be "good" tends to leave an economy through international trade. International traders are not bound by legal tender laws the way citizens of the country are, so they will offer higher value for good coins than bad ones, and thus higher

value than can be obtained within the country. The good coins may leave their country of origin to become part of international trade. Thus, the good money is driven out of the country of issue, escaping that country's legal tender laws and leaving the "bad" money behind. This occurred in Britain during the period of the Gold Exchange Standard.

As for Gresham himself, he observed "that good and bad coin cannot circulate together" in a letter written to Queen Elizabeth on the occasion of her accession in 1558. The statement was part of Gresham's explanation for the "unexampted state of badness" England's coinage had been left in following the "Great Debasements" of Henry VIII and Edward VI, which reduced the metallic value of English silver coins to a small fraction of what that value had been at the time of Henry VII. It was owing to these debasements; Gresham observed to the Queen, that "all your fine gold was conveyed ought of this your realm."

Gresham made his observations of good and bad money while in the service of Queen Elizabeth, with respect only to the observed poor quality of the British coinage. The previous monarchs, Henry VIII and Edward VI, forced the people to accept debased coinage by means of their legal tender laws. Gresham also made his comparison of good and bad money where the precious metal in the money was the same. He did not compare silver to gold, or gold to paper.

Questions for Review

1. What is money? What are the different forms of modern money?

2. What are the functions of money?

3. Distinguish between:

(*i*) Currency and deposit money.

(*ii*) Limited and unlimited legal tender.

(*iii*) Convertible and inconvertible money.

4. Explain Gresham's law.

5. What is barter?

6. Explain double coincidence of wants.

7. What is metallic money?

8. Point out four characteristics of good money.

9. What are the drawbacks of barter?

10. What is money supply?

11. What are the various money stock measures?

24

BANKING

The word 'banking' is said to have derived from the Greek word 'banque', meaning bench. The German word 'banc' means a joint stock firm. In modern days, commercial banking occupies an important place in every economy. It is an important constituent of a country's financial system. Origins of modern banking dates back to ancient times. The New Testament mentions about the activities of money changers in Jerusalem. In ancient Greece, famous temples of Ephesus, Delphi and Olympia were used as depositories, where people who have surplus funds deposited their money. These temples were the sits of money-lending transactions. In India, the ancient Hindu scriptures refer to money lending transactions in the Vedic period. Banking became a full fledged activity during the periods of Ramayana and Mahabharata. Vaish community during Smriti period (period after Vedic and Epic age) carried on business of banking extensively. The bankers of Smriti period performed most of those functions which are performed by modern banks such as accepting of deposits, granting secured and unsecured loans, acting as treasurer and banker to the state and issuing and managing the currency of the country. It was only in the nineteenth century that the modern commercial banking system developed in the leading countries of the world.

COMMERCIAL BANKS

A bank is a financial institution which lend and accepts money. It is an institution which deals mainly in money. Thus, a bank is a financial institution that accepts deposits of money from the public, which can be withdrawn by cheques. Banks utilize money collected for lending to the households, the firms and the government. People deposit their surplus money in banks for two reasons—safety of money and earning some interest amount. According to Banking Regulation Act, 1949, *"accepting for the purpose of lending or investing of deposits of money from the public, repayable on demand or otherwise, and withdrawable by cheques, draft, order or otherwise"*, comes under the purview of a bank.

On analysis of the above definitions, it is clear that a bank is a financial institution that deals in money. It accepts people's surplus money and advance loans to the borrowers.

FUNCTIONS OF COMMERCIAL BANKS

Commercial banks, today, perform a variety of functions and provide a number of services to their customers. The important functions of commercial banks can be discussed under the following heads:

1. **Accepting of Deposits:** The most important function of commercial banks is to accept deposits from the public. Banks withdraw surplus funds from people or depositors. Banks accept deposits mainly by opening accounts in the name of their customers. They accept deposits in two forms—demand deposits and term or fixed deposits. Demand deposits can be withdrawn any time but term deposits are withdrawable only after the expiry of time period for which deposits are made. The three important forms of accounts, in which people like to deposit their money are—current account, savings bank account and fixed deposit account. Current accounts are particularly meant for business people who wish to deposit or withdraw their money many times in a single day. These deposits are therefore payable on demand. Banks do not pay any interest on these accounts but charge a maintenance or service fee known as incidental charge from the customers for providing various services. Savings bank accounts are also payable on demand. Banks impose a limit on the amount and number of withdrawals during a particular period of time. These accounts are opened by general public. A reasonable interest is paid on such deposits. Under fixed deposit accounts, money is kept for certain fixed period of time, say, a year, five years or six months. These deposits carry a higher rate of interest but are not withdrawable on demand. In other words, amount of such deposits can be withdrawn only at the time of maturity. One should note that such deposits can be withdrawn by presenting fixed deposit receipt (FDR) issued at the time of commencement of the account. Cheques cannot be used in place of FDR. These deposits are also known as time deposits. A variant of fixed deposit accounts is recurring deposit account under which a person has to make payment for a regular period at equal time intervals. For example, a person can choose five year term as maturity period and make a certain sum of money every month for five years. Such deposits also carry a high rate of interest.
2. **Advancing of Loans:** Another important function of commercial banks is to extend loans and advances to their customers. Banks charge interest from the borrowers, which is relatively higher than the interest they pay on deposits to their customers. Banks make profits out of such transactions. Banks provide advances in various ways. They provide term loans for a fixed period by crediting the entire amount sanctioned as loan to borrower's current account. The borrower pays interest on the entire amount borrowed. Cash credit is another way to provide loans particularly to businessmen. Under this system, the sanctioned amount is not given at a time but an account is opened and the borrower is allowed to withdraw amount as and when he requires. The bank charges interest only on the amount which is actually withdrawn from the account. Through overdraft facility also, banks provide loans to their customers. A customer, getting this facility, is allowed to withdraw amount in excess of the balance standing to his credit to the extent of overdraft limit permitted. Overdraft can be made only in respect of current accounts. The banks charge interest only on the amount overdrawn. Another important form of lending is through discounting of bills of exchange. A bill is drawn by the creditor on the debtor mentioning the amount of debt and also the date when it becomes payable. Such bills are generally issued for

a period of 90 days. This means that creditor cannot get money from debtor before 90 days. However, if the creditor needs money before this period, he can sell (called discounted by bank) to a bank. The bank makes payment specified on the bill after deducting commission or discount. The matured bill amount is obtained by the bank from the debtor.

3. **Transfer of Funds:** Banks help in the remittance or transfer of funds from one place to another through the use of various credit instruments such as cheques, drafts, mail transfers, online communications, etc.
4. **Agency Functions:** Banks provide various agency functions to their customers. The banks charge a very nominal fee for these services. The important agency services are the following:
   (*i*) Collection of cheques, drafts, bills of exchange, hundies etc;
   (*ii*) Payments and collection of insurance premia, pensions, scholarships, dividends, interest etc. on behalf of customers;
   (*iii*) Sale and purchase of securities. They provide investment services to the companies by acting as underwriters and bankers for new issues of securities to the public;
   (*iv*) Obtaining and selling of foreign currency on behalf of customers;
   (*v*) Acting as trusties and executors. For example, they keep safe the wills of their customers and execute the same after their death.
5. **Miscellaneous Services:** Banks provide services like locker facilities for safe custody of jewellery and other valuables, issue of travelers cheques, gift cheques, credit cards, ATM (Automated Teller Machine), internet banking services, tax assistance and investment advice.
6. **Credit Creation:** A very important function of modern banks is to create credit in the economy. Banks have the capacity of credit creation. They are able to create credit by accepting deposits from and providing loans and advances to their customers. In simple words, banks are able to multiply the initial deposits to a great extent which is called credit creation.

Credit creation is the process of multiplying initial deposits of banks into a huge amount. Banks create credit by advancing loans to its customers out of what they have received in the form of deposits from the public. They also grant loans, discount bills, provide overdraft facilities to create credit. All commercial banks are required to keep a certain percentage of their cash reserves with the central bank. To explain how banks create credit in the economy, let us assume that the cash reserve ratio (CRR) is 20% of total deposits a bank has to maintain with the central bank. Further, let us suppose that the SBI receives Rs. 1000 as deposits. This is called primary deposit of the bank. SBI keeps Rs. 200 (20% of Rs. 1000) as cash reserves and advances the balance amount of Rs. 800 as loans to a businessman, say Mr. X. The person deposits this amount (in cheque) in the Indian bank. It means the Indian bank receives Rs. 800 as primary deposits and keeps Rs. 160 (20% of Rs. 800) as cash reserves and grants the balance amount of Rs. 640 as loans. In the same way, the loan of Rs. 640 is deposited in Allahabad bank, which keeps Rs. 128 (as CRR) and the excess cash of Rs. 512 is lent.

Thus, an initial deposit of Rs. 1000 with the SBI has created deposits of Rs. 2952 (= 1000 + 800 + 640 + 512). The process of credit creation goes on and come to an end when deposits become too small to generate any new loan. The entire banking system will create credit of Rs. 5000 with the initial deposit of Rs. 1000. This has been worked out using the deposit multiplier formula as under:

$$d = \frac{1}{r} \times \Delta D$$

where r = CRR (20%) and AD = initial change in the volume of deposits (Rs. 1000). $1/r$ is the deposit or credit multiplier. Thus,

$$d = \frac{1}{20\%} \times 1000$$

$$d = \frac{100}{20} \times 1000$$

$$d = \text{Rs. } 5000$$

This means all other banks will make deposits of Rs. 2048 (5000 – 2952).

But there are limitations to credit creation by banks. These are the following:

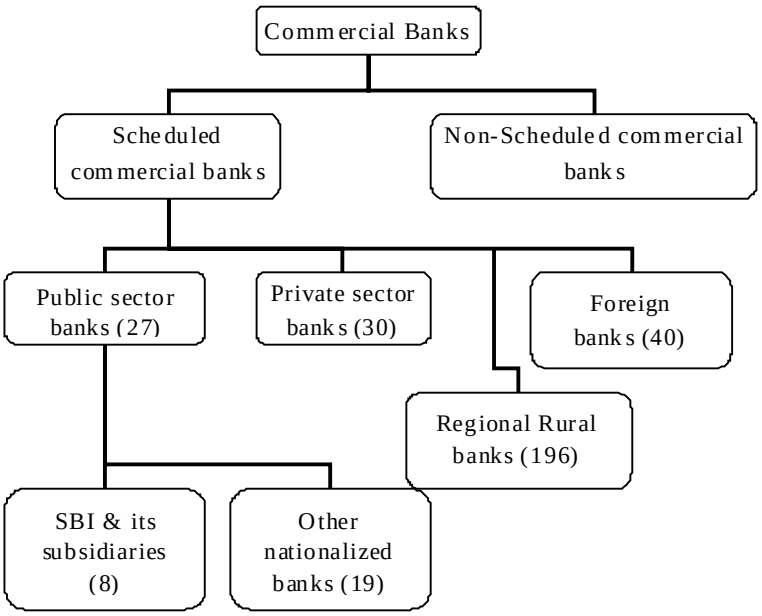
1. The total amount of cash reserves in the banking system. Larger the cash reserves more will be the credit creation.
2. Cash reserve ratio fixed by the central bank. More is the ratio, less is the power to create credit and vice versa.
3. Banking habits of the people of the country. It means banking transactions through cheques, drafts, bills etc. Good banking habit results in keeping smaller amount of cash with the banks and therefore, more can be lent. This will create large credit.

CLASSIFICATION OF COMMERCIAL BANKS

Commercial banks in India are classified mainly into two categories—Scheduled commercial banks and Non-scheduled commercial banks. Scheduled commercial banks are those which are entered in the Second Schedule of RBI Act, 1934. Such banks have a paid-up capital and reserves of an aggregate value of not less than Rs.5 lakhs and which carry out their operations in the interest of depositors. Non-scheduled commercial banks are those which are not entered in the list of the Second Schedule of RBI Act, 1934. Schedule commercial banks consist of – twenty seven public sector banks, thirty private sector banks of which twenty two are old private banks and eight are new, forty foreign banks and one hundred ninety six regional rural banks. Public sector commercial banks include the State Bank of India and its seven subsidiaries and other nineteen nationalized banks.

CENTRAL BANK

A central bank is the apex institution in the banking and financial structure of the country. It plays a leading role in organizing, regulating, supervising and developing the banking and financial system of a country. Every country has a central bank known by different names. For instance, in India, it is known as Reserve Bank of India, while in England, it is the Bank of England and Federal Reserve System in USA. Reserve Bank of India was established on April 1, 1935.



A central bank is, however, different from commercial banks in many and important ways. First, it is not a profit making institution as commercial banks are. It acts in the public interest so as to control and regulate the banking and financial system of the country. Second, a central bank does not perform ordinary banking functions such as accepting of deposits from general public and lending advances to them. A central bank is owned and managed by the government of a country, whereas, commercial banks may be owned by government or private individuals as shareholders. Every country has one central bank but there are a number of commercial banks in the country.

FUNCTIONS OF A CENTRAL BANK

A central bank performs a number of important functions, which are discussed as under:

1. **Bank of Note Issue:** A central bank has been empowered to issue currency notes in the country. Currency notes issued by the central bank are the legal tender. The issue department of a central bank issues currency and coins. The central bank is required to maintain a certain amount of gold and foreign securities against the issue of notes.
2. **Banker and Adviser to the Government:** A Central bank acts as banker, agent and adviser to the government. As banker to the government, it receives the deposits of cash, cheques and drafts, etc., from the governments. It provides short term loans to the government and sells and buys foreign currencies on behalf of the government. It also manages public debt, issues new loans, receives subscriptions to these loans, pays interest on them and finally repays these loans. The central bank acts as the financial adviser to the government. It advises to the government on all financial and monetary matters and helps in formulating various economic policies.
3. **Banker to Banks:** As a bankers' bank, the central bank performs several functions. It acts as custodian of cash reserves of commercial and other banks. It also maintains

deposits of cash reserves as required by the commercial banks. It also discounts bills of commercial banks. It provides guidance to all banks and regulates their activities.

4. **Custodian of Foreign Reserves:** A central bank is the custodian of foreign exchange reserves of a country. All the foreign exchange transactions of a country are done through the central bank. It controls both the receipts and payments of foreign exchange. It helps in maintaining stability of the exchange rate by buying and selling foreign currencies in the market.
5. **Lender of the last Resort:** The central bank acts as the lender of the last resort. It provides ultimate need of finance to all banks by discounting approved securities and collateral loans and advances.
6. **Clearing House for Transfer and Settlement:** A central bank acts as a clearing house for transfer and settlement of mutual claims of the commercial banks. Since commercial banks keep their cash reserves with the central bank, it is easier and convenient to clear and settle claims between them by making transfer entries in their accounts maintained with the central bank.
7. **Controller of Credit:** The most important function of the central bank is to control credit creation by the commercial banks. Supply of credit must be regulated so as to ensure the smooth functioning of the economy. Central bank adopts quantitative and qualitative methods to control credit in the economy. Quantitative methods aim at controlling the cost and availability of credit, while qualitative methods influence the use and direction of credit.
8. **Promotional and Developmental Functions:** Central bank develops and promotes a strong banking system. It assists in the development of financial institutions like developmental banks to provide investible funds for the development of agriculture, industry and other sectors of the economy. It helps in the development of money and capital market in the country.

Questions for Review

1. Define a commercial bank.
2. Define a central bank.
3. What are the main functions of a commercial bank?
4. What are the main functions of the central bank of a country?
5. Central bank is the 'Lender of the last resort.'—explain.
6. Explain Gresham's law.
7. Explain how banks create credit.
8. What are the limitations to credit creation?
9. Distinguish between quantitative and qualitative credit control methods adopted by a central bank.
10. Distinguish between demand deposits and time deposits.
11. What is overdraft facility?
12. What is bank rate?
13. Give the meaning of open market operations.
14. What is cash reserve ratio?
15. What is moral suasion?

25 GOVERNMENT BUDGET— MEANING AND COMPONENTS

MEANING OF BUDGET

A budget may be defined as a financial plan or statement of the government which shows in details the estimated receipts and proposed expenditures and disbursements (payments) under various heads for the coming year. In other words, a budget is a description of the fiscal policies of the government–taxation and expenditure policies—and the financial plans in accordance to these. A budget indicates the revenue and expenditure of the last completed financial year, the probable revenue and expenditure estimates for the current year and the estimates of the anticipated revenue and proposed expenditure for the next financial year. For instance, the budget estimate for the year 2005–06 will contain:

1. Actual figures for the year 2004–05.
2. Budget and revised figures for the year 2005–06.
3. Budget estimates for the year 2006–07.

In short, budget reveals the basic character of fiscal policy of the government. It is the tool through which the government takes control of the economy. The budget is prepared and presented by the Finance Minister before the parliament at the beginning of each financial year. Under Article 112 of the constitution of India, a statement of estimated receipts and expenditures of the Central government has to be prepared for every financial year. By convention, the budget is presented on the last working day of February. In case of state budgets, the budget is presented before State legislatures. In both the cases, a general discussion is held. The general discussion relates to review and criticism of the government with regard to budgetary proposals. Then the budget is submitted to vote and voting on the demands for grants is taken. When the demands have been voted, a Finance bill is passed to approve the tax proposals. Finally, an Appropriation Bill is passed to authorize expenditure. Thus, a budget is said to be passed when Appropriation Bill and Finance Bill are passed. Appropriation Bill includes all grants for the year whether votable or non-votable. It is moved when demands for grants have been moved by the House. It is also called Money Bill. Finance Bill embodies the proposals of the government to levy new taxes, modify the existing taxes or continue the same.

COMPONENTS OF BUDGET

The budget is presented in two parts – **revenue budget** and **capital budget.** Revenue budget shows receipts of the government and the expenditures met from these revenues. Thus, it consists of revenue receipts and revenue expenditure. Capital budget shows capital requirements of the government and various ways of financing these expenditures. It comprises capital receipts and capital expenditures of the government.

The following table shows the budget structure of the government of India.

(Rs. in crore)

	2003–2004 Actuals	*2004–2005 Budget Estimates*	*2004–2005 Revised Estimates*	*2005–2006 Budget Estimates*
1. Revenue Receipts	**263878**	**309322**	**300904**	**351200**
2. Tax Revenue	186982	233906	225804	273466
3. Non-Tax Revenue	76896	75416	75100	77734
4. Capital Receipts (5 + 6 + 7)	**207490**	**168507**	**204887**	**163144**
5. Recoveries of Loans	67265	27100	61565	12000
6. Other Receipts	16953	4000	4091	–
7. Borrowing and other liabilities	123272	137407	139231	151144
8. Total Receipts (1 + 4)	**471368**	**477829**	**505791**	**514344**
9. Non-Plan Expenditure	**349088**	**332239**	**368404**	**370847**
10. On Revenue Account of which	283502	293650	296396	330530
11. Interest Payments	124088	129500	125905	133945
12. On Capital Account	65586	38589	72008	40317
13. Plan Expenditure	**122280**	**145590**	**137387**	**143497**
14. On Revenue Account	78638	91843	89673	115982
15. On Capital Account	43642	53747	47714	27515
16. Total Expenditure (9 + 13)	**471368**	**477829**	**505791**	**514344**
17. Reveune Expenditure (10 + 14)	362140	385493	386069	446512
18. Capital Expenditure (12 + 15)	109228	92336	119722	67832
19. Revenue Deficit (17 – 1)	**98262**	**76171**	**85165**	**95312**
20. Fiscal Deficit {16 – (1 + 5 + 6)}	**123272**	**137407**	**139231**	**151144**
21. Primary Deficit (20 – 11)	**–816**	**7907**	**13326**	**17199**

Revenue Budget

As stated above revenue budget consists of revenue receipts and revenue expenditure. These are discussed as under:

Revenue receipts of the government are all those receipts which are non-redeemable. These comprise tax revenue and non-tax revenue. Tax revenues consist of proceeds of taxes and duties levied by the government. Non-tax revenues consist of interest and dividends on investments made by the government and fee and other receipts for service rendered by it.

Tax revenue is an important source of revenue receipts of the government. There are varieties of taxes imposed by the government in India. The three important sources of tax revenue are—income tax, custom duties and excise duties. Apart of these there are capital taxes such as estate duty, wealth tax and gift tax.

Income Tax: Income tax is imposed by the government on the income of individuals and firms. In India, income tax is divided into two categories—agricultural tax income and non-agricultural tax income. The taxation of agricultural taxation is a matter for the state legislation and that of non-agricultural taxation is a central subject. Non-agricultural income taxes are of two types—personal income tax and corporate tax. Personal tax is levied on the income of the individuals. The tax is imposed on the aggregate incomes from all sources. Total taxable income is calculated on the basis of salaries, income from house property, profits and gains of business or profession, capital gains and income from other sources. The income tax is based on principle of ability to pay. Everybody is not required to pay income taxes.

Corporate tax is levied on the income/profits of the all companies, irrespective of their scale of operation. It is payable by way of advance payment and not like income tax which is deducted at source.

Government also levies various taxes on property and capital transactions such as wealth tax, gift tax and estate duty. *Wealth tax* is imposed on accumulated wealth or property of individuals, Hindu undivided family and closely held companies. The main idea for imposing this tax is to reduce inequalities in income and wealth. According to Gift Tax Act, 1958, a *tax on gifts* has been imposed by the government. The tax is imposed either on donor or recipient when a gift is made exceeding a certain amount. *Estate duty* is levied on the capital value of all property passing on the death of a person to his heirs. These are all direct taxes or taxes on income and property. Let us now explain indirect taxes or taxes on commodities. Custom duties and excise duties are the two important types of commodity taxes.

Custom duties are taxes imposed on commodities imported into or exported from India. In India, custom duties are mainly composed of import duties. Import duties are mostly ad valorem in nature. Ad valorem means duty imposed as a percentage of the price of the product.

Excise duties are imposed by the central government on the goods produced (mostly industrial goods) within the country. Excise duty covers a wide range of commodities. The excise duties may be fixed with reference to the value, weight, volume, or unit.

The other sources of government's revenue are non-tax revenues such as interest receipts, dividends and profits and other non-tax revenue.

Interest receipts include interest on loans by the central government to state governments, union territories, interest payable by Railways and telecommunications and interest on loans from public sector enterprises, cooperatives etc.

Dividends and profits consist of profits of Reserve Bank of India, nationalized banks and Life Insurance Corporation of India (LIC). It also includes dividends of The General Insurance Corporation (GIC), The Industrial Development Bank of India (IDBI) and other non-banking financial institutions.

Other non-tax revenue refers to revenue from fiscal services (profits from circulation of coins), social services (receipts from commercial offences and services), economic services (receipts from animal husbandry, fisheries, transport and communications, tourism etc), general services (examination fee of UPSC, sale of forms, passport fees, visa fees etc) and grants-in-aid (cash grants-in-aid from foreign countries and international organizations).

Revenue expenditures relate to the normal running of the government and interest payment on government debts. These expenditures do not create any physical or financial assets. Indian budget documents classify revenue expenditure into plan and non-plan revenue expenditure.

Plan revenue expenditure pertains to Central Plan and Central assistance provided for state and union territory plans. Such expenditure meets financial requirement of the development plans at the central and state levels. It includes plan assistance for the development of agriculture, rural development, irrigation and flood control, industry and mineral, transport, communications, science and technology both at central and state levels.

Non-plan revenue expenditure comprises of a wide range of general, social and economic services of the government. Expenditure on general services include administrative expenses of Parliament, the President and Council of Ministers, tax collection, interest payments, administrative services etc. Social services expenditure includes expenditure on education, arts and culture, science and research, medical services, family planning, public health, information and broadcasting, labour and employment, social security and welfare. This expenditure head becomes necessary as it assists in improving the quality and productivity of general population. Economic services comprises of expenditure on agriculture, irrigation, industrial and minerals, foreign trade and export promotion, animal husbandry, dairy development, fisheries, forestry, community development, industry and minerals, water and power development, transport and communications. The three main items of non-plan expenditure of the government are interest payment, pensions and subsidies.

Capital Budget

Capital budget cover capital receipts and capital expenditures of the government as explained below:

Capital receipts are the receipts of the government which create liability or reduce financial assets. The main components of such receipts are borrowings of different types and repayment of loans and advances by other parties. Important capital receipts are – market loans, special deposits, external assistance, recovery of loans and advances, small savings and provident funds.

Market loans are the loans floated by the government in money and capital markets. These are calculated on net basis, i.e., gross borrowing less repayment of loans.

Special deposits are investments with the government by the non-government provident funds, gratuity funds and investment surplus funds of LIC, GIC, and Employees' State Insurance Corporation etc.

External assistance is the loan received from foreign countries and international organizations.

Recovery of loans and advances refer to the recoveries of loans and advances made by the central to the state governments and union territories, foreign governments, industrial undertakings, municipalities, cooperative societies, companies in the private sector and government employees.

Small savings is another important type of capital receipts. These include post saving accounts,

time and recurring deposits with post offices, Kisan Vikas Patra, National Saving Certificates etc.

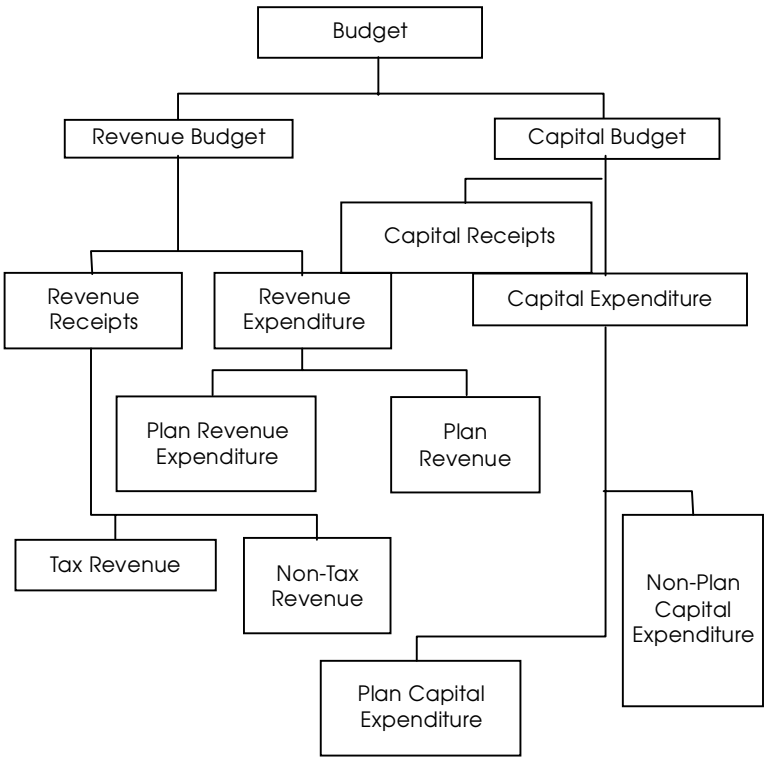
Provident funds include State Provident funds and Public Provident Funds.

Capital expenditures are those expenditures of the government which results in the creation of physical or financial assets or reduction in financial liabilities. Such expenditures are incurred on acquisition of physical and financial assets, such as land, buildings, machinery, equipment, shares and in granting loans and advances to the state governments and public enterprises etc.

Budget documents classify capital expenditure into plan and non-plan capital expenditures. *Plan capital expenditure* relates to the expenditure of the central government on projects included under the central plan. It also includes assistance provided by the central government to the state governments and union territories to meet the financial requirements of their plan projects. This expenditure helps in economic development of the country.

Non-plan capital expenditure various general, social and economic services provided by the government. General services include capital expenditure on defence and civil services such as expenditure on office and administrative buildings, construction works for defence purposes and machinery and equipment for defence. Social and community services include expenditure on buildings of schools, technical institutions, scientific research, hospitals, etc. Economic services consists of expenditure on various schemes of economic development such as agriculture, industry and minerals, power development, roads and bridges etc.

The components of budget are summarized in the schematic representation as under:



OBJECTIVES OF BUDGET

The objectives of a budget can be explained as below:

1. To make definite planning with regard to the estimated revenue and proposed expenditures and disbursements under various heads.
2. To take decisions regarding taxation, borrowings, expenditures and other fiscal measures systematically.
3. To identify various operations of the government and to judge the performance in regard to economic development.
4. To make an instrument of achieving various objectives of economic policy such as maintaining of economic stability and preventing business fluctuations.
5. To act as an index of government functioning.
6. To manage public enterprises effectively.

BALANCED BUDGET AND UNBALANCED BUDGET

A budget can be balanced or unbalanced. According to Dalton, *"a balanced budget is that, over a period of time, revenue does not fall short of expenditure. If expenditure exceeds revenue, the budget is said to be unbalanced."*

In other words, a budget is balanced when government's tax revenue and expenditure are equal. Thus, in case of balanced budget:

$$\text{Revenue} = \text{Expenditure}$$

SURPLUS BUDGET AND DEFICIT BUDGET

When a budget shows that government income and expenditure are not equal, it is said to be an unbalanced budget. This imbalanced may be due to an excess of expenditure over income or an excess of income over expenditure. In the former case, it results in deficit budget and in the latter case, a surplus budget. Thus, excess of income over expenditure is called a surplus budget. A surplus budget decreases liabilities of the government. Hence, in case of surplus budget:

$$\text{Revenue} > \text{Expenditure}$$

A surplus budget is undertaken mainly to curtail the excess expenditure in the economy. When government revenue is more than expenditure, something is taken out of the stream of spending of the community, and this, in turn, reduces national income and total demand via multiplier effect. Thus, a surplus budget is brought under action when there is acute inflation in the economy. A surplus deficit can be brought by decreasing government expenditure or by increasing taxation or by both actions.

The excess of expenditure over income is called a deficit budget. The amount of deficit is covered either through public borrowing or by drawing money from the accumulated surplus with the government. Thus, a deficit budget increases liabilities of the government. Therefore, in case of deficit budget:

$$\text{Revenue} < \text{Expenditure}$$

When level of economic activity is to be raised in the economy, deficit budget is undertaken. A deficit budget raises the level of expenditures and total demand through multiplier effect. Thus, national income is also raised. However, the condition is that the economy should be working below full employment level; otherwise, deficit budgetary policy will add to inflationary pressures in the economy. A budget deficit can be held by increasing government expenditure or by reducing taxation or by both actions. When government increases expenditure, (the revenue remaining same) total spending also increases and through multiplier effect, aggregate demand in the economy increases. When government reduces tax rates or abolishes certain taxes, disposable income of the community increases which stimulates spending, thereby leading to increase in aggregate demand.

TYPES OF DEFICIT

There are four types of deficits. These are: Budget deficit, fiscal deficit, primary deficit and revenue deficit. *Budget deficit* is the difference between (*a*) total expenditure and (*b*) current revenue and net internal and external capital receipts of the government. *Fiscal deficit* is the difference between (*a*) the total expenditure of the government and (*b*) the revenue receipts plus those capital receipts which are not in the nature of borrowing. *Primary deficit* is the difference between fiscal deficit and interest payments. The revenue deficit is the excess of government's revenue expenditures over revenue receipts.

Questions for Review

1. What do you mean by a budget? Explain its importance.
2. What is a revenue budget?
3. Define capital budget.
4. What is corporate tax?
5. Give two sources of non-tax revenue of the central government.
6. State three sources of capital receipts of the central government.
7. What is personal income tax?
8. Define balanced budget.
9. Define surplus budget.
10. Define deficit budget.
11. What are the revenue items?
12. Define tax and non-tax revenue.
13. What is the difference between revenue budget and capital budget?
14. Differentiate between developmental and non-developmental expenditure.
15. What is non-plan expenditure?
16. How may a deficit be financed?
17. What are three levels at which the budget impacts the economy?

26 FOREIGN EXCHANGE RATE—MEANING AND DETERMINATION

Foreign exchange rate and balance of payments are very closely related. In fact the foreign exchange rate is a mirror reflection of the balance of payments position of a country. Foreign exchange is a term used for foreign money which is internationally acceptable by all the countries. For instance, rupee is our national currency whereas dollar is the foreign currency. It is worthwhile to note that all currencies of the world are not acceptable as a means of settling international trade obligations. U.S. dollar, which is a powerful currency in the world is however internationally acceptable. Let us explain the concept of foreign exchange rate by taking an example of two countries—India and U.S.A. Suppose India buys capital goods from the U.S.A for a certain value. India is required to pay the price of capital goods in terms of dollar and not in terms of rupee, which is not accepted internationally. Thus there is need of conversion of Indian rupee into U.S. dollar for settling the above transaction. To convert rupee, our national currency, into dollar, foreign currency; there must be a price set between the two currencies. The price of one currency in terms of another currency is called foreign exchange rate. In other words, foreign exchange rate is the amount of national currency that must be paid per unit of foreign exchange. For example, if a machine costs Rs. 200000 in India and $ 5000 in U.S.A, then the exchange rate between India and U.S.A will be $1= Rs. 40 or Re. 1= $ 0.025.

The foreign exchange rate is determined by the demand for and supply of foreign exchange as explained in the next section.

Demand for Foreign Exchange

We demand foreign exchange to perform the following balance of payments transactions:

1. to buy foreign goods and services,
2. to make unilateral transfer payments,
3. to make deposits in overseas banks,
4. to make short and long term lending to foreign residents, firms and governments.

The demand for foreign exchange is, thus, derived from our demand for foreign goods and service imports and capital exports. In other words, the demand for foreign exchange emerges due to debit transactions in the balance of payments current and capital account. The demand curve for foreign exchange is sloping downward to the right, which means that as the foreign

exchange rate falls, i.e., as the value of rupee in terms of dollars come down, the domestic importers find it cheaper to buy rupee because they will now have to pay less and less dollars for buying one unit of rupee. The demand of rupee, thus, increases which means increase in the demand for imported goods and services. In other words, as the price of rupee goes down, demand for it goes up and vice versa.

Supply of Foreign Exchange

Supply of foreign exchange consists of foreign money earned by export of various goods and services, receiving unilateral payments from abroad and short term and long term capital inflows. The supply of foreign exchange, therefore, is derived from the credit transactions in the balance of payments current account and capital accounts of a country.

In short, all the foreign receipt i.e., earnings and borrowings constitute foreign exchange supply and all the foreign payments i.e., spending and lending consists of demand for foreign exchange. It is not necessary that foreign exchange supply will always be equal to foreign exchange demand. This can happen when the balance of payments is in equilibrium i.e., when the sum of autonomous current and capital account receipts are exactly equal to the autonomous current and capital account payments. The exchange rate that prevails in the foreign exchange market at the balance of payments equilibrium is called the equilibrium foreign exchange rate. The supply curve of foreign exchange is positively sloping, which means as the value of rupee goes up, the amount of dollars with exporters for each rupee increases. This would encourage domestic exporters to export more goods and services to the foreign countries. This would bring about an increase in the supplies of rupee. Thus, as the price of rupee rises in relation to dollars, exporters sell more abroad, and the country would receive more supply of rupee.

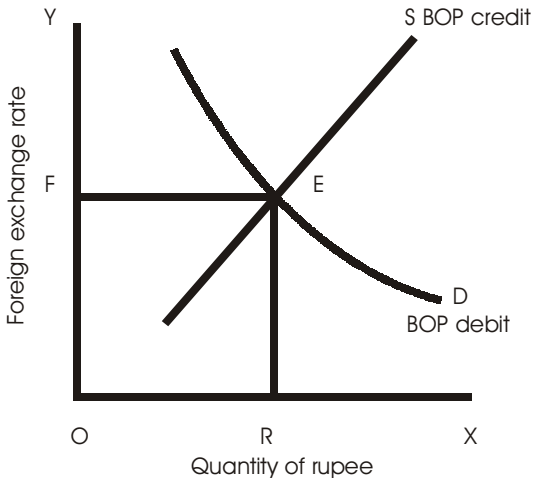


Fig. 26.1

Foreign exchange rate determination with the help of demand and supply forces is shown in the Fig. 26.1. The demand curve for foreign exchange is D, which represents autonomous debit transactions in the balance of payments. All autonomous credit transactions are depicted in the figure by the supply curve of foreign exchange S. At point E, the two curves intersect each other

so that OR quantity of foreign exchange supply is equal to same quantity of demand for foreign exchange. Foreign exchange rate at this equilibrium point is OF. At this point balance of payments is said to be in equilibrium. No other point other than point F can be considered an equilibrium foreign exchange rate. If the rate is higher than F, then the supply of foreign exchange exceeds demand for it; which would result in a fall in foreign exchange rate until it is F. Similarly, any rate lower than F means there is excess of foreign exchange demand over its supply which would lead to an increase in foreign exchange rate until it reaches F level. It is to note that this is the only natural rate that should prevail in the market, but there are always fluctuations in the foreign exchange rate on day-to-basis, which may cause a change in the existing foreign exchange rate.

Spot and Forward Foreign Exchange Transaction

Spot foreign exchange transaction refers to the purchase or sale of foreign exchange for immediate delivery. The exchange rate at which the transaction takes place is called the spot rate. For example, if Rs. 1000 could be obtained immediately by paying $ 25, then spot exchange rate is $ 1 = Rs. 40.

Forward foreign exchange transaction refers to agreement made today to buy or sell a specified amount of foreign exchange at a specified future date at the rate which is agreed upon today. For example, a person has entered into an agreement today to purchase $ 100 three months later at agreed rate, say, $ 1= Rs. 40. Then after three months, the person will make payment of Rs. 4000 to purchase $ 100 at that agreed upon rate, not considering of what the spot rate is at the time of transaction. If after three months the spot rate is $ 1 = Rs. 50, then the person makes a profit of Rs. 1000. If, on the other hand, spot rate is $1 = Rs. 20, then there is a loss of Rs. 2000 for the person. Forward exchange rate contracts are generally made for a period not exceeding six months. While spot rate is determined by market demand curve and market supply curve of foreign exchange for immediate delivery, forward exchange rate is determined by the demand for and supply of foreign exchange for future delivery.

EXCHANGE RATE SYSTEMS

In this section we will take a look at the different exchange rate systems which have been practiced from time to time. A broad classification of the system is as follows:

1. Floating Exchange Rates
2. Pegged or rigidly fixed exchange rates
3. Managed Flexibility.

Floating Exchange Rates

Under this system, there is no intervention by the government or central bank of a country in foreign exchange rate market. Thus an independent economic policy can be pursued under flexible exchange rate. Its monetary policy is not rigid to a certain rate of exchange. The rate of exchange has an equilibrating influence on the balance of payments and it is better to let this equilibrating factor work freely and automatically. Floating rates checks inflationary and deflationary forces to penetrate in the economy. Fluctuating exchange rates of exchange do not discourage long-term investments as it is supposed.

Pegged or Rigidly Fixed Exchange Rates

Under this system, there is complete government interference in the foreign exchange market. The exchange rate is fixed at a given equilibrium level and if there is any upset in the equilibrium, the government would intervene and take attempts to establish equilibrium. The government does this by selling or buying foreign exchange i.e., by pegging or supporting the equilibrium exchange rate. The government is able to do so by maintaining a buffer-stock of foreign exchange. This means, buying foreign exchange when there is too much supply and selling the same when there is too much demand for it. Thus, the purpose of the system is to stabilize the price of foreign exchange at a given equilibrium rate.

Such a system stabilizes exchange rates and thereby creates a congenial atmosphere in which operations relating to international trade function smoothly and in an orderly manner. Moreover, it controls and prevents speculative activities in regard to foreign exchange. It also checks currency appreciation or depreciation and provides strength to the domestic currency.

But there are disadvantages too of this method. It creates a heavy burden on the government. A large foreign exchange reserves has to build, which is another problem for the government. Moreover, the process actually does not solve the balance of payments problem, but only suppresses it through government intervention. Again, it requires a greater need for creating international institutional arrangements for borrowing and lending international liquidity as accommodating balance of payments transactions.

Managed Flexibility

Under this system, we have the following categories:

1. Adjustable peg system
2. Crawling or trotting or gliding parity
3. System of clean float and dirty float.

Adjustable peg system: Under the system of adjustable peg, a country should try to have a system of fixed exchange rates for as long as it can, i.e., until the country exhausts all its foreign exchange reserves. Till then, the country should peg or support its fixed exchange rate. Once the foreign reserves are exhausted, the country should undertake devaluation and move to another equilibrium exchange rate. In other words, the system involves pegging the exchange rate to a given level at a given time and as situations change, the old peg is discarded when it is no longer feasible and process continues adjusting to a new peg. The adjustable peg system is also described as maximum devaluation system, because after a wait for a relatively long time, a sudden big devaluation of currency is done.

Crawling or trotting or gliding parity: We have seen that there is sudden devaluation of currency in the above system, which in fact is harmful for an economy and therefore it is need to avoid. Crawling peg systems advocates adjusting of exchange rate to a new demand and supply conditions continuously and regulate the exchange rate at frequent intervals. Thus, in this system we keep on moving from one peg to another rather rapidly, without waiting until all our foreign reserves are finished at any one given rate of exchange.

The adjustable peg system is closer to fixed exchange rate policy, whereas the crawling peg system is closer to flexible exchange rate policy.

System of clean float and dirty float: In case of clean float, the exchange rate is allowed to be determined by free market forces of demand and supply of foreign exchange. There is no government intervention in the foreign exchange market. Thus it is identical to freely fluctuating exchange rate policy.

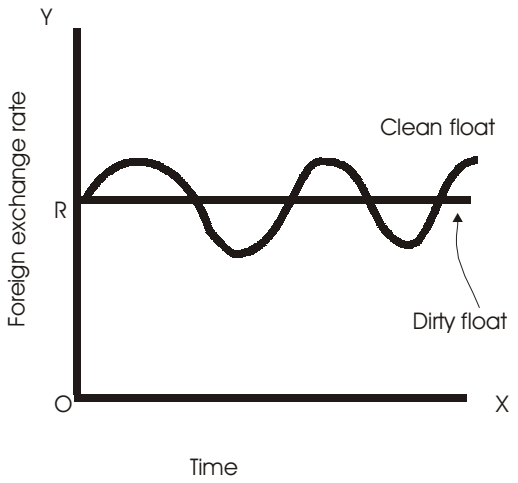


Fig. 26.2

Dirty float means that we allow the exchange rate to be determined by the market forces of demand and supply of foreign exchange but government intervention in the market is also allowed in order to iron out the ups and downs in the exchange rate movement. Clean float system ensures exchange rate stability with a certain degree of exchange rate flexibility but dirty float system sticks to exchange rate stability allowing no exchange rate fluctuation. The Fig. 26.2 shows the two cases.

BAND SYSTEM

The Bretton Woods system of exchange rates, which was in vogue from 1944 till 1971, was one of relatively fixed exchange rates. System of fixed exchange rates has some degree of flexibility within a limited band or range of exchange rates fluctuations. This system of fixed exchange rates is the band system or the Bretton Woods system. The range between the two rates of exchange is called the band within which the exchange rate is allowed to fluctuate. The upper or lower limits of the band are set by the government or suggested by the IMF to member countries. The government allows free market forces to influence exchange rate on condition that the exchange rate fluctuates within the band as set by the government. The size of the band is determined by the extent of fluctuations, which the authorities consider desirable or practicable. Initially the IMF permitted fluctuations in exchange rate of member countries within 1% of the band on either side. Later, it was raised to 2.25% on either side of the fixed parity. It should be noted that the exchange rate is not allowed to go outside the limits of the band.

Questions for Review

1. What do you mean by foreign exchange rate?
2. Define foreign exchange market.
3. What are spot and forward markets in foreign exchange? Give suitable illustrations.
4. Explain the meanings of crawling peg and managed float.
5. How is foreign exchange rate determined in a free foreign exchange market?
6. Why do we demand foreign exchange?
7. Explain supply of foreign exchange.
8. What do you mean by dirty float?
9. If a machine costs Rs. 1000 in India and $ 50 in U.S.A, then what will the exchange rate between India and U.S.A?

27 BALANCE OF PAYMENTS ACCOUNT—MEANING AND COMPONENTS

The balance of payment is one of the most important statistical statements for any country. It is a systematic record of all economic transactions between the residents of a country and of the residents of the rest of the world in an accounting year. One should keep in mind that the word 'payments' does not mean items which only involves payments of a country, but it includes both payments and receipts of a country. Similarly, the word 'balance' does not mean state of equilibrium or favourable situation, but it only means that it is a balance sheet of receipts and payments having an accounting balance.

Thus, it is clear that balance of payments transactions include all the foreign receipts of and payments by a country during a given year. Receipts are the earnings and borrowings of foreign exchange, which are recorded as credit items in the balance of payments accounts. Payments, on the other hand, refer to all spending and lending of foreign exchange by a country and these are recorded as debit items. We thus see that all receipts of a country are financial inflows and all payments are financial outflows in a year. We must always remember that in pure accounting terms or book-keeping sense, the balance of payments must always be in balance, because the balance of payments is a schedule showing debit and credit transactions which must be equal. This equality does not mean that the balance of payments is in equilibrium or favourable situation. There may be disequilibrium-deficits and surplus, in the balance of payments. The balance of payments statements generally contain the following major accounts:

1. Goods Account.
2. Services Account.
3. Unilateral Transfers Account.
4. Long-Term Capital Account.
5. Short-Term Capital Account.
6. International Liquidity Account.

Let us explain these briefly as below:

Goods Account

This account contains record of the value of merchandise exports and the value of merchandise

imports. These items of earnings and spending are called 'visible items' in the balance of payments. If the receipts from exports of goods are equal to the payments for the imports of goods, we call the situation as zero 'goods balance'. If receipts exceed payments, it is called positive goods balance and in case it is short of payments, it is negative goods balance. A positive goods balance is considered favourable for a country while that of negative is treated as unfavorable.

Services Account

This account records the value of exports and imports of intangible goods or services. These are regarded as 'invisible items' in the balance of payments. These are invisible in the sense that service receipts and payments are not recorded at the port of entry or exit as is the case with the merchandise imports and exports. Transactions relating to services generally include – transportation, banking and insurance, tourism, travel services, purchase and payments of goods and services by tourists, expenses of students studying abroad, diplomatic and military expenses, interest, profits, dividends, and royalties receipt and payments. These items are generally termed as investment income or expenditure or receipts and payments arising out of what are called as 'capital services'. When we add up all items in the services account, which may be positive or negative or zero, it is said as 'service balance'. A positive sum is regarded as favourable to a country.

Unilateral Transfers Account

This account records the value of gifts, grants and reparation receipts and payments to foreign countries. It consists of two transfers — government transfers and private transfers. Foreign aid or military aid received by a country from a foreign country in times of crises or during war is government to government transfers. Private transfers are funds received from or remitted to foreign countries on person-to-person basis. An Indian working as software engineer in Microsoft Company in U.S.A remits money to his parents staying in India is an example of private transfers.

Long-Term Capital Account

This account includes the amount of capital that has moved into or out of the country in a year. Any amount of capital that has moved in or out of the country for a period of one year or more is regarded as long-term capital movement. This account consists of private direct investment, private portfolio investment and government loans to foreign countries. Private direct investments are investments made by residents and firms of a country in foreign countries and by foreigners in the home country. Private portfolio investments are the investments done by residents and firms of a country in foreign securities and by foreigners in home country securities. Government loans to foreign governments include loans given by home country to foreign country and from foreign country to home country.

Short-Term Capital Account

The short-term capital account includes bank deposits and other short term payments and credit arrangements. These are receipts and payments effected in less than a year. Most of the short-term capital transactions represent bank transfers that finance trade and commerce.

International Liquidity Account

This account records net changes in foreign reserves. Thus, it includes internationally acceptable means of settling international obligations. International Liquidity Account can be explained using the following table which shows balance of payments surplus. It is seen that the sum of the first five accounts exceed the total payments on the same five accounts by a sum of $ 90 million. The total receipts are $ 970 million and total payments are $ 880 million (200+300+80+50+250). Thus, there is a net balance of payment surplus equal to $ 90 million (970-880). This sum of $ 90 million is entered into International Liquidity Account as debit. The reason for entering in debit side is that it represents either purchase or import of gold worth $ 90 million or net addition to accumulation of foreign reserves of $ 90 million or capital lending to other countries on short or long tern basis.

	Credit (Receipts) in $ million	*Debit (Payments) in $ million*
1. Goods Account	500	200
2. Services Account	100	300
3. Unilateral Transfers Account	70	80
4. Long-Term Capital Account	100	50
5. Short-term Capital Account	200	250
6. International Liquidity Account		90
7. Balance of payments	970	970

In case of deficit balance of payments, $ 90 million will be entered into International Liquidity Account as credit. This is because it represents either selling or exporting gold worth $ 90 million or drawing upon the past accumulated foreign reserves equal to $ 90 million or borrowing capital equal to $ 90 million on short or long term basis from other countries or international financial institutions. Thus, a debit entry in the International Liquidity Account shows that there is a surplus in the balance of payments of the country for that year and a credit entry, shows a deficit.

We have explained above the six major accounts of a balance of payments. A sample schedule of balance of payments based on hypothetical figures is shown under.

From the above table, we can derive the important concepts related to balance of payments such as Balance of Trade, Balance of Payments on Current and Capital account, Basic Balance, Accounting Balance of Payments and Overall Balance of Payments. These concepts are explained briefly as under:

Major Accounts	*Credit (receipts)*	*Debit (payments)*	*Net surplus (+) Deficit (–)*
1. Goods Account	20	18	+2
2. Services Account	10	25	–15
(A) Balance of Trade (1 + 2)	30	43	–13
3. Unilateral Transfers Account	30	12	+18

Contd....

(B) BOP on current Account (1 + 2 + 3)	60	55	+5
4. Long Term Capital Account	15	12	+3
(C) Basic Balance (1 + 2 + 3 + 4)	75	67	+8
5. Short Term Capital Account	5	4	+1
(D) BOP on Capital Account (4 + 5)	20	16	+4
(E) Overall BOP (B + D)	80	71	+9
6. International Liquidity account		9	
(F) BOP Accounting balance	80	80	0

Balance of Trade

Balance of trade (BOT) is defined as the difference between the value of goods and services sold to foreigners by the residents and firms of the home country and the value of goods and services purchased by them from foreigners. In simple words, it is the value of goods and services exported minus the value of goods and services imported by a country. When imports and exports value of goods and services are equal, the balance of trade is said to be in equilibrium. When imports value is more than exports value of goods and services, there is deficit balance of trade. And when imports value is less than the exports value of goods and services, there is surplus balance of trade.

Balance of Payments on Current Account

It consists of three balances—merchandise balance, services balance and unilateral transfers balance. It is also referred to as net foreign investment because the sum of the three elements represents the contribution of foreign trade to GNP. It is to be noted here that balance of payments on current account contains all the receipts due to earnings and all the payments which emerged due to spending.

Balance of Payments on Capital Account

Balance of payments on capital account comprises of the long and short term capital accounts. Thus, it includes transactions which involve inward or outward movement of capital and investment.

Basic Balance

This is the sum of balance of payments on current account and long-term capital accounts. The short-term capital account balance is not included here because these are relatively volatile and unpredictable. Moreover, many countries do not have separate short-term capital accounts.

Overall Balance of Payments

This is a sum of balance of payments on current accounts and on capital accounts. It includes all international monetary transactions of a country with the rest of the world.

Accounting Balance of Payments

Accounting balance of payments means equality of balance of payments debit and credit entries.

Balance of payments must always be in balance in the book-keeping sense. The adjustments of International Liquidity Account either in the credit side or debit side in the balance of payments schedule brings about this balance.

AUTONOMOUS AND ACCOMMODATING TRANSACTIONS

Autonomous transactions are those which take place regardless of the size of other items in the balance of payments. Take for example, the export of goods to a foreign country. It is an autonomous transaction and its value results in payments by foreigners to the home country, which is entered as credit item. All transactions which take place either in goods account or the service account or the unilateral transfer account or the long-term and short-term capital account of a country are considered as autonomous transactions. These arise out of autonomous economic activities as credit or debit transactions, which take place independent of balance of payments situation.

The accommodating transactions, on the other hand, take place due to balance of payments situations of a country. For example, if a country is bound to export gold worth $ 100 million to settle its balance of payments deficits, then we say that this gold export is an accommodating transaction, which has taken place to solve its balance of payments problem. The export of gold transaction is entered into the country's balance of payments account as credit item.

In short, all credit and debit entries in the balance of payments current and capital accounts are regarded as autonomous transactions and all credit and debit entries in the International Liquidity accounts are regarded as accommodating transactions. Accommodating transactions are undertaken for deliberate purpose of correcting any imbalance in autonomous transactions.

Deficit and Surplus Balance of Payments

A deficit in the balance of payments occurs when the autonomous payments (debits) are more than the value of autonomous receipts (credits) and surplus results when the autonomous payments (debits) are less than the value of autonomous receipts (credits). In case autonomous payments (debits) are equal to the value of autonomous receipts (credits), then there is balance of payments equilibrium. In terms of accommodating transactions, if an amount is entered as credit in the International Liquidity account, it is called as deficit balance of payments. On the other hand, if an amount is entered in the debit side, it is the measure of surplus in the balance of payments of a country. If International Liquidity account has no entry either on debit or credit side, then there is equilibrium in the balance of payments. A deficit in the balance of payments is regarded as unfavourable and a surplus a favourable situation in the balance of payments.

Questions for Review

1. Define balance of trade.
2. What are current and capital accounts?
3. What do you mean by autonomous and accommodating transactions?
4. Define basic balance.
5. What do you mean by deficit and surplus in the balance of payments of a country?
6. Define balance of payments.

7. Explain the six categories of classifying transactions of balance of payments.

8. Why are items in Services Account regarded as 'invisible items' in the balance of payments?

9. What does Short-term capital account include?

10. What is deficit balance of trade?

11. What is meant by Accounting balance of payments?

12. Explain International Liquidity Account with the help of an example.

13. What do you mean by Private portfolio investments?

14. What do you mean by Private direct investments?

15. Give an example each of government and private transfers.

16. What transactions are included in Services Account?

17. Why must balance of payments be always in balance?

18. Where do we record receipts of foreign exchange in balance of payments account?

19. What does 'payments' in the balance of payments refer to?

APPENDICES

I
SOLVED QUESTIONS FROM NBSE EXAM. PAPERS
[Only questions relevant to new syllabus have been included.]

1. *What is a closed economy?*

Ans: A closed economy is one, which has no economic relations with the rest of the world.

2. *What is an open economy?*

Ans: An open economy has all types of relations with the rest of the world.

3. *Explain the meaning of per capita income.*

Ans: It is the average annual income of all residents of a country. It can be calculated by dividing the national income by the total population.

4. *What is net investment?*

Ans: Net investment or net capital formation is gross capital formation minus depreciation value.

5. *What do you understand by normal resident of a country?*

Ans: A normal resident of a country is a person or institution that normally resides in a country and whose center of economic interest lies in that country. It includes the following:

(*i*) All production units operating in the country;

(*ii*) Nationals and the foreign nationals who stay for more than a year in the country;

(*iii*) Nationals who have gone abroad but returned within a year;

(*iv*) Nationals working in the foreign embassies and international institutions located in the country;

(*v*) Students and patients of a country who have gone abroad and stay there even for more than a year.

6. *What is a stock?*

Ans: A stock is quantity measurable at a particular point of time. A stock has no time dimension. Water in a tank at a particular point of time, say, at 10 am is a stock.

7. *Define flow concept.*

Ans: A flow is quantity measurable over a period of time. It changes over time. Water flowing out from a tank between 10 am and 11 am, is a flow concept.

8. *What is financial capital?*

Ans: Financial capital is a sort of expression used to convey securities, bonds etc. It is also known as Paper claims.

9. *Define consumption.*

Ans: It is an activity, which is directed to satisfy, wants. It refers to using up of a good.

10. *Give one example of people who are staying abroad but are residents of India.*

Ans: Students staying abroad for their studies.

11. *Define gross domestic capital formation.*

Ans: It is the sum of investment in domestic fixed capital and inventory investment in a country in a year.

12. *When will domestic factor income be greater than national income?*

Ans: When net factor income from abroad is negative.

13. *Name the two categories into which gross fixed capital formation is divided for measuring expenditure.*

Ans: The two categories are: (*i*) Investment in fixed capital and (*ii*) Inventory investment.

14. *Explain briefly the concept of domestic territory.*

Ans: Domestic territory has special meaning in economics. It includes the following besides the geographical or political boundary:

(*i*) Territorial waters of the country;

(*ii*) Ships and aircrafts owned and operated by the residents of the country between two or more countries;

(*iii*) Fishing vessels, oil rigs, and floating platforms operated by the residents in the international waters;

(*iv*) Embassies, consulates, high commissions and military establishments of the country located in foreign lands.

15. *Define consumption of fixed capital.*

Ans: The wear and tear of capital equipment is known as depreciation, or consumption of fixed capital.

16. *What are capital goods?*

Ans: Capital goods are used for the production of final consumer goods. These goods do not directly satisfy human wants but help in their production.

17. *Define single-use consumer goods.*

Ans: The goods that can be used for once only are called single – use consumer goods.

18. *Define durable-use consumer goods.*

Ans: These are the goods that can be used repeatedly. These last for long.

19. *Give two examples of intermediate consumption in a transport company.*

Ans: (*i*) Tyres and (*ii*) petrol.

20. *Give two examples of intermediate consumption in agricultural sector in India.*

Ans: (*i*) Seeds and (*ii*) fertilizers.

21. *What are final products?*

Ans: Final goods are those goods, which are capable of directly satisfying human wants. These are the ready-to-use goods.

22. *Define value of output.*

Ans: Money value of goods and services produced in an economy is called value of output.

23. *What is an economic good?*

Ans: A good, which is available in exchange of money, is called an economic good. These are scarce goods.

24. *How is the value of gross output different from gross value added?*

Ans: Gross value added does not include intermediate consumption. Thus it is value of gross output minus intermediate consumption.

25. *How is capital loss different from the consumption of fixed capital?*

Ans: Capital loss refers to the loss of utility of capital equipment due to external factors such as floods, earthquakes, storms etc. But consumption of fixed capital refers to loss of value of capital equipment due to general wear and tear during the production process.

26. *Explain the meaning of change in stocks.*

Ans: Changes in the physical value of stock refers to the following:

(*a*) Change in the stock of raw materials, semi-finished and finished goods,

(*b*) Change in the stock of strategic materials, food grains etc held by the government,

(*c*) Change in the stock of livestock raised for slaughter.

27. *Distinguish between intermediate products and final products.*

Ans: When the goods and services are consumed for further production they are called intermediate goods. These goods do not directly satisfy human wants but help in the production of consumer goods. For example, cotton used in spinning and weaving mills. Final goods are the goods ready for final use. For example, car, T.V. sets etc.

28. *What do you understand by demand for intermediate consumption?*

Ans: The different production units of an economy such as corporate enterprises, quasi-corporate enterprises, governments, households, require various inputs for production. The demand for these commodities for the purpose of production is called demand for intermediate consumption.

29. *What do you understand by final consumption?*

Ans: The demand for goods and services for consumption by general governments, households and non-profit institutions, is called final consumption.

30. *Distinguish between final consumption and intermediate consumption. Give suitable examples.*

Ans: Final consumption refers to the demand for various goods and services for current consumption.

It satisfies consumer's needs directly. Demand from final consumption comes from two sectors. They are: (*i*) General government, and (*ii*) Households.

Intermediate consumption means use of non-factor inputs for the purpose of production of goods and services. For example non-factor inputs used in production of wheat are: seeds, fertilizers, water etc.

31. *Distinguish between fixed capital formation and changes in stocks.*

Ans: Fixed capital formation refers to the creation or addition of fixed capital assets such as buildings, machines, tools, equipment, roads, railways etc, during a year. Change in stock is the difference between closing stock and opening stock.

Fixed capital formation is addition to fixed capital assets but change in stocks is an addition to inventories. The former is done in view of long-term demand whereas the latter is determined by short-term demand.

32. *What is net value added at factor cost? Is it always equal to factor incomes? Why?*

Ans: Net value added at factor cost is the sum total of factor payments. In other words, it is the cost incurred by the firm on various factors of production. It is the result of the contribution of factors of production and hence is distributed among them as factor payments such as rent, wages, interest and profits. Thus, it is equal to the sum of factor payments. In short:

$$\text{Net value added at}_{FC} = \text{Rent} + \text{wages} + \text{Interest} + \text{profits.}$$

33. *Distinguish between value of output and value added at factor cost. Why is it important to measure value added at factor cost?*

Ans: Value of output is the money value of all the goods and services produced by a firm at current prices. It can be estimated by multiplying quantity of output with its price. For example, if a cotton textile mill produces 100 meters of cloth and sells at @ Rs. 20 per meter, the value of its output will be Rs. 20000.

Value added refers to the additions made in the value of intermediate goods by a firm with the help of factors of production. For example, cotton textile mill purchases intermediate goods worth Rs. 1000, convert them to cloth, and sell the same for Rs. 1500. Thus, the firm has added the value of Rs. 1500–1000 = Rs. 500.

34. *Explain the end-use classification of goods.*

Ans: Goods and services produced by the producing units are consumed by different categories of consumers. These include households, enterprises and general government. According to end-use, goods and services are classified into the following broad categories:

(*i*) **Consumer goods:** Consumer goods may be durable, non-durable, or perishable.

(*ii*) **Intermediate goods:** When the goods and services are consumed for further production they are called intermediate goods.

(*iii*) **Capital goods:** Capital goods are defined as all goods produced for use in future productive processes. These include both durable and perishable goods.

The end-use classification of goods and services clearly explain that a commodity which is a consumer good for one consumer may become intermediate good for another and capital good for the third category.

35. *Distinguish between 'normative' and 'positive' economics.*

Ans: A statement that makes a real description of an activity is known as positive statement. Positive statements deal with 'What', 'How' and 'Why' of economic variables. For example, 'India is a poor country', is a positive statement.

A statement which deals with 'what ought to be' is a normative statement. It makes an assessment of an activity and offers suggestions. For example, 'India should check population growth', is a normative statement.

36. *Give the definition of a scarce resource.*

Ans: A resource is said to be scarce when its supply is short in relation to its demand.

37. *Define an economy.*

Ans: An economy is a place where people earn their living by doing various economic activities.

38. *Give meaning of inductive and deductive methods of constructing economic theory.*

Ans: Deductive method is also known as the abstract, analytical, hypothetical or a priori method. This method accepts certain universal truths or axioms and tries to deduce inferences about the particular event through a process of logical reasoning. In other words, deductive method goes from general to particular.

For example, it is a universal truth that 'man is mortal'. Since James is a man he is also mortal.

Inductive method is also known as Historical method, Concrete method, Analytical method and Realistic method. This method starts investigation on the basis of particular facts, historical events and tries to generalize them with reference to the whole economy. Induction is the process of reasoning by which we try to establish a causal relationship between two phenomena through an examination of a number of individual cases in order to get truth or generalize a phenomenon. Inductive method thus moves from particular to general. On the basis of real facts and particular events attempt is made to formulate general laws.

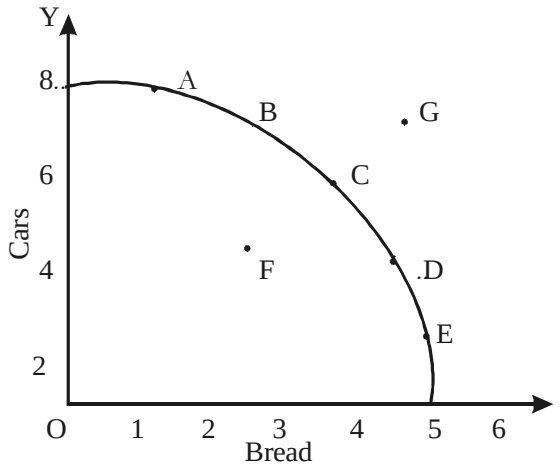
For example, we observe that Jack buys more rice when the price of rice falls. We further observe that James also purchases more rice at a lower price. Likewise, we observe the behaviour of many buyers of rice in the market. We find similarity in their behaviour and formulate a general law that "people purchase more rice at low prices."

39. *Draw a production possibility curve and show the following situation on the diagram:*

(a) Full employment of resources.

(b) Underutilization of resources.

Ans: (*a*) A, B, C, D and E: Full employment of resources. (*b*) F: Underutilization of resources.



40. *Distinguish between short run and long run.*

Ans: In the short run, some factor inputs are fixed while the others are variable. Only increasing the quantity of the variable factors can increase the production. The time is so limited that the firms cannot contract to hire additional units of the fixed factors. This sets limit to the maximum quantity of output that a firm can turn out.

In the long run, all the factors of production become variable. A firm can install a new plant or construct a new building in response to increased demand. The distinction between the fixed factors and the variable factors becomes irrelevant. The quantity of output to be produced by a firm will range from zero to an indefinite quantity.

41. *Give two reasons for the operation of the law of increasing returns to scale.*

Ans: (*i*) Technical economies.

(*ii*) Discovery of new ways to do things or innovations.

42. *Give two examples each of implicit and explicit costs in a tailoring shop.*

Ans: Explicit costs:

(*a*) Rent of the shop paid to the landlord.

(*b*) Payments to workers.

Implicit costs:

(*i*) Tailors' own sewing machines.

(*ii*) His own labour.

43. *What do substitute goods mean?*

Ans: When two goods can easily be used in place of one another with nearly the same level of satisfaction; they are called substitute goods. For example—Tea can be used in place of coffee; similarly sugar and gur are substitutes.

44. *What do complementary goods mean?*

Ans: When two goods are of the nature that they are used together to satisfy a particular human want, they are called as complementary goods. For example—bread and butter, scooter and petrol, pen and refill etc.

45. *What is meant by production process?*

Ans: It refers to a continuous process of production of goods and services, consumption of goods and services and capital formation in the economy.

46. *What are Giffen's goods?*

Ans: Giffen goods are those goods, the demand of which does not increase with decline in their prices, because consumers may be tempted to divert the extra-earned purchasing power to some other better commodity.

47. *What are indirect taxes?*

Ans: Taxes that are imposed by the government on production, sale and import of goods are known as indirect taxes. For example—sales taxes, excise duty, custom duty etc. The burden of taxes in such case can easily be shifted to other persons.

48. *What is meant by factor income?*

Ans: Income received by the factors of production from the services they have rendered to the producers is called factor income.

49. *What is per capita income?*

Ans: Per capita income is an average income of the individuals during a year. It can be expressed as:

$$\text{Per capital income} = \frac{\text{National income}}{\text{Total population}}$$

50. *Define the concept "compensation of employees."*

Ans: Compensation of employees stands to all payments made by employers to their employees in the form of wages and salaries and contribution to social security schemes.

51. *What is national income accounting?*

Ans: National income accounting is a statistical classification or statement that shows the value of total final goods produced in the various sectors of the economy.

52. *Mention two sources of gross domestic capital formation.*

Ans: Two sources of gross domestic capital formation are:

(1) Saving.

(2) Provision for depreciation.

53. *What happens to demand when there is a contraction in demand?*

Ans: When there is a contraction in demand, the consumer buys less of a commodity. In other words, demand decreases due to rise in the price of a commodity.

54. *What are transfer earnings?*

Ans: Transfer earnings or income are the income received by both households and enterprises without rendering any services or adding to the flow of goods and services. For example, scholarships received by the students.

55. *Differentiate between production for exchange and production for self-consumption.*

Ans: The main points of differences between production for self-consumption and production for exchange are as follows:

Production for self consumption	*Production for exchange*
1. Production is meant for self-use.	1. Production is meant for sale in the market.
2. It does not generate any operating surplus.	2. It generates operating surplus.
3. It takes place in subsistence economies.	3. It is the feature of modern economies.
4. No capital formation.	4. Enables capital formation.

56. *Distinguish between current transfers and capital transfers.*

Ans: The difference between current transfers and capital transfers are shown below:

Current transfers	*Capital transfers*
1. Current transfers are paid out of the current income.	1. They are paid from the past savings or wealth.
2. They add to the current income of the recipient.	2. They help in capital formation.
3. They are made in for short-term expenditure.	3. They are made for long-term expenditure.

57. *Why is it important to measure the value of goods and services produced?*

Ans: It is important because the value of output helps in estimating national income of a country.

58. *What are considered as capital losses?*

Ans: Capital losses are the loss of value of fixed assets due to unexpected obsolescence such as natural calamities like floods, earthquakes, depletion of mineral resources etc. Production generally comes to an end during the time of capital loss.

59. *Explain the importance of national income studies.*

Ans: In recent years, national income studies have become very useful for an economy. The points below explain the importance of national income studies:

(*a*) The government uses national income data to formulate economic policies.

(*b*) National income figures are important indicators of the economic progress and welfare of a country.

(*c*) National income estimates are used in comparing the international level of economic progress of welfare.

(*d*) National income data enable us to have an idea about the structure of an economy.

(*e*) The data relating to national income are very useful for the trade unions.

(*f*) National income data are also useful to determine the expenditure for the development of defence in the country.

60. *What is value added?*

Ans: It refers to the addition made in the value of intermediate goods by a firm with the help of factors of production. For example, a cotton textile mill buys raw materials worth Rs. 1000 and converts them into cotton cloth whose market value is Rs. 1500. Here, value added by the firm is Rs.500 (1000-500).

61. *What are inferior goods?*

Ans: Inferior goods are those goods whose demand falls with the fall in price and rises with the rise in price. For example, Biri, Gur, Toned milk etc.

62. *What are capital goods?*

Ans: Capital goods are those goods, which are used for further production. These include both durable and non-durable goods such as machines, factory building, semi-finished goods etc.

63. *Distinguish between economic and non-economic goods.*

Ans: The distinction between economic or free goods and non-economic goods are as follows:

Economic Goods	*Non-Economic Goods*
1. These goods are limited in supply. supply.	1. These goods are available in abundant amount.
2. These goods command price. To obtain such goods, one has to pay price.	2. These goods do not command any price. These are available free of cost.
3. Economic goods are man-made.	3. These are free gifts of nature.
4. Scarce resources are used to produce such goods.	4. No such resources are required in their production.

64. *Write a note on the concept of operating surplus.*

Ans: Operating Surplus is the sum total of income from property (rent and interest) and

income from entrepreneurship (profits). CSO has defined it as, **"**Gross output of a producer's value less the sum of intermediate consumption, compensation of employees, consumption of fixed capital and indirect taxes."

65. *Define economic goods.*

Ans: All goods which are scarce in supply, and for which we have to pay something are called economic goods. For example – cloth, milk, books etc.

66. *What is capital formation?*

Ans: An addition made to the existing stock of capital formation during a given period is called capital formation. Thus, it refers to investment in fixed capital assets like machines, tools, buildings, roads, dams, etc.

67. *Define net value added at factor cost.*

Ans: Net value added at factor cost is the sum total of factor payments. It is the cost incurred by the firm on various factors of production.

68. *Define break-even point.*

Ans: The break-even point is the point at which firm's total revenue (TR) equals total cost (TC).

69. *Explain the nature of Production process.*

Ans: Production process is a continuous process in which goods and services are produced, consumed and the surplus of production over consumption is carried over to the next year in order to produce more goods and services. Since, human wants are unlimited and reoccur frequently, production is to go on continuously. Production becomes necessary also for the maintenance and replacement of capital equipment. Production process requires use of factors of production. These factors of production are required to be organized in order to increase efficiency. Further, selection of appropriate technology is a prime decision to be taken by the producers.

70. *What are primary inputs?*

Ans: These are also known as factor inputs. Factor inputs are mainly of four types – land, labour, capital and enterprise that help in the process of production.

71. *Give two examples of private corporate enterprise.*

Ans: (*i*) Reliance Industries Ltd.

(*ii*) Infosys Ltd.

72. *Define dividend.*

Ans: Dividend is that part of profit of a corporate enterprise which is distributed among the shareholders.

73. *What are transfer payments?*

Ans: Transfer payments are those payments, which are received without doing any work or without contributing to the flow of goods and services.

74. *Name three collective wants to be satisfied by govt. production.*

Ans: (*i*) Health; (*ii*) Law and order, and (*iii*) Street lighting.

75. *Give two examples of financial non-departmental enterprises in India.*

Ans: (*i*) Industrial Finance Corporation of India.

(*ii*) Life Insurance Corporation of India.

76. *Give two examples of acquiring foreign financial assets.*

Ans: (*i*) Investment in foreign countries.

(*ii*) Excess of exports over imports.

77. *State the relationship between demand & price.*

Ans: Law of demand states that other things remaining the same, demand for a good will fall if price rises and vice versa. Demand for a good has inverse relationship with its price.

78. *Define Gross Fixed Capital Formation.*

Ans: Gross fixed capital formation means investment made in fixed capital assets like machines, tools, buildings, roads, etc during a year. It is the sum of net fixed investment and depreciation.

79. *What are goods in economics?*

Ans: All material things that satisfy human wants are called goods in economics. For example–books, pens, cloth etc.

80. *Explain the concept of mixed income of self-employed.*

Ans: Mixed income is the income of self-employed persons like doctors, lawyers, barbers, shopkeepers, farmers etc. These persons work both as producers and as suppliers of factor services to themselves independently. Some part of their income relates to wage income and the rest part to property income. So, their income is called as mixed income. Mixed income is generated in all the sectors of the economy. However, the primary sector constitutes the larger part of the mixed income. Mixed income included in the national income.

81. *Differentiate between consumer goods and producers' goods.*

Ans: Consumer goods are the goods finally used by the consumers to satisfy their wants. These goods directly satisfy human wants.

Producer goods are those goods, which are used by the producers to produce more goods or continue the process of production.

The examples of consumer goods are milk, food, a TV set; car etc and that of producers' goods are machines, tools, equipments etc.

82. *State the process of capital formation.*

Ans: An addition made to the existing stock of capital during a given period is called capital formation. Thus, it refers to investment in fixed capital assets like machines, tools, buildings, roads, dams etc. Capital formation depends on saving. More saving leads to more capital formation.

83. *What is factor cost?*

Ans: Total cost incurred by the producer on various factor of production during the process of production is called factor cost. This is factor income for the factors of production.

84. *Define land.*

Ans: Land in economics does not only mean the upper surface of the earth but also all other free gifts bestowed to us by nature such as air, water, sunshine, rivers, forests, mountains, mines etc.

85. *What is Capital?*

Ans: Capital refers to all man made goods, which is used for further production. For this reason capital is called produced means of production.

86. *"Economic is a science of choice" Discuss.*

Ans: Economics is a science of choice. Every economy is faced with this basic problem. This has been reflected in the definition given by Prof. Lionel Robbins in his book, "An Essay on the Nature and Significance of Economic Science". According to Robbins economics studies human wants and scarce means, which have alternative uses. Scarcity of means in relation to unlimited wants leads to the problem of making a choice. Hence, the problem of choice is the central problem of an economy.

87. *State the Law of Diminishing Returns?*

Ans: The law of diminishing returns is one of the very old laws in economics. Sir Edward West was the first to explain this law. It states that when an additional unit of a variable factor is applied while other factors are fixed, the total product increases at a decreasing rate. According to Prof. Boulding, **"**As we increase the quantity of one input which is combined with a fix quantity of the other input, the marginal physical productivity of the variable input must eventually decline."

88. *What is elasticity of supply? How is it measured?*

Ans: Elasticity of supply of a commodity measures changes in the quantity supplied as a result of a change in the price of the commodity. It can be measured as:

$$E_s = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price of the commodity}}$$

$$E = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

89. *Define supply.*

Ans: The supply refers to the quantity of a commodity that a seller is prepared to sell in the market at a given price at a given time.

90. *What are free goods?*

Ans: Free goods are those goods that are available in abundance and these goods, therefore, do not command any price. For example–air, sun shine, water etc.

91. *Name a Governmental Enterprise in India.*

Ans: Food Corporation of India (FCI).

92. *Name a government non-departmental enterprise.*

Ans: Bharat Heavy Electronics Ltd (BHEL).

93. *What is labour in economics?*

Ans: Labour is any type of human activity–physical or mental done with a view to earning money.

94. *Distinguish between product-based division of labour and process-based division of labour.*

Ans: Division of labour refers to the division of total work or amount of labour into a number of parts or works and assigning of each part to the person who is best fit in. It may be of two types:

1. Product based division of labour.
2. Process based division of labour.

Product based division of labour implies specialization in the production of a single complete commodity or service. For example, a farmer in India takes care of all processes in production such as cultivation, sowing of seeds, irrigation, harvesting, selling etc.

On the other hand, process based division of labour refers to the production of a commodity or rendering a service by dividing the whole work into a number of operations or processes and assigning each operation or process to a worker who is expert to do the work. Thus, it means specialization in the single process in the production of a commodity. For example, in a modern tailoring shop, one person cuts the cloth. Another does stitching and another buttons, and so on.

95. *Why is the cost curve always "U" shaped? Give the reasons.*

Ans: Average cost is usually U shaped. At first, the average cost is high due to large fixed cost and small output. As output increases, the fixed cost is thinly spread over the larger number of units produced, and the average cost accordingly falls. This is due to various internal economies and fuller use of indivisible factors. But when diminishing returns sets in due to difficulties of management and limitations of plants and space, the variable costs and therefore average costs start increasing. The lower end of the curve turns up and gives it a U shape. That is why average cost curves are U shaped.

96. *Differentiate between durable and non-durable goods.*

Ans: Durable goods are those goods, which can be put to repeated use whereas non-durable are those goods that can be used only once. Durable goods have long life. Examples of durable goods are TV set, furniture, car etc. Non-durable goods have very short life. Vegetables, fruits, milk etc are the examples of non-durable goods.

97. *Distinguish between labour-intensive and capital-intensive technology of production.*

Ans: Labour intensive technology of production refers to the technique in which more labour per unit of output is used. On the other hand, capital-intensive technology uses more capital per unit of output.

98. *Although water is useful but it is cheap, on the contrary a diamond is not much of use but is very expensive. Give an economic reason for this paradox.*

Ans: Water is available in plenty whereas diamond is scarce. Therefore, water commands no price but diamond is very expensive.

99. *How do you find out whether a particular expenditure is on intermediate goods or final goods?*

Ans: If the expenditure on a product is meant for further production of goods and services or for resale, then it is the expenditure on intermediate goods. But if the expenditure on a particular good is for private consumption or investment, then it is the expenditure on final good.

100. *Define equilibrium point.*

Ans: The point where demand is equal to supply is called the equilibrium point.

101. *What is equilibrium price? How is it determined?*

Ans: The price prevalent at the equilibrium point is called the equilibrium price. According to Marshall, when the demand price is equal to the supply price, the total output produced has no tendency either to be increased or decreased; it is said to be in equilibrium. The illustration below shows how the equilibrium price in the market is determined.

Price of sugar (Rs.)	*Demand (Kg)*	*Supply (Kg)*
20	20	3
25	18	8
30	14	10
36	12	12
52	10	14
65	8	18
70	3	20

The above table shows demand and supply of sugar at different prices. Demand and supply are equal at 12 Kg of sugar. This is the equilibrium point. At this point price of sugar is Rs. 36 kg. Thus the equilibrium price in the market is Rs. 36.

102. *Distinguish between short run and long run.*

Ans: Short run is a time period when some factors are fixed and some variable. Adjustment to demand can only be done by changing the variable factors such as raw materials, labour, power etc. A firm cannot change the amount of factors such as land, machinery, factory building etc. Long run is a time period when all factors are variable. A producer has enough time to expand his business by changing plants and equipments etc.

103. *How is a seller under perfect competition a price taker? What is the relevance of the characteristic that there is large number of sellers in this context?*

Ans: Under perfect competition, the price of the commodity is determined by the equilibrium between demand and supply of the industry. No individual firm can influence the price as he has the insignificant share of the total quantity of a commodity. Thus a firm has to accept the price as determined by the industry. Therefore it is said that a firm under perfect market is a price-taker.

The presence of a large number of buyers and sellers is an important condition of a perfectly

competitive market. It indicates that every buyer and seller is so small relative to the entire market that he cannot affect the market price by changing his purchases or output.

104. *Distinguish between economic rent and transfer earnings.*

Ans: Economic rent is the actual cost and so it is an essential part of the cost of production whereas transfer earning is the opportunity cost. It is not the part of cost of the production. Economic rent is the difference between actual earnings and transfer earnings of a factor, whereas transfer earnings are actual earnings minus rent.

105. *What is economic rent? Can factors other than land also earn rent? Explain briefly.*

Ans: According to classical economists economic rent is the payment for the use of land only. But according to the modern economists, rent is paid not only to land but to all the factors of production. According to them, it is the payment to any factor of production over and above the minimum price (transfer earnings), which it must get.

106. *Give three main features of Ricardian Theory of Rent.*

Ans: The three important features of Ricardian theory of rent are the following:

(*i*) Rent is paid to land only.

(*ii*) Rent is price paid for the use of original and indestructible powers of the soil.

(*iii*) Rent is a differential surplus—the difference between the produce of the superior lands and marginal lands.

107. *Discuss five conditions under which trade unions can raise wages.*

Ans: The conditions under which trade unions can raise wages are the following:

(*a*) When wages are less than the marginal revenue productivity of labour, trade union can get wages raised up to the level of their marginal revenue productivity.

(*b*) When higher wages results in raising productivity, the MRP curve of labour shifts to the right. In this situation, it is possible for the employers and trade unions to maintain the higher level of wage rate.

(*c*) If the increase in costs due to higher wages can be passed on to the consumers in form of higher prices of the commodities, trade unions can raise the wages.

(*d*) When the industry is earning abnormal profits, wages may be raised.

(*e*) If the demand for a particular type of labour in an industry is inelastic, trade unions can easily get the wages raised.

108. *What is derived demand?*

Ans: Derived demand means the demand, which depends upon the demand of other goods and services. For example demand for labour is a derived demand, as it depends upon the demand of final goods produced by labour.

109. *What are real wages?*

Ans: Real wages refer to total quantity of goods and services that can be purchased by a worker with his money wages.

110. *Name the factor, which determines the demand for labour.*

Ans: Demand for labour depends upon the following factors:

1. Marginal productivity of labour.
2. Price of substitutes factors.
3. Demand for the goods, which is being produced.

110. *Distinguish between nominal wages and real wages.*

Ans: Nominal wages are the payments made to labourers for their services in form of money or cash. If a worker gets Rs. 5000/- per month, it is an example of money wages.

Real wages refer to the total wages of a labourer that he gets in form of money and other facilities. Suppose a worker in addition to his money wage, gets some facilities like free education, medical facilities, subsidized houses etc, all this constitute his real wage.

111. *What factors influence real wages?*

Ans: The following factors affect real wages:

(*i*) Price level; (*ii*) Supplementary income; (*iii*) Nature of employment and (*iv*) Future prospects.

112. *Discuss the characteristics of labour as a factor of production.*

Ans: Labour is any type of human activity—physical or mental done with a view to earning a reward. Following are the characteristics of labour:

(*a*) It is a human factor.

(*b*) It is an active factor of production as other factors depend upon labour for their use.

(*c*) Labour is perishable. It cannot be stored.

(*d*) Labour is mobile. A labourer sells his labour not himself.

(*e*) Labour cannot be separated from labourers.

(*f*) The demand for labour is a derived demand.

(*g*) Labour varies in efficiency.

113. *Describe the causes of differences in rates of wages that exist in any country at a particular time.*

Ans: The causes of wage differentials can be classified into two categories:

(a) Wage differentials between different occupations.

(*a*) *Difference in demand for goods*: Demand for labour depends upon the demand for goods in the production of which they are employed. Demand for different commodities is not same. Difference in demand for different goods is an important factor that causes wage differentials.

(*b*) *Expenses on training*: Larger the expenses on training, more is the wage and vice versa.

(*c*) *Supplementary income*: Workers are ready to work at low wages in certain occupations where they can supplement their incomes compared to workers working in those occupations where there are fewer chances for them to supplement their incomes.

(*d*) *Risk of life*: In certain occupations, a great risk of life is involved. Therefore in such occupations, money wages are higher than the wages in less risky occupations.

(*e*) *Social status*: The greater the respect a person enjoys the lower the wages at which he would be ready to work. So wages tend to vary from occupation to occupation.

(*f*) *Future prospects*: Future prospects also vary from occupation to occupation. People are always ready to join occupations, where their future is bright at low wages.

(b) Wage differentials within the same occupation.

(*a*) *Differences in efficiency of labour*: All labourers are not alike. They differ in their efficiency. More efficient workers get better wages as compared to less efficient workers.

(*b*) *Geographical mobility*: Wages differ within the same occupation at different places. A worker earns much more in Delhi than at Kohima.

114. *What does the real flow of income show?*

Ans: Real flow of income shows the flow of goods and services between households and firms.

115. *Does transfer earning enter into national income?*

Ans: Transfer earnings do not enter into national income as these have not been earned but merely transferred by the government to other agencies.

116. *What do you call the assistance given by the government to firms to compensate for the costs?*

Ans: These are called subsidies.

117. *Define domestic factor income.*

Ans: The income generated within the domestic territory of a country by all producers is termed as domestic factor income.

118. *What do you understand by net retained income of resident company abroad?*

Ans: The difference between the retained earnings of foreign companies located in a country and the retained earnings of resident companies located abroad is called as net retained earnings from abroad.

119. *What is sum total of rent, interest and profits?*

Ans: Operating surplus.

120. *Explain the concept of operating surplus.*

Ans: Operating surplus is the income from control and ownership of capital. According to CSO, "Gross output at producer's value less the sum of intermediate consumption, compensation of employees (including labour income of the self-employed), consumption of fixed capital and indirect taxes." Symbolically,

OS = Gross value of output - Intermediate consumption – Consumption of fixed capital – Indirect taxes – Compensation of employees.

Or

OS = Income from property (rent + interest) + Income from entrepreneurship (profit)

121. *What are the components of the compensation of employees?*

Ans: Compensation of employees is mainly divided into the following two components:

(*a*) Wages and salaries, and

(*b*) Social security contributions.

Wages and salaries are the reward for the services rendered by the workers. These may be in kind or in cash. These include:

(*a*) Salary; (*b*) commission; (*c*) bonus; (*d*) dearness allowance; (*e*) housing allowance; (*f*) rent free accommodation; (*g*) free medical facilities; (*h*) car allowance etc.

Compensation of employees also includes social security contributions made by the employers to their employees. These are provident fund, pensions, casuality or life insurance etc.

122. *What do you understand by factor incomes?*

Ans: Income earned by factors of production during the process of production is known as the factor incomes.

123. *Briefly explain the concept of a mixed income of the self-employed.*

Ans: It is the income of self-employed persons like doctors, lawyers, chartered accountants, barbers, shopkeepers, farmers etc. These persons work both as producers and as suppliers of factor services to themselves independently. Some part of their income is wage income and the rest relates to capital income. Therefore their income is called as mixed income. Mixed income is generated in various sectors of the economy. The largest part of the mixed income is generated in the primary sector of the economy. Mixed income is included in the measurement of national income.

124. *What is compensation of employees?*

Ans: Compensation of employees refers to all payments made by employers to their employees in form of wages and salaries, both in kind and cash, and contribution to social security schemes.

125. *What are corporate taxes?*

Ans: Taxes levied on company's income are called corporate taxes.

126. *Give one example each of voluntary and compulsory transfers.*

Ans: *Voluntary transfers*: Governments grants.

Compulsory transfers: Wealth tax, estate duty.

127. *In which sectors of the Indian economy expenditure or commodity flow method of national income estimation is used?*

Ans: Construction sector.

128. *Name four inputs used in Indian agriculture.*

Ans: Seeds, fertilizers, water, and electricity.

129. *Name the sub-sectors of the secondary sectors.*

Ans: Manufacturing (registered and unregistered), electricity, gas and water supply, construction and trade, hotels and restaurants.

130. *Name the sub-sectors of the primary sector.*

Ans: Agriculture, forestry and logging, fishing, mining and quarrying and registered manufacturing.

131. *How is net-value added by registered manufacturing estimated in India?*

Ans: The actual figures of compensation of employees, interest, rent and profits relating to different enterprises in the manufacturing sector are aggregated to get the value added.

132. *Who publishes 'National Accounts Statistics in India'?*

Ans: Central Statistical Organization, New Delhi.

133. *Name the sectors of the Indian economy for which value added approach is used for measuring their contribution to national income.*

Ans: Agriculture, forestry and logging, fishing, mining and quarrying and registered manufacturing.

134. *Name the sub-sectors into which the Indian economy is divided for the purpose of estimation of domestic product.*

Ans: 1. Primary Sector

(*i*) Agriculture, forestry and fishing

(*ii*) Mining and quarrying

2. Secondary sector

(*i*) Manufacturing

(*ii*) Electricity, gas and water supply

(*iii*) Construction

(*iv*) Trade, hotels and restaurants

3. Tertiary sector

(*i*) Transport, storage and communication

(*ii*) Financing, insurance, real estate and business services

(*iii*) Community and personal services.

135. *Name four major activities of the tertiary sector of an economy.*

Ans: Banking and Insurance; transport; trade and hotels and real estate, ownership of dwellings, public services.

136. *What do you understand by acquisition of financial assets abroad? Give one example.*

Ans: Acquisition of financial assets abroad means financial assets or capital such as shares and bonds etc held by residents and government of a country abroad. For example, loans given to foreign countries.

137. *What do you understand by the term value added? What is its significance in national accounting?*

Ans: Value added is the difference the value of goods and cost of inputs used in producing them. In other words, the value created at different stages of production is called value added. It can be calculated by deducting intermediate consumption from its value of output. Symbolically,

Value added = Value of output – Intermediate consumption

The concept has great significance in national income accounting. Double counting is the main problem involved in the calculation of national income. In order to avoid this problem, value added method of measuring national income is used.

138. *What is meant by intermediate expenditure?*

Ans: The expenditure on non-factor inputs such raw materials; fuel etc, for the purpose of production is called intermediate expenditure.

139. *What does capital transfer mean?*

Ans: Capital transfers are those transfer payments that create physical assets and thus, promote capital formation. For example, investment allowance to a production unit or compensation for war damages by the government to households etc.

140. *Define the concept of producers' goods.*

Ans: Producer's or capital goods are the goods used for the production of final consumer goods. These goods do not directly satisfy human wants but help in their production. The demand for capital goods is called derived demand. Factory building, plant, equipment, machinery, dams, canals, roads, bridges, powerhouses, etc are the examples of capital goods. Capital goods can be classified into two types: (*i*) Single-use capital goods, and (*ii*) Durable capital goods.

141. *What is meant by tax?*

Ans: Tax is a compulsory payment to the government by the households and enterprises of a country.

142. *Is income equal to savings plus consumption?*

Ans: Yes.

143. *What is meant by net exports?*

Ans: Net export is the difference between the exports of a country to the rest of the world and imports from the rest of the world.

144. *Give an example of close substitute.*

Ans: Tea and coffee are close substitutes.

145. *Why is current transfer from abroad not a part of national income?*

Ans: Current transfers from abroad not a part of national income because these do not contribute to the flow of goods and services in the economy.

146. *Distinguish between depression and recession.*

Ans: Depression is a stage when the business confidence is at its lowest level. Investment, employment, output, income, and prices — all are at low level. Recession is a stage when there

is cut in investment, and in employment. There is fall in incomes, purchasing power and hence demand. Prices may begin to fall.

147. *What do blue collar and white-collar workers mean?*

Ans: A class of workers who are engaged in manual labour is called blue-collar workers and the workers who are engaged in mental labour are called white-collar workers.

148. *What is the relationship between the rate of interest and price of bonds?*

Ans: Interest rates and bond prices are inversely related. Suppose a person owns a bond of the value of Rs.1000 carrying 8% interest. His yearly income is Rs.80. Now further suppose that the rate of interest rises to 10%. The interest income of the bondholder will still be Rs.80, but the value of the bond will fall to Rs.800. It is because that Rs.800 will give an income of Rs.80 at the 10% rate of interest. Reverse will happen, if the rate of interest falls.

149. *What are the functions of primary, secondary and tertiary sectors in the economy?*

Ans: Primary, secondary and tertiary sectors are the three important sectors of an economy. Primary sector produces mainly agricultural products, whereas secondary sector produces manufactured goods and tertiary sector provides various services to the economy.

150. *State the opinion of Karl Marx on profits.*

Ans: Karl Marx in his famous book 'capital' published in 1867 gave an explanation of profit in terms of 'the theory of surplus value'. According to him, value is created only by labour. But the labour gets less than the value it creates. In other words, the entrepreneur who hires labour pays less to labour in form of wages as compared to value created by it. The difference is termed as surplus value, which is actually created by labour but goes to entrepreneur's pocket. Karl Marx says the ownership of the means of production by the entrepreneurs makes it possible for them to exploit labour.

151. *Mention six different methods of creating utility.*

Ans: Utility in a good can be created by a number of ways. These are:

1. Form utility; 2. Place utility; 3. Time utility; 4. Knowledge utility; 5. Possession utility; 6. Service utility.

152. *What do you mean by the term economic efficiency?*

Ans: Economic efficiency refers to the process of operation of free market economy efficiently. As resources are scarce; they are to be utilized in such a way that there is no wastage of resources. It is therefore important to decide whether decisions regarding—what to produce, how to produce and for whom to produce–are economically efficient.

153. *What is productive efficiency?*

Ans: Productive efficiency means producing maximum level of output from given amount of resources.

II
SOLVED NUMERICAL PROBLEMS

1. *From the table below, calculate price elasticity of demand if price falls from Rs. 5 to Rs. 3 per unit.*

Price	*Demand*
6	*3000*
5	*4500*
4	*5500*
3	*6000*

Solution:

$$e_p = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

$$\Delta q = 6000 - 4500 = 1500$$

$$\Delta p = 3 - 5 = 2$$

$$\therefore \quad e_p = \frac{1500}{2} \times \frac{5}{4500} = 0.82$$

2. *Given that the quantity previously demanded was 100 units, decrease in quantity demand is 5 units, increase in price is Rs. 5 and price elasticity of demand is 1.2; calculate the price before the change.*

Solution:

$$e_p = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

Original quantity $q = 100$

Change in price $= 5$

Change in quantity $= 5$

Elasticity $= 1.2$

$$\therefore \quad 1.2 = \frac{5}{5} \times \frac{p}{100}$$

$$\therefore \quad p = 100 \times 1.2 = 120$$

The price before change was Rs. 120.

3. *Calculate elasticity of demand (i) by using total outlay method, (ii) percentage method.*

Price	*Total expenditure*
10	*1000*
8	*1200*

Solution: (*i*) According to total outlay method, $e > 1$, because total expenditure is more after fall in price. Thus demand is elastic.

(*ii*) We have to calculate quantities at two prices as shown under:

Price	*Quantity*	*Total expenditure*
10	100	1000
8	150	1200

Applying the formula,

$$\therefore \qquad e_p = \frac{50}{2} \times \frac{10}{100} = 2.5$$

Therefore, $e > 1$.

4. *Draw a demand schedule for a commodity whose price elasticity of demand is unity.*

Solution:

Price	*Total expenditure*
10	10
15	10

5. *There are three firms in the market. The supply schedule for the market and that for firms A, B and C are given below. Prepare the supply schedule of firm C.*

Price	*Firm A*	*Firm B*	*Firm C*	*Market supply*
10	*0*	*25*		*35*
20	*10*	*30*		*60*
30	*20*	*35*		*85*
40	*30*	*40*		*110*
50	*40*	*45*		*135*
60	*50*	*50*		*160*

Solution:

Price	*Firm A*	*Firm B*	*Firm C = MS — (A + B)*	*Market supply (MS)*
10	0	25	35 – (25 + 0) = 10	35
20	10	30	60 – (30 + 10) = 20	60
30	20	35	85 – (35 + 20) = 30	85
40	30	40	110 – (40 + 30) = 40	110
50	40	45	135 – (45 + 40) = 50	135
60	50	50	160 – (50 + 50) = 60	160

6. *Complete the following table:*

Units of labour	*Total product*	*Average product*	*Marginal product*
1	*50*		
2	*90*		
3	*120*		
4	*140*		
5	*150*		
6	*150*		
7	*140*		
8	*120*		

Solution:

Units of labour	*Total product*	*Average product*	*Marginal product*
1	50	50	50
2	90	45	40
3	120	40	30
4	140	35	20
5	150	30	10
6	150	25	0
7	140	20	–10
8	120	15	–20

7. *From the following data calculate, marginal cost.*

Output	*1*	*2*	*3*	*4*	*5*	*6*
Total cost	*30*	*48*	*60*	*80*	*90*	*96*

Solution: $MC = TC_n - TC_{n-1}$

For example, MC for 2nd unit = 48 – 30 = 18

Output	*Total cost*	*Marginal cost*
1	30	30
2	48	18
3	60	12
4	80	20
5	90	10
6	96	6

8. *From the following table, calculate marginal revenue and average revenue.*

Output: 1 2 3 4 5

Total revenue: 10 18 24 28 30

Solution:

Output	*Total revenue*	*Marginal revenue*	*Average revenue*
1	10	10	10
2	18	8	9
3	24	6	8
4	28	4	7
5	30	2	6

9. *From the table below calculate (i) AFC, and (ii) AVC*

Output: 0 1 2 3 4 5 6

Total cost: 60 78 90 102 112 120 126

Solution:

Output	*TC*	*TFC*	*TVC*	*AFC*	*AVC*
1	*2*	*3*	*4 = 3 – 2*	*5 = 3/1*	*6 = 4/1*
0	60	60	0	–	–
1	78	60	18	60	18
2	90	60	30	30	15
3	102	60	42	20	14
4	112	60	52	15	13
5	120	60	60	12	12
6	126	60	66	10	11

10. *Calculate TR, AR, and MR from the table.*

Price: 1 2 3 4 5 6 7

Demand: 100 90 80 70 60 50 40

Solution:

Price	*Demand*	*TR*	*AR*	*MR*
1	*2*	*3 = 2 × 1*	*4 = 3/2*	*5*
1	100	100	1	–
2	90	180	2	80
3	80	240	3	60
4	70	280	4	40

Contd....

5	60	300	5	200
6	50	300	6	0
7	40	280	7	–20

11. *From the table below income-consumption schedule, calculate — (i) savings (ii) apc and (iii) mpc.*

Income: 0 100 200 300 400

Consumption: 60 110 150 180 200

Solution:

Income (Y)	*Consumption (C)*	*Savings (S)*	*Apc* $= \frac{C}{Y}$	*Mpc* $= \frac{\Delta C}{\Delta Y}$
1	2	3 = 1 – 2	4 = 2/1	5
0	60	–60	–	–
100	110	–10	1.10	0.5
200	150	50	0.75	0.4
300	180	120	0.60	0.3
400	200	200	.050	0.2

12. *What will be the value of the multiplier if mps is 0.4?*

Solution: $$K = \frac{1}{mps} = \frac{1}{4} = 2.5$$

13. *If an economy's investment increases by Rs. 10 crores. As a result income increases by Rs. 50 crores. What is the value of the multiplier?*

Solution: $$K = \frac{\Delta Y}{\Delta I} = \frac{50}{10} = 5$$

14. *Calculate mps from the following data:*

Y	*C*	*S*
1	*2*	*3 = 1 – 2*
1500	*1000*	*500*
2000	*2000*	*0*

Solution: ∴ $$mps = \frac{\Delta S}{\Delta Y} = \frac{500}{500} = 1$$

15. *If size of multiplier is 2.5, what amount of new investment is required to be made in the economy to generate additional income of Rs. 500 crores?*

Solution: $$K = \frac{\Delta Y}{\Delta I}$$

or $\Delta Y = K.\Delta I$

$$\Delta I = \frac{\Delta Y}{K}$$

$$= \frac{500}{2.5}$$

Thus, new investment of Rs.200 crores will be generated.

16. *Calculate aps, if apc is 0.80*

Solution: We know that apc + aps = 1

Therefore, $aps = 1 - apc$

$= 1 - 0.80 = 0.20$

17. *Calculate K, if mpc is 0.75*

Solution: We know that,

$$K = \frac{1}{1 - mpc} = \frac{1}{1 - 0.75} = 4$$

Therefore, K = 4.

18. *Calculate mpc, if value of K is 3.*

Solution: $$K = \frac{1}{1 - mpc}$$

$$3 = \frac{1}{1 - mpc}$$

$$3\ (1 - mpc) = 1$$

$$3 - 3mpc = 1$$

$$-3mpc = 1 - 3$$

$$-3mpc = -2$$

$\therefore$ $$mpc = \frac{2}{3} = 0.67$$

19. *If mps = 0.4, ΔI = Rs. 100 crores; find the values of (i) ΔI (ii) ΔC and (iii) ΔS*

Solution: We know that,

(*i*) $$K = \frac{1}{mps}$$

and $\Delta Y = K.\Delta I$

$\therefore$ $$\Delta Y = \frac{1}{mps} \times \Delta I$$

APPENDICES

$$= \frac{1}{0.4} \times 100 = 250$$

(*ii*) $\Delta C = \Delta Y \times mpc$ ($\because mps = 1 - mps = 0.6$)

$= 250 \times 0.6 = 150$

(*iii*) $\Delta S = \Delta Y \times mps$

$= 250 \times 0.4 = 100$

20. *Firm A sold goods to firm B worth Rs. 100, firm B sold the same with some modifications to firm C for Rs. 160, firm C sold those goods for final consumption to firm D for Rs. 200. Calculate the value added by each firm.*

Solution: We know that,

Value added = value of output – intermediate consumption.

Firm	*Value of output*	*cost*	*Value added*
A	100	0	100 – 0 = 100
B	160	100	100 – 100 = 60
C	200	160	200 – 160 = 40
			Total value added = 200

To check: Total value of output – total cost = total/gross value added. Thus,

(100 + 160 + 200) – (0 + 100 + 160) = 200

21. *A sells to B for Rs. 50 and to C for Rs. 30; B sells to private consumption for Rs. 40 and exports for Rs. 30; C sells to public consumption for Rs. 25 and accumulates unsold stocks worth Rs. 25. Find value added by industry of origin and also of different components of final expenditure on national product.*

Solution:

Firm	*Value of output*	*Cost*	*Value added*
A	Goods sold to B = 50		
	Goods sold to C =	0	80 – 0 = 80
B	Sold Pr. C = 40		
	Goods exported = $\frac{30}{70}$	50	70 – 50 = 20
C	Sold Pu. C = 25		
	Unsold stock = $\frac{25}{50}$	30	50 – 30 = 20
			Total value added = 120

Components of final expenditure:

1.	Expenditure on private consumption:	40
2.	Expenditure on public consumption:	25
3.	Exports:	30
4.	Unsold stock of goods:	25
		100

22. *From the data given below, find out the following:*

(a) value of output at market prices,

(b) Gross value added at market prices,

(c) Net value added at market prices,

(d) Net value added at factor cost.

Heads	*Amount*
1. Opening stock	*200*
2. Closing stock	*400*
3. Purchase of raw material	*700*
4. Sales	*1600*
5. Corporation tax	*100*
6. Undistributed profits	*50*
7. Dividend	*50*
8. Rent	*150*
9. Interest	*100*
10. Depreciation	*200*
11. Indirect tax	*150*
12. Subsidies	*50*
13. Wages and salaries	*350*

Solution:

(*a*) Value of output at market prices:

Payments	*Rs.*	*Receipts*	*Rs.*
Purchase of raw material	700	Sales	1600
Corporation tax	100	Change in stocks	200
Undistributed profits	50		
Dividends	50		
Rent	150		
Depreciation	200		

Contd....

Net indirect taxes	100		
Wages and salaries	350		
Interest	100		
	1800		1800

(*b*) Gross value added at market prices = value of output – intermediate consumption

= 1800 – 700 = 1100

(*c*) Net value added at market prices = gross value added at market prices – depreciation

= 1100 – 200 = 900

(*d*) Net value added at factor cost = net value added at market prices – net indirect taxes (indirect taxes - subsidies)

= 900 – (150-50) = 800

23. *Find out domestic product at market price from the following data:*

Heads	*Amount*
(*i*) Consumption of fixed capital	50
(*ii*) Net indirect taxes	30
(*iii*) Value of output	750
(*iv*) Value of intermediate consumption	300

Solution: NDP_{mp} = value of output – depreciation – value of intermediate consumption

= 750 – 50 – 300 = 400.

24. *Calculate operating surplus :*

Heads	*Amount*
(*i*) Compensation of employees:	300
(*ii*) Indirect taxes	200
(*iii*) Consumption of fixed capital	100
(*iv*) Subsidies	50
(*v*) Gross domestic product at market price	600

(Figures are in crores)

Solution: Operating surplus = Gross domestic product at market price – compensation of employees – consumption of fixed capital – indirect taxes + subsidies

= 600 – 300 – 100 – 200 + 50 = 50 crores

25. *Calculate operating surplus:*

	Heads	*Amount*
(*i*)	Wages and salaries:	3000
(*ii*)	Consumption of fixed capital	400
(*iii*)	Subsidies	100
(*iv*)	Gross value added at market prices	7000

(Figures are in crores)

Solution: OS = (*v*) – (*iii*) – (*ii*) – (*i*) + (*iv*)

= 7000 – 400 – 700 – 3000 + 100

= 3000 crores.

26. *Calculate compensation of employees:*

(a) Commission paid to staff (12); (b) Traveling allowance paid (18); (c) Employer's contribution to social security (15); (d) Wages and salaries (155); (e) Interest free loan to staffs (20)

(Figures are in thousands)

Solution: Compensation of Employees

= (*a*) + (*c*) + (*d*)

= 12 + 15 + 155

= 182 thousand.

27. *Calculate compensation of employees:*

(a) Bonus paid to staff (35); (b) Free medical facilities (60); (c) Employer's contribution to social security (40); (d) Wages and salaries (350); (e) Employees' contribution to provident fund (30)

(Figures are in thousands)

Solution: Compensation of Employees = (*d*) + (*c*) + (*b*) + (*a*)

= 350 + 40 + 60 + 35

= 485 thousand.

28. *From the information below, find out the value of net national product.*

	Heads	*Amounts in Rs. crores*
1.	Gross national product at market prices	81388
2.	Depreciation	3205

Solution:

NNP = GNP – Depreciation

NNP = 81388 – 3205 = Rs. 781833 crores.

APPENDICES

29. *From the information below, calculate- (i) NDP_{mp} and (ii) NDP_{fc}.*

	Heads	*Amount in Rs. crores*
1.	Gross national product at market prices	97503
2.	Depreciation	5699
3.	Net factor income from abroad	–201
4.	Net indirect taxes	10576

Solution: (*i*) NDP_{mp} = GNP_{mp} – Net income from abroad – consumption of fixed capital

NDP_{mp} = 97503 – (-201) – 5699 = Rs. 92005 crores.

(*ii*) NDP_{fc} = NDP_{mp} – Net indirect taxes

= 92005 – 10576 = Rs. 81429 crores

30. *Calculate (i) GDPmp; (ii) Personal income; (iii) personal disposable income*

	Heads	*Amount in Rs. crores*
1.	National income	64500
2.	Net indirect taxes	5500
3.	Corporate taxes	1200
4.	Part of N.I accuring to government	1550
5.	Net factor income from abroad	–150
6.	Depreciation	7250
7.	Interest on national debt	450
8.	Undistributed Corporate profits	2500
9.	Personal taxes	1650
10.	Net current transfers from abroad	–200
11.	Transfer payment	1600

Solution: GDP_{mp} = N.I. + Net indirect taxes + depreciation – net factor income from abroad

= 64500 + 5500 +7250 – (–150)

= Rs. 77400 crores.

Personal income = NI – corporate taxes – part of national income arising to government sector + interest on national debt – undistributed profit + current transfers from abroad + transfer payments by govt.

= 64500 – 1200 – 1550 + 450 – 2500 + (–200) + 1600

= Rs. 61100 crores.

Personal disposable income = Personal income – Direct personal taxes
= 61100 – 1650
= Rs. 59450 crores.

31. *Calculate NNP for 2005 at constant prices:*

Year	*NNP at current prices*	*Price index*
2000	40000	100
2005	72000	150

Solution: NNP at constant prices for 2005:

$$\text{NI at constant prices} = \frac{\text{NI at Current prices}}{\text{Price index}} \times 100$$

$$= \frac{72000}{150} \times 100 = 48000$$

32. *Calculate (i) GNP at market prices; (ii) private income; (iii) personal income.*

Heads	*Amount in Rs. crores*
1. GDP_{fc}	370
2. Income from domestic product accruing to private sector	290
3. Net current transfers from abroad	50
4. Net indirect taxes	60
5. Net other current transfers from abroad	35
6. Net factor income from abroad	–30
7. Saving of the private corporate sector	25
8. Corporation tax	5

Solution:

GNP_{mp} = (1) + (4) + (6)
= 370 + 60 + (–30) = Rs. 400 crores.

Private income = (2) + (3) + (5) + (6)
= 290 + 50 + 35 + (–30) = Rs. 345 crores.

Personal income = Private income – (7) – (8)
= 345 – 25 – 5 = Rs. 315 crores.

33. *Estimate GNP at market price.*

Solution:

$$GNP_{mp} = (i) + (ii) + (iii) + (iv) + (v) - (vi)$$
$$= 50000 + 15000 + 10000 + 2000 + 5000 - 7000$$
$$= \text{Rs. } 75000 \text{ crores.}$$

34. *Estimate GDP at factor cost by expenditure and income methods from data given below.*

Heads	*Amount in Rs. crores*
1. Compensation of employees	35290
2. Govt. final consumption expenditure	11041
3. Private final consumption expenditure	71366
4. Operating surplus	15794
5. Gross fixed capital formation	21001
6. Change in stocks	5143
7. Mixed income of self employed	37135
8. Consumption of fixed capital	6651
9. Net indirect taxes	12203
10. Net exports	–1478

Solution: Expenditure method

$$GDP_{fc} = (2) + (3) + (5) + (6) + (10) - (9)$$
$$= 11041 + 71366 + 21001 + 5143 + (-1478) - 12203$$
$$= \text{Rs. } 94870 \text{ crores.}$$

Income method

$$GDP_{fc} = (1) + (4) + (7) + (8)$$
$$= 35290 + 15794 + 37135 + 6651$$
$$= \text{Rs. } 94870 \text{ crores.}$$

35. *An economy produces two goods: T-shirts and cell phones. The following table summarizes its PPC. Calculate the marginal opportunity costs of T-shirts at various combinations. (NCERT)*

T-shirts (in millions)	*Cell phones (in thousands)*
0	90000
1	80000
2	68000
3	52000
4	34000
5	10000

Solution:

T-shirts (in millions)	*Cell phones (in thousands)*	*Marginal opportunity cost*
0	90000	–
1	80000	10000
2	68000	12000
3	52000	16000
4	34000	18000
5	10000	24000

36. *A person's total utility schedule is given below. Derive marginal utility schedule.*

Amount Consumed	*Total utility*
0	0
1	10
2	25
3	38
4	48
5	55

Solution:

Amount Consumed	*Total utility*	*Marginal utility*
0	0	0
1	10	10
2	25	15
3	38	13
4	48	10
5	55	7

37. *Originally, a product was selling for Rs. 10 and the quantity demanded was 1000 units. The product price changes to Rs. 14 and as a result the quantity demanded changes to 500 units. Calculate the price elasticity.*

Solution:

$$e_p = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

$$= \frac{500}{4} \times \frac{10}{1000}$$

$$= 1.25$$

38. *Calculate the APPs and MPPs of a factor from the following table.*

Level of factor employment	*TPP*
0	0
1	5
2	12
3	20
4	28
5	35
6	40
7	42

Solution:

Level of factor employment	*TPP*	*APP*	*MPP*
0	0	–	–
1	5	5	5
2	12	6	7
3	20	6.6	8
4	28	7	8
5	35	7	7
6	40	6.6	5
7	42	6	2

39. *A firm is producing 20 units. At this level of output, the ATC and AVC are respectively equal to Rs. 40 and Rs. 37. Find out the total fixed cost of this firm.*

Solution: We know that, $AC = AVC + AFC$

Or, $AFC = AC - AVC$

$= 40 - 37 = 3$

$$AFC = \frac{TFC}{Q}$$

$\therefore$ $TFC = AFC \times Q$

$= 3 \times 20 = 60$

Total fixed cost is Rs. 60.

III
NBSE QUESTION PAPERS
[1995–2005]

2005

1. What is gross domestic product?
2. What is consumption?
3. What is derived demand?
4. What is fiscal policy?
5. What is meant by value added?
6. What is meant by supply schedule?
7. What is meant by ex-post saving?
8. What does it mean when there is a shift of the demand curve to the right?
9. Define capital formation.
10. Define capital transfer.
11. Define equilibrium price.
12. Define subsidy.
13. Does the household sector produce goods and services?
14. Can income from smuggling be included in national income accounting?
15. Communication belongs to which producing sector?
16. Give an example of variable cost.
17. Is the expenditure on research and development an example of intermediate consumption?
18. Is windfall profit a part of national income?
19. Under what title does the CSO publish the annual national income statistics?
20. State Say's law of market.
21. Can non-insurable risk be covered by insurance company? Why?
22. Distinguish between stock and flow.
23. Distinguish between personal income and disposable income.
24. Distinguish between microeconomics and macroeconomics.
25. Differentiate between money cost and real cost.
26. Name the two types of expenditure that are included from the expenditure method.
27. How can the scale of production be raised in the long run?
28. What is meant by mixed income of self-employed?
29. What is meant by propensity to consume?
30. What are the main components of aggregate demand?

31. Distinguish between product based division of labour and process based division of labour.
32. Distinguish between gross interest and net interest.
33. Explain briefly the methodology adopted in India for estimating the contribution of unregistered manufacturing.
34. Explain the central problem of an economy.
35. How does excess demand affect price?
36. Name three types of subsidies given by the government.
37. Name the three producing enterprises classified under industrial sector with examples.
38. What is meant by compensation of employees? What are its components?
39. Why the average cost curve is U-shaped in the short run?
40. Why does the demand curve slope downwards?
41. How is income generated in the production process?
42. State five precautions to be taken while estimating national income by income method.
43. Explain the problem of double counting.
44. State five necessary conditions for perfect competition to prevail in a market.
45. From the following cost function of a firm given below find:
    (*i*) TVC, (*ii*) AFC, (*iii*) AVC, (*iv*) ATC, (*v*) MC

Output	0	1	2	3	4	5	6
TC	60	90	100	105	115	135	180
TFC	60	60	60	60	60	60	60

2004

1. Define the concept of domestic income.
2. What is meant by market in economics?
3. What are transfer payments?
4. What is deflationary gap?
5. Define the concept of producers' goods.
6. What is meant by tax?
7. Is income equal to savings plus consumption?
8. What is meant by opportunity cost?
9. What is meant by shift of the supply curve?
10. Who prepared the first national income of India before independence?
11. What is meant by net exports?
12. What is meant by excess demand?
13. Give an example of close substitute.

14. What is meant by GNP?
15. Define compensation of employees.
16. What is multiplier?
17. Why is current transfer from abroad not a part of national income?
18. What is meant by inductive method?
19. Name the two types of economies in which oligopoly market structure in the non-farm sector generally found.
20. Give two methods of economic analysis.
21. What are market operations?
22. What are the factors that affect the elasticity of demand for a commodity?
23. What is meant by producers' goods and consumers' goods?
24. Distinguish between depression and recession.
25. Name four sub-sectors in primary sector.
26. What is meant by value of output at factor cost?
27. What is meant by blue collar and white collar workers?
28. What are the two methods of avoiding double counting?
29. What is the relationship between the rate of interest and the price of bonds?
30. Show the diagrammatic representation of the relationship between MC and AC.
31. Explain the economic interdependence of enterprises in modern economies.
32. State six main difficulties of calculating the national income in India.
33. What is meant by contraction and expansion of demand?
34. How can fiscal policy influence aggregate demand?
35. Differentiate between positive statement and normative statement.
36. What are the functions of primary, secondary and tertiary sectors in the economy?
37. What is the relationship between TR, MR and AR under imperfect competition?
38. State the opinion of Karl Marx on profits.
39. Give three items which are not included in the estimation of national income.
40. Mention six different methods of creating utility.
41. With the help of a diagram explain the price elasticity of demand.
42. What are the chief components of final expenditure? Briefly describe each of them.
43. Discuss the modern theory of rent.
44. Explain the law of variable proportions with suitable diagram.
45. Discuss the value added method of measuring national income.
46. Explain briefly net factor income from abroad. Name its components.

2003

1. Define an open economy.
2. What is meant by production process?
3. What is consumption of fixed capital?
4. What are savings?
5. Name the central organization which prepares the official estimates of national income in India.
6. What are Giffen's goods?
7. Define elasticity of supply.
8. Define Ricardian theory of rent.
9. What are indirect taxes?
10. What is meant by factor income?
11. What is per capital income?
12. Define the concept "compensation of employees."
13. Who made the first attempt to measure the national income of India?
14. Under which market does uniformity of price exist?
15. What is national income accounting?
16. What is the shape of a demand curve?
17. When is demand said to be inelastic?
18. What is interest?
19. Can trade unions raise wages?
20. How is price of a commodity determined in a market?
21. What are the components of domestic factor incomes?
22. Mention two sources of gross domestic capital formation.
23. How does an economic problem arise?
24. What happens to demand when there is a contraction in demand?
25. What are transfer earnings?
26. Differentiate between production for exchange and production for self consumption.
27. Distinguish between current transfers and capital transfers.
28. Why is it important to measure the value of goods and services produced?
29. Distinguish between real wages and nominal wages.
30. What is average propensity to consume.
31. Name the three producing sectors in an economy.
32. What are considered as capital losses?

33. Illustrate with a diagram the law of demand.
34. Identify the subsectors in the secondary sector.
35. Why is the sale of second hand goods not included in current production?
36. Differentiate between deductive and inductive method of constructing economic theories.
37. What factors determine demand?
38. State the uncertainty theory of profit.
39. How can fiscal policy influence aggregate demand?
40. Explain the importance of national income studies.
41. Explain the components of compensation of employees.
42. Explain the features of monopoly.
43. Explain the concept-deficient and excess demand.
44. Does the intermediate consumption of the household sector and government sector differ? Explain.
45. Bring out the relationship between average cost and marginal cost with the help of a suitable diagram.
46. What precautions have to be taken while calculating national income according to the income method?

2002

1. What is macro economics?
2. What are explicit costs?
3. Define Real Wages.
4. What is value added?
5. What are inferior goods?
6. State Say's law of market.
7. What is meant by consumption function?
8. Define production.
9. What do you mean by national income accounting ?
10. Define G.N.P. at market price.
11. What are capital goods?
12. Name the major economic problems.
13. What is economic rent?
14. Define the Law of supply.
15. Distinguish between economic and non-economic goods.
16. What do you understand by production boundary?

17. Write short note on mixed income of the self employed.
18. Explain the problem of double counting with a suitable example.
19. Distinguish between personal income and personal disposable income.
20. Give a brief sketch of the estimation of national income in India.
21. Why does the demand curve slope downwards?
22. Explain the relationship between average cost and marginal cost with the help of a suitable diagram.
23. Explain the characteristics of monopolistic competition.
24. Write a note on the concept of operating surplus.
25. What is deductive method? Give two merits of deductive method.
26. State and explain the four necessary conditions for perfect competition to prevail in the market.
27. Write a note on Quasi-rent.
28. Distinguish between extension of demand and increase in demand.
29. Explain the difficulties of measurement of national income.
30. Explain briefly the production or value added method of measuring national income.
31. Explain briefly the Ricardian theory of rent.
32. What is price elasticity of demand? How would you measure price elasticity of demand by the total outlay method?
33. With the help of a suitable diagram explain the concept of 'inflationary gap.'

2001

1. Define an economy.
2. Define economic goods.
3. What is capital transfers?
4. Define mixed income.
5. What is liquidity trap?
6. Define windfall profit.
7. What is meant by GDP?
8. Define imputed rent.
9. What is equilibrium point?
10. What is capital formation?
11. Define net value added at factor cost.
12. Define break-even point.
13. What is macro economics?

14. Explain the four main features of socialism.
15. What is equilibrium price? How is it determined in the market?
16. Write short note on GNP at market prices.
17. Explain the main features of the Ricardian theory of Rent.
18. Discuss briefly the relationship between Primary Sectors and Secondary Sectors.
19. What is labour? What are its pecularities?
20. Why does the demand curve slope downwards?
21. Explain in brief the investment multiplier.
22. Explain the nature of Production process.
23. What is deductive method? What are its merits and demerits?
24. Why is the cost curve always "U" shaped? Give the reasons.
25. Distinguish between personal income and personal disposable income.
26. Differentiate between monopoly and monopolistic competition.
27. Explain the important components of compensation of employees.
28. State the Law of Supply. What are the factors that determine the supply of a commodity?
29. What are the methods of measuring the national income? What precautions are to be taken while calculating National Income by income method?
30. What is demand deficiency? Discuss briefly the various measures to rectify it.
31. What is liquidity preference? Explain Keyne's liquidity preference theory of interest.
32. Describe the expenditure method of calculating National Income.

2000

1. Define production process.
2. What are primary inputs?
3. What are quasi-corporate enterprises?
4. What is double counting?
5. What is meant by private income?
6. What are indirect taxes?
7. What is opportunity cost?
8. What is production possibility curve?
9. Define mixed income.
10. What are factor income?
11. What is Keynes psychological law of consumption?
12. What is inflationary gap?

13. Define marginal propensity to save (MPS).
14. What is meant by open market operations?
15. Explain the concept of operating surplus.
16. How is income generated in the production process?
17. Write a note on the concept of 'Production Boundary.'
18. Differentiate between durable and non-durable goods.
19. Distinguish between labour intensive and capital intensive technology of production.
20. Distinguish between GNP at factors cost and NDP at factor cost.
21. Write a note on Quasi-Rent.
22. Differentiate between deductive and inductive methods of constructing economic theories.
23. Explain the relationship between Domestic Income and National Income.
24. Explain briefly the precaution that should be taken while estimating National Income by income method.
25. Write a note on GNP a Market price.
26. Explain the relationship between marginal product and average product.
27. Distinguish between extension of demand and increase in demand.
28. Explain the features of perfect competition.
29. What are the various methods of calculating National Income? How is National Income calculated by value added method?
30. Define real wages. Explain briefly the factors which determine real wages.
31. Explain how the break-even point can be derived with the help of consumption curve.
32. Differentiate between monopoly and monopolistic competition.
33. Explain with suitable diagrams the relationship between Average Total Cost curve, Average Variable Cost curve, and Marginal cost curve.

1999

1. Define an economy.
2. Define production.
3. Give two examples of private corporate enterprise.
4. What is meant by national income at current prices?
5. Define dividend.
6. What are transfer payments?
7. Name the three methods of measuring national income.
8. What are Giffen goods?
9. Which type of the enterprise form the tertiary sector.

10. Who prepared the first estimate on national income for the economy?
11. What is the Say's law of Markets?
12. What is meant by consumption function?
13. What is meant by marginal propensity of consume?
14. What is meant by fiscal policy?
15. What is the difference between a closed and an open economy?
16. Although water is useful but it is cheap, on the contrary a diamond is not much of use but is very expensive. Give an economic reason for this paradox.
17. Distinguish between economic and non-economic goods.
18. What is meant by consumption of fixed capital?
19. With the help of a suitable diagram show the relationship between Average Cost and Marginal Cost.
20. Explain the total outlay method for the measurement of elasticity of demand.
21. State the Law of Variable Proportion.
22. How do you find out whether a particular expenditure is on intermediate goods or final goods.
23. Explain the problem of double counting.
24. What precautions are to be taken while calculating national income by the value added method?
25. Differentiate between personal income and personal disposable income.
26. Give a brief outline of estimating national income in India.
27. Differentiate between nominal and real wages.
28. Differentiate between private income and personal income.
29. What is Law of Demand? Why does a demand curve slope downwards from left to right?
30. Explain briefly the Ricardian Theory of Rent.
31. Explain the concept of investment multiplier with the help of suitable illustrations.
32. What are the various methods of measuring national income? How national income is calculated by income method?
33. Describe the expenditure method of calculating national.
34. Differentiate between perfect competition and monopoly.
35. How is the equilibrium price determined in the market?

1998

1. Define consumption. Define domestic factor Income.
2. Name three collective wants to be satisfied by govt. production.

3. Two examples of financial non-departmental enterprises in India.
4. What is personal Income? What is capital transfers?
5. Give two examples of ac quiring foreign financial assets.
6. Name three inputs used in agriculture. Define supply.
7. Define Macroeconomic.
8. Define aggregate demand.
9. State the relationship between demand & price.
10. What is meant by investment multiplier?
11. What is monetary policy?
12. Give reasons for including govt. enterprises in the corporate and Quasi corporate sector.
13. Distinguish between product based division of labour and process based division of labour.
14. Distinguish between free goods & economic goods.
15. What is operating surplus? What are its components?
16. Distinguish between capital transfer and current transfers.
17. Point out the differences between GNP & NNP.
18. What are the precautions to be taken for calculating Income by expenditure method.
19. Explain the problem of double counting with suitable examples.
20. Name the sectors in India in which income method is needed for measuring national Income.
21. Define price elasticity of demand. How can it be measured?
22. Discuss the relationship between average cost of marginal cost with the help of a suitable diagram.
23. Mention the four main features of capitalism.
24. State the law of diminishing marginal utility.
25. What is excess demand? How can it be controlled?
26. State the law of demand. Explain the factors which determine the demand for a commodity.
27. State & Explain the necessary condition for perfect competitive to prevail in the market.
28. What are the methods of measuring the N.G.? What precaution are to be taken while calculating national Income method?
29. Differentiate between contract rent and economic rent. Explain briefly the Ricardian theory of Rent.
30. State the relationship between average revenue and marginal revenue under different market conditions.
31. Discuss the price and output determination under monopoly.

1997

1. Define Production.
2. What do you mean by economizing of resources?
3. What is the shape of the supply curve?
4. Define Gross Fixed Capital Formation.
5. What is consumption of fixed capital?
6. What is meant by inferior goods?
7. What is an intermediate product?
8. What is goods in economics?
9. Describe the concept of compensation of employees.
10. What do you mean by value added by production unit?
11. What will be the shape of demand curve? When the demand is unitary elastic?
12. What do you understand by income generation in the production process?
13. Explain the concept of mixed income of self employed.
14. Do you think that the N.I. satisfies pertaining to pre-independence period not much reliable?
15. How is the problem of souble counting checked in the estimation of N.I.?
16. Differentiate between consumer goods and producers' goods.
17. What is MPC? How is it determined?
18. Distinguish between $N.I._{MP}$ and $N.I._{FC}$.
19. What is normal profit? How does it differ from 'windfall profit'?
20. Distinguish between personal income and personal disposable income.
21. Write a note on quasi rent.
22. Explain the expenditure method of measurement N.I.
23. Distinguish between real wage and money wage.
24. What is monopoly? Point out the main features of monopoly.
25. Explain the difficulties of measurement of N.I.
26. Show the relationship between AC & MC with the help of suitable diagrams.
27. Explain the total outlay method for the measurement of elasticity of demand.
28. What is meant by economic problem?
29. Why does an economic problem arises?
30. What do you mean by product method of calculating N.I.?
31. Explain the various components of GDP.
32. What are the various methods of measuring N.I.? How N.I. is calculated by income method?

33. What is Law of demand? Why does a demand curve slope downwards from left to right?
34. Explain the law of supply. Discuss fac tors that determine the supply of a commodity?
35. What is equilibrium price? How is it determined ? Illustrate your answer with suitable diagrams.
36. Define production, consumption and investment. Bring out their interrelationship.

1996

1. Define National Income.
2. What is goods in Economics?
3. What is personal Income?
4. State the process of capital formation.
5. Explain the term Balance of Trade.
6. What is factor cost?
7. State Marshall's definition of Economics.
8. What is demand?
9. What do you mean by production in economics?
10. Define land.
11. What is Capital?
12. What is Mixed Economy?
13. Define profit.
14. State the basic features of perfect competition.
15. Distinguish between Free goods and Economic goods.
16. What are consumer's goods and producers goods?
17. State the relationship between GNP & NNP.
18. What is the relationship between average cost and marginal cost?
19. National Income is a good indicator of National Welfare—Discuss.
20. Explain the difficulties of measurement of National income.
21. How does the gross capital formation estimates?
22. Define the concept of GNP & NNP.
23. "Economic is a science of choice". Discuss.
24. Why the demand curve slopes downward?
25. State the Law of Diminishing Returns?
26. Define Monopoly. How is the price determined under monopoly.
27. Explain the modern theory of wages.

28. What is aggregate demand and aggregate supply?
29. "The Central Bank has a number of weapons in its armory to control credit." Explain.
30. What are the methods of measuring National Income?
31. What is elasticity of supply? How is it measured?
32. What is mixed economy? Mention its features.
33. What is Rent? Explain the Ricardian Theory of Rent.
34. Discuss the Modern Theory of Rent.
35. Explain the aggregate demand function. Discuss its role in the determination of the level of Employment.
36. Discuss the price and output determination under monopoly.

1995

1. Define supply.
2. What are free goods?
3. Name a Governmental Enterprise in India.
4. What is imperfect competition?
5. What is consumption of fixed capital?
6. Name a government non departmental enterprise.
7. What do you mean by human resources?
8. Define monopoly.
9. "Rent is earned by land only." Who said this?
10. What is average revenue?
11. Explain the term average propensity to save (APS).
12. What is marginal product?
13. What is labour in economics?
14. Explain Robbins definition of economics.
15. Mention three features of capitalism.
16. Distinguish between nominal wages and real wages.
17. What is demand?
18. "A monopolist cannot charge any price be likes." Explain.
19. State any three features of socialism.
20. What is normal price?
21. Point out the difference between NDP and NNP.
22. What are economic goods?

23. Explain intermediate goods and capital goods.
24. What is aggregate demand and aggregate supply?
25. Give two examples of sub-sector of the primary sector in India.
26. What are the precautions to be taken for calculating National Income by expenditure method?
27. Mention the different aspect of organization of technology use in the process of production.
28. What is price elasticity of demand? Explain the factors governing elasticity of demand for a commodity.
29. Explain the necessary conditions for perfect competition to prevail in the market.
30. Define profit. Why must profit be paid?
31. What is a mixed economy?

HOW TO PASS EXAMS IN A BETTER WAY! (EXAM STRATEGIES)

TIME MANAGEMENT

Regular review develops the memory. After each lecture/tutorial/workshop recall the important points.

☞ Make a realistic study plan

- Do you work better in the morning, evening…?
- Allow time for domestic activities and recreation.
- Allow times for breaks.
- Physical exercise will help your concentration.
- Ensure that your study time is free from noise and interruptions.
- Allocate appropriate amounts of study time for each subject.

☞ Don't waste time

- Identify your time wasters eg., television, domestic chores, telephone conversations…
- Set yourself achievable goals/tasks/questions for each study session.
- Give your learning a focus.
- Check that you are achieving your goals, doing the tasks, answering the questions.
- Revise material in sections.
- Consider your concentration span and give yourself appropriate breaks. Eg., work for one hour then do some exercise.
- Reflect on what you have learnt at the end of each session.

PREPARATION

Make your revision active and try different study approaches.

☞ Use active learning strategies for revision

- Revise with other students. (Be careful, however, of turning the study session into a party!).
- Ask yourself, what are the main ideas of the subject?
- What was the subject trying to teach me?
- What were the main topics and what do they have in common?
- What were the sorts of questions the lecturers asked in the subject?
- Write outlines for probable questions.
- Answer and test yourself on these questions.
- Test your memory.
- Make summaries of your notes.
- Try using visual memory aids eg., flow charts, diagrams, mind maps, pictures, highlights…Colours are particularly helpful to stimulate the memory.

☞ What do you know about the exam?

- Information about the exam is usually found in course outlines and handouts.
- Lecturers will often give details in lectures.
- Former students might tell you about their experience.
- Find out about the format of the exam. Is it open book, essay, case study, multiple choice format…?
- How many questions are there? Will you have a lot of choice?
- Can you access old exam papers?
- Using old exam papers for practice will give you an idea of the format and help you to allocate time.
- Find out where and when the exam will be held, and the length of time.
- Find out what resources you can take to the exam, and what equipment you need.

ANXIETY

☞ Everyone finds exams stressful.

☞ Attitude

- Use your nervousness as a motivation to do some preparation.
- Tell yourself that this is only a test—there will be others.
- Be positive about yourself.

- Look after your health.
- Get plenty of sleep, eat properly and exercise.
- Vary your work and take breaks.

☞ On the day

- Avoid coffee and cigarettes before the test.
- Do something relaxing and interesting in the hour before the test—last minute cramming will not help.
- Avoid meeting with students who make you feel nervous.
- Arrive at the test location early—choose a seat away from distractions.
- Think of a reward you can enjoy after the test.
- Say to yourself 'I will worry later, now I will put my energy into this test'.
- Calm yourself, by tensing the muscles throughout your body, then relaxing them. Take deep slow breaths.

DURING THE EXAM

☞ Relax

You have done the preparation and revised the relevant sections. Now, you can focus your energy on doing the tasks to the best of your ability.

☞ Before you start writing

- Check your comfort. If there is glare from sunlight, or a draught is making you cold, ask to move.
- Synchronise your watch to the clock.
- Do you have enough paper and pens?

☞ Reading time

- Use this time to read the directions carefully.
- How many questions do you need to answer?
- Do you need to answer these in a particular order?
- Are the questions arranged in sections?
- Are there compulsory questions?
- What is the value of each question?
- How are you expected to answer? (eg., a word, a number, an explanation, an essay?)
- Where should you write your answers?

☞ Answering the questions

- If there is a choice, tick those you can do.

- To help your confidence, do the easiest questions first.
- Number your answers correctly and clearly.
- If you get a memory block try to recall other facts related to the point. If your memory still fails, return to the question later.

☞ Written answers

- Underline the key words.
- Make a quick outline.
- Don't exceed the word limit.
- Check your time allocation.
- You are better to answer all the questions you are required to do, rather than to do an excellent job on some and not have enough time to do the others.
- If you run out of time, write notes.

☞ Objective answers eg., True/False, Multiple choice

- Use the response method required, eg., tick, circle… (This is especially important if the test is scored by computer)
- Read all the possible answers. Even if you think one is correct, there could be another one that is better.
- Answer all the questions, even if it means guessing, unless marks are deducted for incorrect answers.
- If you are really unsure about all the answers, choose the longest. It is often difficult for examiners to write a correct idea in only a few words.
- Answer questions as you come to them. If you are unsure about a question, write what you think is most likely and mark it so that you can return to it later. Remember you might not have enough time to return to unanswered questions.
- Be careful about changing your mind, first answers are usually correct.
- In general, avoid extreme answers, eg., If you were asked to choose the population of New Zealand, and the options were (*a*) 2.5 million, (*b*) 3.6 million, (*c*) 5.3 million, (*d*) 32 million, you would reject (*e*) because it is much larger than the others.
- Avoid answers which have unfamiliar terms. These can mislead you into thinking it must be right because it is 'technical'.

☞ Numerical problems

- Write down any formulae as soon as you can.
- Write something in answer to every question. Stating part of the formula might get you a mark.
- If the problem is complex, determine the order of the steps.
- Check your accuracy.

☞ Finally

Rather than leave the room before the time is up:

- Use the time to check your answers.
- Have you answered all the questions?
- Check your grammar and spelling.

GOOD LUCK!

IV
ELEMENTARY ECONOMIC TERMS

As a student of economics, one should be very much familiar with the basic economic concepts which are frequently used in real life and in economic theory. The understanding of these concepts will surely make one's knowledge on economics more clear and provide analytical depth on the subject. The important concepts are explained as under.

Human wants: Generally the term 'want' means a desire for a thing. We use words want and desire synonymously. But in economics, desire means a wish to obtain something, whereas want is an effective desire for a thing, which can be satisfied by making an effort for obtaining it. For instance, we desire to have a good house or a car or a personal computer, but these would become wants only when we do some effort like earning an income in order to obtain those goods.

Necessities: These are wants for certain goods which are essentially required by human beings for their existence. For example, food, clothing and shelter are necessities of life.

Comforts: Goods which provides ease and happiness to the people are called comforts. For example, a spacious house to live in makes one's life comfortable.

Luxuries: Wants, which are highly expensive and are intended to show one's wealth and power, are called luxuries. For example, highly priced jewellery, cars, air-conditioners etc.

Consumption: The act of using goods and services to satisfy our wants are termed as consumption. For example, when we are thirsty, we desire to have a cold glass of water and once we take in, it is said that our want that is thirst, has been satisfied. This is consumption.

Utility: It is the power of a good to satisfy human wants. For example, cooked rice has the power to satisfy hunger. Students of economics are satisfied by reading books on economics. Thus, we say, cooked rice has the utility. We must note that utility is a subjective entity/thing. It cannot be measured in quantitative terms. It can only be felt.

Production: Production is an activity of making goods and providing services. In fact, production is the creation of utility. When we make a thing useful, it is production. For example, a baker makes bread out of flour. Thus, flour cannot satisfy our want directly unless it is turned into bread or making it more useful which will directly satisfy our wants. Similarly, the services of lawyers, teachers, doctors, barbers etc are called production as these also satisfy our wants.

Goods: These are tangible or material things which satisfy our wants. These are also called commodities. For example, bread, car, pen, book etc are all goods which are used to satisfy one's want. There is a time gap between the production and consumption of goods. A car cannot be used unless it is completely manufactured. Thus it takes a lot of time to produce a car and it is consumed only when it comes in the market.

Services: These are intangible or non-material things which also satisfy our wants. For example, service of a teacher, doctor, transport company, bankers, services of a barber etc. Services are produced and consumed at the same time. As such there is no time gap between production and consumption of services. For example, students consume the services of a teacher when the latter delivers a lecture to them.

Factors of production: Factors of production are the agents or productive resources which supply their services and help in the production of goods and services. They are also called factor-inputs or primary inputs. The four factors of production are land, labour, capital and organization/ management or entrepreneur.

Land: Land in economics refers to all gifts of nature such as upper surface of earth, forests, minerals, water bodies, air etc. When we use land we have to pay a price called rent to their owners. These are also called as natural resources.

Capital: Generally, by capital we mean money or securities. In economics, capital is not money but man made things such as machinery and equipments, factory buildings and other physical necessities which are used for further production of goods and services. For using capital, one has to pay interest.

Entrepreneur: An entrepreneur is one who coordinates the act of production. He takes major decisions of a business. The important functions they do are bear risk and uncertainty involved in business. The reward an entrepreneur gets is called profit.

Labour: It means any type of human effort—physical or mental—involved in the production process. For example, an accountant, business executive, a masion etc. Labour does not mean to a worker but to his effort which he can put in the production of goods and services.

Wealth: Wealth means stock of all those assets which earn income. It includes physical and financial assets or capital such as bonds, shares etc and also paper money, coins, deposits with banks. National wealth includes both man made assets and natural resources.

Price: The price of a commodity is the amount or unit of money that has to be paid to get this commodity. Thus, if price of a computer set is Rs. 20000, then it means we have to pay Rs. 20000 to get it. Price of a commodity is generally determined by market forces of demand and supply. But sometimes, government may fix price of certain commodities.

Value: Value can be viewed in two angles. First, value-in-use, which means consumption value of a commodity. Second, value-in-exchange which relates to market value of a commodity. It is the rate at which a particular good or service can be exchanged for others.

Income: It is the flow of goods and services over a particular period of time. Income is expressed in money terms, such as a person earning a monthly income of Rs. 20000 per month.

Saving: Saving refers to the part of income which is not spent on consumption. Thus, if a person earns an income of Rs. 20000, and he spends on consumption Rs. 12000, then saving is Rs.8000.

Investment: Investment, in common parlance, means buying a stock or bond. But in economics, it refers to construction of capital goods. In other words, it is the act of production resources for the production of investment goods. It is also known as capital formation.

Welfare: Welfare refers to a state of well being or a sense of satisfaction and happiness. One's sense of well being is affected by a lot of factors such as consumption of goods and services, family relations, law and order etc.

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