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AN
INTRODUCTION TO ECONOMICS

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PREFACE

This book seeks to explain the general principles of Economics in a simple way and to offer some remarks on Indian economic problems. It throws no new light on the subject-matter of the science. But it does claim to give a new presentation of some of the topics. This newness does not consist merely in bringing modern ideas into the book. It is, therefore, our humble expectation that teachers and serious students of economics will spend some of their valuable time in reading it with a view to offer constructive criticism.

As the book has been specially designed for the beginner we hope that students preparing for the Intermediate and the B. A. degree examinations will find in it a good and easy introduction to the study of economic science.

Our abiding gratitude is due to Prof. R. D. Vadekar of the Fergusson College for his valuable assistance throughout the preparation of this book. We also thank Mr. S. V. Phadnis of the Aryabhushan Press for the special interest he took in seeing the work through the press.

Poona
16th June 1939

V. Y. KOLHATKAR
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Introduction to Economics

CHAPTER I

WHAT ECONOMICS IS AND IS NOT

The World at Work Mankind has to work to secure the means to satisfy its wants. The primary needs for food, clothing and shelter as well as the secondary needs for comforts and luxuries are satisfied only if all of us work. The cultivator ploughs his fields and sows the seed which at the season's end ripens into harvest of grain for himself and his family, and fodder for cattle. Some part of the harvest he brings to the market in an adjoining town and sells it for money. He pays a part of this money as tax to the government and uses the rest for buying clothing for his family, for purchasing his salt, kerosene oil, sugar and condiments. His yearly life is thus made possible only if he works on his soil in sun and rain. But he must not stop. As he finishes his labour for this year he must prepare for the next. He has to secure his stock of agricultural implements, cattle and cattle-fodder, seed and manure. In the market he sells a part of his produce to the merchant who takes it to the retail market where the town folk come and buy their daily provisions.

These town people constitute a bewildering variety of men and women. Some work in the factories, some in government offices, banks, insurance companies and other commercial houses, while others work independently as doctors, lawyers, engineers and shoe-makers. The town presents an interesting aspect of busy life from morn till even. Punctually at ten or eleven o'clock all are seen

to hurry on to their offices. They wait for the tram-car or bus by the roadside, or go to the nearest local train service station for their daily journey to the offices. At 2 or 3 p. m. they get a short respite during which they go to the nearest restaurants for their afternoon tea. These places are centres of busy activity for day and night. People come to them to find their tea and milk, or fruit and cakes. These provisions come from near and far-away lands. The tea gardens, the dairies, the bakeries, the fruit farms are busy producing goods which are carried by railways and other agencies of transport connecting distant towns and countries with one another.

Transport facilities are the arteries in the daily life of nations. Roads and railways, steamers and aeroplanes, motor buses and bullock-carts all serve to carry goods and men from place to place and country to country. Civilised life is thus made possible. Thousands of men are employed in these services as engine-drivers, signallers, station-masters and bus-conductors. They work and get their monthly income which they spend in buying goods and services. Every individual in society is busy earning and spending money. He tries to get as much money for his labour as possible, and to get the most he can for his money.

Very few people work directly for the satisfaction of their needs. A clerk in a government office works with his files, fills columns after columns with figures, makes his remarks, and puts the files before his superior officer. The clerk is concerned with what he gets at the month's end. His labour is never directly useful to him. It is useful only in so far as it brings him money. It is so also with his officer, may he be a Mamlatdar or a District Collector, a Prime Minister or a Governor. The milkman, the provisions merchant, the barber, the postman, the doctor

and the teacher all of whom serve the clerk daily, also never work for themselves. Everybody is busy serving others and in so doing secures his money income. The money that I spend in buying my provisions goes to the retail provisions merchant. A part of this money constitutes his profits—the reward for the service he renders—the rest he uses to replenish his stock. He brings the supply of these provisions from the manufacturer and in so doing pays for the transport of the goods from the manufacturing centre to his retail shop. The railway company which carries the goods gets its remuneration in money and spends it in paying for the services of its servants and in purchasing coal, oil and other railway stock. The manufacturer treats a part of his receipts as profits using the rest for paying his labourers and in purchasing raw materials and machinery. The labourer and the producers of raw materials and machines use their receipts in turn for buying clothing, food, shelter and education etc. The money thus goes on its endless journey from hand to hand and keeps the activity of mankind in perpetual motion. Nobody can rest for long because nobody can live without a regular income, and income can be secured only by work.

Everybody tries to prepare himself for the work, which offers him the highest prospective reward according to his abilities and opportunities. He may succeed or fail. Work and preparation for it are our immediate concern. Reward comes later. We may go wrong and miscalculate the chances of gain in which case we try to revise our conduct. In some cases it may be easy to do so, in others difficult.

Work and struggle are the conditions of all life. Nobody gets what he wants without effort except perhaps children, old people and the rich. But whatever even

they secure must be produced by some one. If the reader throws a glance around him in his own room the tiniest thing he finds in it is the result of fashioning given to it by human labour. The house he lives in, the food he eats and the clothes he wears, together with the thousand and one things ministering to his comfort are the result of somebody's labour. Men want this, that and the other thing which they are busy securing directly or indirectly. The world around us is a busy hive of continuous activity. We wrest from Nature the materials we require, plough the fields for corn, dig mines for minerals, dive the seas for pearls, build factories and machines to produce commodities and services.

Economics studies this activity of mankind to understand how it is regulated, to see if there are any fundamental principles governing it. We know that the different aspects of this activity are somehow inter-related, and the economist wishes to analyse them with a view to understand the operation of the basic forces at work.

What is
Economics ?

Definition Economics is thus a social science. Its field of investigation is human activity in relation to wants and their satisfaction. It has been defined as *a science which deals with human conduct in using scarce means to alternative ends*. This definition requires a careful understanding.

Ends and Means We have seen how all of us have wants to satisfy. Satisfaction comes from the enjoyment of commodities and services. The desire for satisfaction, therefore, ultimately reduces itself to a desire for the possession of goods and services which yield that satisfaction to us. We do not of course start with a detail-

ed pre-arranged plan to get everything we need to-day and in the distant future. Many of our wants do not always consciously exist in our mind. The need for warm clothing is felt when we suffer from cold blasts of wind. The need for rest and relaxation is felt only after a strenuous day's work. The satisfaction of some wants thus gives rise to other wants.

This does not mean that we do not plan our conduct at all. As men having foresight we expect that we are likely to require this or that in future. Each individual's plan of conduct includes the consideration of future as well as of present wants. But our foresight is bound to be imperfect as we cannot possibly know everything about future requirements.

Human wants are almost limitless. The satisfaction of wants presently felt does not mean the end of all wants. It means only the temporary end of some wants and the emergence of new ones. Since wants are limitless, unless we are capable of putting in limitless effort to secure their satisfaction, we find ourselves under the necessity of sacrificing those needs which are of smaller significance than others. To say that we strive to obtain possession of goods and services does not, therefore, imply that the efforts of each one of us ultimately bring us everything we had originally or even momentarily planned to get. The necessity of sacrifice surrounds almost every moment of one's existence. We continually choose to fulfil our more urgent needs and sacrifice less urgent ones. The choice is not identical in every respect with every individual. An individual *A* may consider the satisfaction of hunger by two square meals every day as being more important than buying a book to read, while *B* may even sacrifice a meal a day to enable her to purchase a book which she considers more

theory of distribution is thus essentially a theory of exchange. In fact, production and distribution are two aspects of the act of exchange.]

The entire economic theory is thus an essay in the theory of exchange. Its fundamental principles are everywhere the same. Viewed in this light the traditional division of economics is only an attempt to study the different manifestations of the theory of exchange. But the titles of the four divisions suggest that the subjects treated under each are different in form and content, that there is no unity among economic phenomena. An attempt will, therefore, be made in the following pages to establish this unity.

[It is necessary at this stage to make a few observations on the nature of economic laws. Scientific investigation attempts to explain facts in terms of cause and effect. It shows how given conditions certain results are likely to follow. Every scientist has to proceed by the method of isolation since the complex world cannot be studied as a whole. But when we isolate certain facts out of the complexity of the total situation and study them, the explanation of isolated facts in terms of cause and effect holds true only in the conditions of initial isolation.

In the physical sciences this isolation is created in the laboratory while in the social sciences it is created in the mind of the scientist. When laws are stated as conclusions of scientific investigation, they hold true only in the conditions in which they are established. Thus, the economic law that a rise in the price of a commodity tends to reduce demand for that commodity holds true *when other things do not change*. Only, the isolation effected in the physical sciences is more exact while that created in the mind of the social scientist has not

There are a number of resources with only a limited range of uses. A hammer can be used only for some limited purposes. It cannot be used for weaving cloth or spinning yarn. A doctor will be useful only in his line or in lines where no particular technical skill is required. He cannot be of use in civil engineering. It may be a matter of choice whether one wishes to be a physician or an engineer. But once the decision is made and action is taken upon it, the field of choice becomes limited. If doctors' earnings fall low, likely entrants may choose other professions but seldom those who have become doctors.

Our conduct thus consists in directing the use of resources — which are capable of alternative uses — in those fields which to us are most fruitful. In doing so we choose to satisfy our more important wants in preference to the less important ones. Or, if resources permit we take them up only at a relatively later stage. It is of course true that many of our actions are performed through sheer force of habit. But excepting this part of our conduct in which choice has already been made the rest is the result of deliberate choice.

If, however, we merely study how an individual uses his limited resources and do not go further we shall only have constructed a theory of an individual's choice. And no doubt a significant part of the economist's attempt is to construct such a logic of choice. The inquiry, however, does not end here. Everybody's choice produces certain social results. Thus, for example, we find the existence of division of labour, the pricing of goods and services in the market, and an increase or diminution of employment due to the behaviour of individuals in society. Economics observes

Scope of
Economics

these social phenomena and explains them through the study of choice in human conduct. The study of choice in human conduct thus forms an entrance to the understanding of economic phenomena.

The field of investigation for the economist is thus the social conduct of men in using limited means to alternative ends. Some economists, however, maintain that economics deals with the activities of man in his pursuit of material welfare or wealth. It must at once be admitted that a significant part of human activity consists in securing material requisites of happiness. But these economists make a distinction between activity directed towards securing wealth — which they call economic activity, and that which purports to secure other objectives — which they call non-economic. Such a distinction would lead them to class the activity of war as obviously non-economic or even uneconomic. The distinction relates to the character of ends and leads the economist to pronounce a judgment upon the results of particular activities. In doing so the economist clearly steps out of the field of analysis and enters into evaluations of the results of human activity—a process which clearly lies outside the limits of scientific investigation. People may feel happy in drinking wine or even in waging war. We have to take these aims of men as granted and then find how men use their resources in attaining them. The activities of war and wine-producing have an economic aspect in so far as they involve the use of scarce means. Our object is to study activity and not to sit in judgment on it. Any activity which entails considerations of using scarce means to desired ends falls within the scope of economics. Since this consideration applies to all human conduct, all of it provides a field for economic investigation.]

**Economising
and Economy**
/
 We have seen that the necessity of choice arises because we wish to make our resources go the longest way; because we have to use them most economically; because we wish to avoid waste. The tendency all along, through mistakes and pit-falls, is to economise. Economising thus does not mean non-use of resources, that is, keeping them idle, though on occasions even this course may be economical. We often come across words like 'economising' and 'economy' in our daily conversation. Fortunately, in this case, unlike most other cases, the scientific and the popular meanings of the words are exactly alike. But a beginner for this very reason feels that in economics he is likely to be taught how he should in fact economise and avoid waste of his resources. To the question whether economics does so, the categorical answer is that it does not. The student must, at the outset, be very clear about the distinction between the two questions: How men behave, and How they ought to behave. The latter question entirely falls outside science *qua* science. Science studies how men behave, how things are, how events take particular shape. As a science its purpose is served when it answers these questions. Anything outside such characteristic questions is not germane to strictly scientific inquiry.

**Economics and
Economic Policy**

 All this of course does not mean that scientific knowledge is of no use in practical conduct.

 When we grasp firmly the causation of social phenomena we are certainly better equipped to plan our conduct. Economics is a social science. A correct appreciation of the economic laws operating in a society may help us to formulate a correct social policy. Whether this is or is not possible depends upon whether scientific investigation has or has not

been carried to that level of perfection where reliance could be safely placed upon the validity of its conclusions. Economic science has not yet reached that stage. Indeed, it would not be wrong to say that it is yet in its infancy. Still an understanding of economic laws will at least partially enable us to say what train of consequences is likely to follow from different social policies. While, however, it may be of some use in formulating broad social policies it has very little to offer by way of guidance to individual conduct. To an individual its study constitutes an exercise in logic.

In the factual world human effort is largely directed towards acquiring money and spending it on different objects and services capable of yielding satisfaction. Everyone tries to secure on the one hand the highest possible value obtainable for his services and on the other the highest possible satisfaction from the expenditure of his income. Thus the activity of economising, of using scarce means to different ends everywhere takes the form of calculation in terms of money. Mankind has invented and adopted the use of money to keep its activity in perpetual motion. Every man tries to make his labour most fruitful in terms of money, and then to make his money most fruitful in terms of commodities and services. This palpable economic fact has permeated so deeply the subconscious regions of the human mind that it becomes difficult to imagine a state of society in which money does not exist.

This naturally leads the beginner to think that economics must be principally connected with money. In a sense his intuition must be given the credit of being on the right side. Economic science is vitally

concerned with the explanation of monetary phenomena, with human behaviour in relation to money and its uses. But all this should not make him blind to the fundamental causation of human behaviour. Human life is possible only if its daily, distant and growing wants are satisfied. And they can be satisfied only if mankind works. Society will not be rich if all of a sudden the quantity of money in everybody's pocket is doubled; nor will it be poor if it is suddenly halved. Effort and satisfaction are primary. Money in an organised society based on division of labour is necessary to relate individual efforts to satisfaction. Hence, though money is vitally related to economy, the fundamental facts of economic life lie beyond money; and it is these which constitute the main subject-matter of economics.

Another suspicion which haunts the beginner is that Economics and Accounting economics has something to do with accountancy, that it must be a science the books written on which are full of figures, arithmetical calculations and algebraic formulas. It must be said at once that economics is not a science of accounting, and at least the elementary text-books including this one do not contain any elaborate calculations in terms of the notations of any branch of mathematics. It should nevertheless be noted that the problem of economising is primarily a problem of balancing efforts and results, of finding whether better or worse results are secured by diminishing the use of resources in some channels and increasing it in others. Looked at in this way, the entire problem of economising constitutes an accounting problem.

In business houses and manufacturing concerns this balancing is done by recording expenditure and receipts in terms of money. Businessmen continually strive to see

in which channels of work expenditure can be reduced and in which it can be increased to secure a more satisfactory profit margin. The life of an ordinary individual has various sides all of which cannot be reduced to the money measure. But we do find him saying. "I should have used my time in this activity to greater advantage than in that activity", or, "I should put in more work in studying Milton and less in other activities.", or, "Two hours spent with my sick friend will mean a more fruitful use of my time than if they are spent in the tea-club;" and so forth. All of these are practically accounting problems with this difference that the magnitudes involved are psychological and, therefore, incapable of numerical or money measure. It is everywhere, with all that, a calculation of more here and less there. We can thus legitimately describe the science of Economics as one which deals with the accounting aspect of social conduct.

We have so far discussed the nature of the economic problem. We have next to consider the method of approach to the problem. The student who takes to the study of economics for the first time finds himself faced with a difficulty when the text-book tells him that economics is a science which deals with the behaviour of man in society. The word 'science' in his mind is somehow connected with physics and chemistry, because these are mainly the sciences with the elements of which he is acquainted in his school career. In the process of learning the first principles of these sciences he performs experiments with the help of interesting apparatus on the laboratory table. All this part of his intellectual discipline is in relation to things and objects outside himself and his fellow students. He is seldom taught to turn his curiosity to his own self and his associates. He, therefore, takes time to assimilate the idea

**The Method of
Inquiry**

that he himself along with his fellow-beings is the object of study in economics.

[It is obvious that when the object of inquiry is human behaviour and not the external physical surroundings of man, the laboratory method is inapplicable. Human behaviour and its social consequences cannot be studied in the test-tube. Its various aspects can be understood and arranged in an order of cause and effect only by observing how people behave and by introspecting how the observer himself behaves under different circumstances. Observation and selection is also, up to a limit, the method in physical sciences. We see the phenomena of Nature, divide them into different aspects and choose the one in which we are interested. Even the particular aspect we choose has to be further analysed with a view to break up its complexity and then study each element separately. On the laboratory table we artificially create some conditions to see how under those given conditions elementary forces of Nature work.

To the extent to which observation, thought, analysis and simplification go, the method of inquiry in both physical and social sciences is identical. But beyond that the actual laboratory method is unsuitable for social study. The social scientist has, therefore, to create within himself a mental laboratory in which certain social conditions may be assumed to exist, and has to think out how man would behave under those assumed conditions. He may then go on to apply these assumed conditions to a number of individuals and think out the process of social phenomena caused by the inter-action of the behaviour of all. He may further change these assumptions and imagine what new results are likely to arise as a consequence of the change. Clearly, all this is a process of abstraction and deduction.

It is a matter of common observation, however, that all men do not behave in the same way. They have different tastes and aptitudes and they live under different circumstances. What one man thinks to be the probable line of conduct for human beings to follow under given conditions, another man may not think probable. This makes it necessary for the economic scientist to correct and enlarge his hypotheses by constant observation of the social world. His own process of thought must be constantly subjected to inductive verification if what he has to say is to possess a realistic character. It is pre-eminently the purpose of every science to explain reality. Towards this end the social scientist must direct his investigation. Lest the process of starting from first principles — though this happens to be the indispensable first step — should lead him away from the world of reality, he must constantly subject the results of his research to a searching verificatory process. Deduction and induction, abstraction and verification, are then the methods used in social sciences. Exclusive reliance on any one method is bound to lead one into sterile fields.

For the purpose of analysis it is necessary to divide the subject matter of any science into convenient departments. The traditional division of economics falls into four subjects viz.: Consumption, Production, Exchange and Distribution. The analysis of monetary phenomena is taken up last and then superimposed on the analysis of the earlier subjects. The theory of Consumption deals with the main features of human wants and the reactions of human beings to changes in the quantities of commodities possessed. The theory of Production is primarily concerned with changes in the total produce of a commodity with changes in the employment of factors of produc-

tion—land, labour and capital. In the theory of Exchange the process of the pricing of final goods is analysed with a view to determine their equilibrium price and output. Finally, the theory of Distribution deals with the market for factors of production and the process of pricing of those factors.]

It is easy to see that Consumption, Production, Exchange and Distribution are but different manifestations of the fundamental fact of choice in human conduct. Choice in favour of one thing implies the sacrifice of something else. It can in fact be viewed as an act of exchange. If I choose to have an evening walk instead of visiting the picture-house, I am in fact exchanging one type of pleasure for another type. If A chooses to devote his time to write a book rather than work for remuneration in a business concern, he is exchanging one variety of the use of his resources for another.

[All human conduct is the expression of a continuous series of acts of exchange. The consumer instinctively or deliberately exchanges some commodities and services for others. In a monetary community he continually exchanges successive portions of his money income for different objects and services. In choosing to purchase some things he gives up the alternative commodities including money, and thus performs an act of exchange. The producer in using his resources in one way sacrifices the prospect of using them in another way. And when he hires the services of factors of production he chooses to employ some factors in larger amounts than others. The factors themselves choose to offer their services in this or that line of production. The choice exercised by those who demand and those who supply the services of factors ultimately decides the prices of those services. The

Artificiality of
Traditional
Division

theory of distribution is thus essentially a theory of exchange. In fact, production and distribution are two aspects of the act of exchange.]

The entire economic theory is thus an essay in the theory of exchange. Its fundamental principles are everywhere the same. Viewed in this light the traditional division of economics is only an attempt to study the different manifestations of the theory of exchange. But the titles of the four divisions suggest that the subjects treated under each are different in form and content, that there is no unity among economic phenomena. An attempt will, therefore, be made in the following pages to establish this unity.

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In the physical sciences this isolation is created in the laboratory while in the social sciences it is created in the mind of the scientist. When laws are stated as conclusions of scientific investigation, they hold true only in the conditions in which they are established. Thus, the economic law that a rise in the price of a commodity tends to reduce demand for that commodity holds true *when other things do not change*. Only, the isolation effected in the physical sciences is more exact while that created in the mind of the social scientist has not

the same degree of exactness. Hence the laws in social sciences are stated to be in the nature of *tendencies*. The forces in the physical world which are neutralised in the laboratory are capable of correct measurement. This is not so in regard to social forces which are aggregated in the portmanteau expression 'other things remaining equal.' Continuous research may reveal that the statement of a law is either inadequate or incorrect and requires reformulation.

Scientists are perpetually in search of universal truth, of principles which are valid in all space and time. The reformulation effected after further research does not mean that the law immanent in the world process itself has changed, but only that our understanding of it has changed, improved and grown fuller. This is true of the laws of physical as well as of social sciences including economics.]

Every individual is after satisfying his wants of whatever character they are. In this pursuit he distributes scarce means as between different wants according to their position in his scheme of desires. In a sense, all activity tends towards that balance of satisfaction where a rearrangement of resources becomes unnecessary. Every activity has an economic aspect. The resulting satisfaction or happiness or welfare is often called economic welfare. But it is difficult to draw a line between economic and non-economic welfare since all welfare is ultimately a subjective experience.

Moreover, every individual's experience is a category by itself. It admits of no quantitative measurement. Nor can it be compared with any degree of exactness with the experiences of others. As between two individuals with different money incomes, it is difficult to say that one is

more or less happy than the other without making dubious assumptions regarding their respective capacities for happiness, and regarding the nature of happiness itself. Whether an activity leads to happiness or a balance of satisfaction has to be judged by the individual himself. Further, the concept of welfare cannot be generalised. We cannot, for example, ask whether and why Englishmen as a whole are happier than Indians, or some Indians are happier than others. And indeed, the Science of Economics does not investigate into these questions. It is concerned, firstly, with finding how every individual's own ends lead him to distribute his scarce means so as to secure a balance in his own way and secondly, with the objective social results produced by the behaviour of all individuals.

CHAPTER II

HUMAN CONDUCT IN THE REAL WORLD

Human conduct is conditioned by a variety of forces. Freedom of choice as between different lines of activity is never absolute. Nor is the exercise of choice a matter of mere chance. To a large extent our conduct records our response to certain influences, internal as well as external to man. These influences are mainly three. They are: our physiological needs and capacities, our physical environment, and the frame-work of social institutions within which we live and work. Though the essential pattern of human conduct is everywhere set by the necessity of choice as to wants and means, its scope and direction are capable of variation in accordance with the above influences.

Food, clothing and shelter are the fundamental physiological wants we experience. They are so closely bound up with our being that instinctively we are led on to satisfy them. They are fundamental also in the sense that they take precedence over other wants. A large part of economic activity consists in the production of food, clothing and some kind of shelter. The capacity to do other things is dependent on physical and mental health which is impossible when these primary wants cannot be satisfied. Our choice is thus circumscribed by the needs of bare existence. Between food and sight-seeing a hungry man will choose the first. He has, however, a larger freedom of choice as between the various kinds of food-stuffs to satisfy his hunger.

Even then the field for choice is not unlimited due to the limitation of our resources. Human life itself is short

in relation to the various things one would like to do during a single life-time. In the case of our hungry man, his choice can lie among those things only which are well within his reach, in space and in time. A nourishing herb in parts of Tibet which are not easily accessible or a small hunger-satisfying pill which scientists might invent on some indefinite future day are both equally beyond the pale of his choice. It is here that the natural environment comes in as an important factor in determining human conduct.

Wants which have the same physiological basis may
 Physical Environment manifest themselves in different ways in different physical environments. The want for clothing, for instance, may mean the necessity of warmer garments in countries with a cold climate than in the tropics. The material out of which they might be made would be wool or skin, while cotton might be the best thing for tropical wear. Even more remarkable are the limits. Nature places on the means available for the satisfaction of wants. In the arctic regions economic activity in respect of house-building takes the form of building snow houses, for snow is all that Nature affords by way of shelter to the Eskimos. Economic activity there, as everywhere else, is largely a matter of environmental adjustment. Wheat cannot be grown in the Tundra regions, nor are snow-houses built on the equatorial plains. Dog-carts and sledges are used on the icy slopes of Siberia, while bullock-carts are employed in the dusty plains of India as means of transport. [Indeed, the influence of geographical location, of the configuration of the land, of the climate, of the quality of the soil, of the mineral and forest resources, and of the means of power supply is too important to be ignored in studying the economic life of any people.]

It is interesting to know how our wants and efforts in India are influenced by our geographical environment. Living as we do in a hot climate our food consists mainly of vegetable products available in the different regions. Thus rice forms the principal article of diet in all those tracts which are wet. The western and eastern coastal regions of peninsular India and the Ganges and Brahmaputra valleys are wet tracts having a heavy rainfall and capable of producing rice as their main crop. But as we come to the Deccan plateau, the soil has the capacity to produce not rice so much as millets like jwari and bajri, and in many parts wheat. Over this region, therefore, jwari and bajri are the staple articles of food. As we go further north into the extension of the dry tract in the Punjab and United Provinces wheat becomes the main food-stuff. Meat which contains a high percentage of proteins is not found as a principal item of diet anywhere in India.

Along with food comes clothing. Cotton and silk are by far the best products suitable for our clothing. Our requirements of wool are small and are found mainly in the northern regions where the climate is cold. Even in house-building the constructions are mainly designed to suit weather conditions in particular tracts. These and many other instances could be shown to prove that our geographical environment largely determines the nature and substance of our wants.

In our efforts also the resources yielded by our own land are the ones we try to nurse and develop so as to be serviceable to us. A major part of the land in India is capable of yielding only agricultural products. Agriculture is, therefore, our principal industry. Agriculture, forestry and plantations engage over sixty-five per cent of the working population of this country.

Indian mineral wealth is not considered to be very ample. We do not possess large supplies of good varieties of coal, though we have iron ore of the best variety in abundance embedded in the strata spreading from the eastern fringe of the Chhota Nagpur plateau to the north and north-eastern ridge of the central Indian foreland. But it is possible for us to make good the deficiency of coal by exploiting potential supplies of hydro-electric power all along the Western Ghats and the Himalayas. Among our most important manufacturing industries are the cotton and jute textile industries. The cotton industry is being conducted on modern as well as on primitive methods. It is primarily located in the cotton belt extending over the whole of the hinterland of the port of Bombay. There is another cotton belt of a small size in the South where also the cotton manufacturing industry has been flourishing for the last few years. Other industries like the iron and steel manufacturing industry are gradually being built up.

Yet it is easy to exaggerate the influence of the natural environment on human conduct. For, the advance of science and the growth of communications have made it possible to surmount the barriers of Nature. Nature is being gradually adapted to meet the needs of man. Wheat can be transported to the Tundra regions and the heat of the tropics can be relieved by suitable air-conditioning; dog-carts and sledges, bullock-carts and camels are giving place to the aeroplane. The field of co-operative effort is expanding. Over widely different natural regions wants are tending to become uniform. The sphere of choice is widening.

[Science, however, only modifies the environment] Even if the advance of science were to place unlimited power over Nature in the hands of man, it would still be

impossible to wipe out completely the influence of the physical environment, because man himself is a part of it. As it is, the world is far from being a single economic unit. All sorts of factors— historical, social, cultural, racial and economic— have conspired to divide the world into a number of political regions each trying to be self-sufficient. So that given this tendency towards isolation, the geographical factor assumes a great importance in conditioning human conduct.

Economic activity is also subject to the influence of social institutions. Man does not live in isolation from his fellow beings. He is fond of their company and his conduct is always related to the needs of social existence. Society at once widens and limits the field of his choice. It is in society that he can reap the benefits of co-operation. It is as a social being also that his conduct has to conform to the rules and practices essential for social solidarity. He is free to choose any course of conduct for himself so long as he keeps within the socially prescribed limits. These limits are enforced on behalf of society mainly by the State. Obviously the State exercises a great control over human conduct.

The extent to which any state allows freedom of choice to its subjects is not everywhere the same. It may allow them as much freedom as is consistent with the maintenance of peace and order assuming for itself only the role of a police organisation. It may, at the other extreme, so regiment the entire man-power and resources within its influence as to leave little or no room for individual freedom of action. However, a large number of states in the modern world fall somewhere between the two extremes, allowing more or less freedom of choice to their members. Everywhere

the State has forsaken the passive role of the policeman and has assumed more and more positive functions—functions which were once regarded as the special preserve of private activity. It has come to have a profound influence on the life and work of its members through the particular policy it follows in its manifold activities. It employs a large number of its subjects in its various services and is responsible for the disposal of a large part of the other resources of the community. Besides actively operating [many services such as the railways and the post office, health and insurance, the State regulates the activities of its members through a system of laws which it maintains. It is in this legal framework that the exercise of choice must operate.]

The State in an individualist society like that of the U. S. A. or India recognises and protects freedom of enterprise and the right to private property within wide limits. From the point of view of human conduct in the disposal of scarce resources, freedom of enterprise and the right to private property are so important as to need a little detailed explanation.

Freedom of enterprise is the right of every individual member of the State to use his resources in whatever way he likes. He may use them for the direct satisfaction of his needs or for their indirect satisfaction. For the latter purpose he may combine them with those of others in a joint venture or may use them independently in competition with others. Freedom of enterprise implies, in short, unrestricted scope for the employment of one's own time and resources in any line of activity. It opens out the door for co-operation as well as for competition. Through co-operation it becomes possible to finish jobs which could not have been undertaken by single

individuals; through competition resources can be put to their most profitable uses.

An inevitable concomitant of freedom of enterprise is the right to private property. While **Private Property** private property in such personal possessions as one's own labour and the food one eats is normally recognised in all civilised communities, the extension of that right to include durable goods such as machines and land is a peculiarity of what are known as capitalist communities. The right to private property enables one to acquire things, and dispose of them in any way one likes. Indeed the right of free disposal is the hall-mark of private property. An individual possessing property might destroy it, use it for his own benefit, pass it on as a gift to some one else, sell it or let it for a rent, mortgage it to secure a loan, or bequeath it to his heirs. Freedom of enterprise and the right to private property together leave the initiative as to the distribution of resources to private individuals. From the point of view of the community as a whole the allocation of its resources as between different uses is the result of the decisions taken by hundreds of individuals exercising their choice.)

Private property in the means of production has the result of making a large mass of the people dependent only on their own labour to satisfy their wants. They cannot set up as independent producers in the absence of the means of production such as machines and raw materials. Nor do they have enough resources to enable them to undergo a long course of training necessary for well-paid jobs. Their field of choice is extremely limited. For them freedom of enterprise is a myth. Society thus comes to be divided into classes based on the possession of property by their members. The propertied class enjoys a much larger freedom of enterprise than the propertyless class. The State often interferes in favour of the latter by

giving them free education and other facilities with a view to widen their horizon of opportunities for alternative employment. To a certain extent the State may also check the freedom of those who are in a position to enjoy it by requiring them to conform to certain laws and by taxation.

Modern states, while recognising freedom of enterprise and private property can still discourage some and encourage other lines of activity through legislation. The policy of Prohibition, for instance, discourages, by making it legally impossible, the production and consumption of intoxicating drinks. High import duties or direct subvention by the State might, on the other hand, encourage the production of say, sugar. Again, the State makes the exercise of individual choice conform to certain requirements as is done through the Company Law in the case of the formation of companies. Laws of inheritance affect the disposal of property after the death of its owner, which in turn affects the distribution of resources as between different uses. The laws of inheritance again, influence the family system and determine its size, while the family system in turn influences the system of inheritance.

These restrictions on choice, however, do not fall in the same category as those which we find in a Socialist State like that of Soviet Russia. In such a State property in the means of production is not in private hands but is vested in the State. The State is the ultimate authority which allocates resources — in men and materials — as between their possible employments. But it would be wrong to suppose that the need for choice is absent in such a socialist State. Far from it. So long as there is scarcity

Law and
Economic
Activity

A Socialist
State

of resources in relation to wants, that need persists. The only difference between the individualist and the socialist states is this. Whereas in the former choice is mainly in the hands of private individuals and the communal conduct largely a resultant of the conduct of separate individuals or groups of individuals, in the latter the choice is made for the society as a whole by a single central authority viz., the State. The economic problem is present in both. Only it is tackled in different ways. In this book we are concerned only with the way it is done in the former.

Within the State men do not live as separate units. There are countless associations and institutions which organise the relationship between them. Membership of these associations affects the freedom of choice one enjoys. Thus, members of a Trade Union, which is an association of workers aiming at bettering the lot of its members, cannot accept jobs at less than the scale of wages prescribed by the Union. To that extent their freedom of choice is restricted. But, on the other hand, success in the struggle for higher wages carried on by the Union against employers increases the freedom of choice of its members by giving them command over more resources. However, associations like the Trade Union are mainly voluntary and their membership itself is subject to the choice of the persons concerned. But there are other institutional restrictions on choice which cannot be chosen away.

We have already noticed how the institution of private property restricts the choice of those who do not possess property. The caste system obtaining in Hindu India is an illustration of the restriction on choice due to certain religious beliefs and

practices. Here we have a society divided into four castes each with numerous sub-classes limiting the field of activity of its members. An individual is born into one of these classes or castes and continues to be its member till he dies. The castes have an occupational basis. The functions of members of the different castes are laid down once and for all. A member of the lower caste cannot hope to ascend into the caste above. Nor can he perform a function not assigned to members of his caste. The freedom of choice of an individual is restricted within the prescribed occupations of his caste. One result of the system has been the tendency for occupations to be hereditary. The son follows in the foot-steps of his father. The training he receives under the guidance of his father stands him in good stead in his career. But though training can thus be handed down from father to son, talent may not. There is thus an excessive rigidity in the distribution of functions. Functions are assigned to individuals not in virtue of their capacity or aptitude for them but on the basis of their birth in certain castes. This involves a waste of human resources. Under the influence of modern ideas of freedom the caste system is already breaking down.

The fact that the caste system has been associated, rightly or wrongly, with Hindu religion shows how the religious outlook of a people is relevant to their economic life. An excessive hankering for a better life after death may lead men to engage their time and natural resources in a far more different manner than would an excessive zeal in worldly life. Hindus will build temples to the gods rather than hospitals for the sick; Mohammedans will not lend money for interest. Both will fight each other over music before a mosque rather than make a joint effort to clear the slums. Thus while caste and class limit the field of choice, religion influences the effective exercise of choice.

There is yet another institution which determines human conduct in society. That is the family. Unlike caste, class and religion, the family has its roots in the biological necessity of propagating the species. Social life in all communities is organised on the basis of the family.

The influence of family on individual life is of profound significance. The character and actions of an individual are largely moulded by family influences. His early education as well as his higher intellectual training are not altogether or even mainly the result of the exercise of his own choice. Whether he should choose this or that occupation, or this or that part of the country where to ply the trade of his choice are not matters completely independent of family influences.

A family may be a unit either for purposes of production and consumption or merely for purposes of consumption. In most modern communities families are predominantly consumptive units. The adult member or members of the family earn incomes separately but spend them for the common benefit of the family. The upbringing and education of the children are done by the adult members. Most other joys and benefits secured from the incomes are shared in common by all. The lay-out of expenditure is thus mainly determined by the needs, aspirations and expectations of the family as a whole.

It is not uncommon, however, to find families which are both productive and consumptive units. The husband and wife may together run a shop or a bakery or even a small farm. In such cases the resulting income is due to the joint efforts of all concerned. Most decisions regarding the character of the work undertaken, the scale on which it is developed and the day-to-day operations incidental to it are a result of common consultation. Joint

decisions are also taken about the expenditure of the family income on daily and distant needs.

The unification of productive and consumptive activity is found in a more or less perfect form mainly in what are called *joint families*. The joint family system prevails primarily in agricultural communities. It is very common in India and the law recognises its existence in the case of all Hindus. A family is joint when the parents and their sons together with the wives and children of the latter live under a single roof. When the father dies the eldest son becomes the head of the family. All co-operate in practising the family trade and the resulting income is the common property of the family. Members of the family who are unable to work through some physical or mental defect are taken care of by the family as a whole.

Such a family organisation becomes an ideal productive unit particularly when agriculture is the main occupation of the people. A joint family with habitation settled on or near the family farm can efficiently look after the farm. Division of labour according to the capacities of each adds to its productive efficiency. The farm produce can also be consumed most economically by the family. The family ties of affection bind the members together. In such circumstances, the joint family may be said to have been based on the socialistic principle: "From each according to his ability; to each according to his need."

But within such a family it is difficult to maintain the sense of individual responsibility of each member since there is no proportion between work and reward. The incentive to put forth one's best efforts is absent. Indolence and sloth are often encouraged. The seed of discontent is sown and family feuds arise. The desire to be separate from the family becomes strong especially when oppor-

tunities of a freer and fuller life are available away from the family estate. In a progressive and industrialised community such opportunities of reward are much wider than in an agricultural society. The transition from agricultural to industrial economy, therefore, marks the beginning of the disintegration of the joint family. The economic history of India bears testimony to this process. Families in India are ceasing to be joint for productive as well as for consumptive purposes.

Continuity and Change

These are only the most important influences to which human behaviour is subject. There are others not all of which can be clearly analysed. All sorts of superstitions, traditions and customs restrict individual freedom of action. The mere habit of thinking and living in a particular way imposes restrictions on the exercise of freedom. The field of choice for an individual is also limited, at any rate for short periods of time, by the technical training he possesses. It is often difficult, if not impossible, for him to change over to lines of activity with which he has not been familiar before. A doctor cannot change over to the engineer's profession in a moment, nor can a lawyer become a doctor at short notice. There are various other past commitments such as ancestral debt, which also limit future conduct. [For, the stream of human activity flows continuously, carrying with it the effects of past decisions and actions.]

We have considered so far the different important factors which condition human conduct through their influence on our freedom of choice. These factors are by no means constant over long periods of time. Human beings live in conditions of constant change. With a change in their environment, physical and social, the scope and direction of their choice also change. Fashions, tastes

and the scheme of human values are continuously shifting from one position to another. The knowledge of and power over natural resources are steadily but surely increasing. The wants we experience and the means we possess do not remain constant. The field of employment of resources progressively increases as the resources grow plentiful. The choice we have to exercise in order to relate means to ends takes ever such a variety of forms. The old social order changes yielding place to new. This brings new ways of life in vogue. What remains constant in the shifting sands of social change is the necessity for choice which is the life-breath of economic science.

We shall attempt in the following pages to present a technique of thought for the analysis and understanding of the economic aspect of human conduct. In doing so we have of necessity to simplify the conditions of our problem. We shall, therefore, ignore the restrictions on human choice explained in this chapter. We shall assume that men do exercise perfect freedom of choice in their actions. We shall assume also that men as well as resources can be readily moved from one place or occupation to another.

It will be objected that in the light of the restrictions on human conduct these assumptions are unreal and will detract from the validity of our conclusions. The objection, though plausible, is not formidable. If the nature of our inquiry as outlined in the first chapter is clearly grasped, it becomes clear that in applying the conclusions of Economics to actual situations due allowance has to be made for changed in the assumed conditions. *As a first approach* to the problem, therefore, these assumptions are indispensable. Analysis based on them opens the door to the understanding of the complex processes in the real world.

CHAPTER III

HUMAN WANTS

In this chapter we shall study the behaviour of an individual in the exercise of his choice of wants and of the means which directly satisfy them. We shall thus begin our study by analysing the considerations which are relevant to the decisions on which human conduct is based. As the aim of all economic activity is ultimately to satisfy wants, this analysis is of central importance in our investigation.

Necessity is the mother of all human action. We need a variety of things to make life worth living. Some of our needs may not be so fundamental to our existence that without them life is impossible. Yet we try not merely to live but, according to our lights, to live well. That fact immensely widens the field of desires. From simple food and shelter, to lipstick, powder and a play we desire an endless succession of goods and services. We are not concerned here with desires in their ethical aspect — whether they are what they ought to be; nor with desires which do not lead men to effective action. Our concern with them is only in so far as they impel human beings to action in the disposal of scarce resources. Desires or needs which urge men to effective action are called *wants*.

There is no limit to human wants. Our capacity for experiencing wants is never exhausted. As one want is satisfied others take its place and this goes on for ever. But while wants in general are limitless our capacity for experiencing any one want is limited. Thus we cannot go on eating bananas

endlessly and yet feel the want for them as urgently as when we ate the first one. A stage will be reached after eating a few bananas when we want them no more. Taken singly, therefore, wants are *satiabla*. But the same want may be felt again after some time. A large number of our wants is *recurrent*. Immediately after our mid-day meal we do not want the same stuff served to us over again. But after the lapse of seven or eight hours we would welcome another meal.

Many of our wants are *complementary*. Thus we prefer a chair and a cushion to either of them singly. Complementarity exists in many apparently independent wants. The wants for railway travel in the second class and for high class leather suit-cases is another case in point. The satisfaction of a number of such wants is necessary for human existence. They include the primary wants of food, clothing and shelter and many others to which one is accustomed. This whole complex of wants constitutes one's 'standard of life.' Maintenance of a certain standard of life implies the possession of a continuous capacity to satisfy the wants which we habitually experience.

Wants are also *competitive*. Thus one might want to go to the pictures or purchase a book or take a drive. Each of these desires competes with the others for fulfilment. The person concerned will attend to that which is the most urgent to him because he cannot satisfy all of them at once. If all wants were of the same intensity to an individual it would be impossible for him to make a choice. But actually wants are of varying intensity, so that it is possible for a man to pick and choose. The want with the greatest intensity will be the one from appeasing which he expects to derive the greatest satisfaction. The intensity of a want from this view-point is based on the satisfaction one expects to derive from appeasing it.

We can imagine an individual at any moment of time to have a *scale of preferences* on which wants are arranged in the descending order of their intensity. This scale is not fixed.

It changes over time according to the place, moods, income, tastes and ideas of the individual. This is often expressed by saying that wants have a time index and a space index, or a space-time index.

As a want is being satisfied its intensity relatively to that of other wants declines. Thus the want for bananas might gradually lose its intensity as one banana after another disappears behind the mouth. This is known as the *law of diminishing want-intensity*.

One may object, however, that a drunkard's appetite for drink increases rather than decreases with every additional glass, so that the phenomenon of diminishing want-intensity is not universal. But such instances are very few and can be neglected for analytical purposes. Again, one's taste for music and a number of other things may grow in intensity over a period of time. But the law of diminishing want-intensity assumes a given set of tastes at any time. Such cases therefore are no exception to this law which has an important bearing on human behaviour. We shall discuss its effects at greater length in a later section.

The means with which wants are satisfied are called *goods*. Goods may be tangible objects or intangible services. The food one eats as well as the operation one undergoes in a barber's shop are both goods. The first is a tangible object such as rice, fish or meat etc. The second is a personal service rendered by the barber satisfying one's wants for a hair-cut. The air one breathes is also a good and so is a beautiful countryside which

Characteristics
and Classes of
Goods

invites the city-dweller to spend his week-end there. Anything in fact which is capable of satisfying a human want is a good. This want-satisfying capacity of a good is called its *utility*. The concept of utility in economics needs to be clearly understood lest it should be confused with its everyday meaning. But before discussing it we shall consider other equally important traits of goods.

We have already seen in the first chapter how the fact of scarcity forms the basis of economic activity. If all goods had been available in abundance all wants would have been satisfied to the fullest extent. There are indeed some goods like water which under certain conditions are so abundant in their supply that we are not required to economise in their use. A man camping on the bank of a river can have as much water as he likes. He may bathe in it, drink it, use it for cooking, wash his utensils with it, sprinkle it before his tent or play about it in any way he pleases. But all things are not so abundant in relation to the wants they can satisfy. Even a good which is abundant in supply becomes relatively scarce under different conditions. Water which is so plentiful in relation to the wants of the single individual camping by the side of the stream may be scarce if it is to satisfy the needs of people in an adjoining town. The difference between the two situations lies in the quantitative relation of water to the wants it has to satisfy. Scarcity in the second case is scarcity *in relation* to given wants, namely, those of the inhabitants of the town. Scarcity is thus a relative concept. Goods which are scarce in this sense are known as *economic goods* and those which are abundant as *free goods*. Economic goods necessitate choice as to the alternative uses to which they are to be put. Fresh air in the countryside is a free good; in the congested localities of Bombay it is an economic good. Incidentally it may be observed that goods too, like wants, have a space-

and-time index. A cup of tea in the morning is not the same thing as a cup of tea in the afternoon, because in the meanwhile one's scale of preferences may have changed.

Goods are classified into consumer's goods and producer's goods. Consumer's goods are those which satisfy, wants directly, producer's goods those which do so only indirectly. A table, a chair, a book or a service rendered by a hair-dresser are all consumer's goods. While the paper, the ink, the machinery etc. which go to make a book are all producer's goods. The same good may be a producer's good or a consumer's good according to the use to which it is put. Consumer's goods are also called goods of the first order and producer's goods as the intermediate products or goods of a higher order. Goods can also be classified into specific and non-specific or versatile goods. The former can be put to only one use, the latter to a variety of uses. A shoe, for instance, is a specific good. It can be used only as a foot-wear. On the other hand, leather is a non-specific good in that it can be used to make a variety of goods such as money-bags, belts, suit-cases, whips as well as shoes. Goods may differ in their degree of specificity. The more specific a good, the smaller is the field of choice in its employment.

There is yet another way in which goods are classified into durable and perishable. The principle of classification in this case is the number of times a good is capable of satisfying a want. If a good is destroyed in a single use in satisfying a want it is perishable. Goods which yield satisfaction through a series of uses are known as durable goods. It is better to speak, however, of degrees of durability or perishability of goods since even the most durable good must in due course perish.

Goods are competitive as well as complementary. A single want may be satisfied by any one of a number of

goods in which case they are competitive. Thus Indian bidies, cigarettes and cigars all compete with one another to satisfy the want for a smoke. If a single want cannot be satisfied without the co-operation of two or more goods they are complementary. Cigarettes and matches are thus complementary goods.

We have so far discussed some of the important characteristics of the means with which human wants are satisfied. Among them only economic goods are relevant to our purpose as they alone give rise to economic activity. All economic goods which are exchangeable constitute *wealth*. An individual's personal qualities like skill or strength, though economic goods in the sense that they have utility and are scarce, are traditionally not regarded as wealth because they cannot be transferred. Services of individuals, on the contrary, which may be wanted for the skill or strength which they embody can be regarded as wealth since they can be transferred. Exchangeability also implies that the good must be capable of being appropriated. Timber in the heart of Africa which has utility, is scarce and can be transferred, is yet not wealth if it is inaccessible. As means of communication develop it might be possible to appropriate hidden sources of wealth for the satisfaction of wants. Similarly, growth in technical knowledge might open out hitherto unused means of satisfaction.

A distinction is sometimes made between personal wealth and national wealth. Allowing for double-counting, along with the aggregate personal wealth of all members of the community, national wealth also includes free goods and goods which are publicly owned. Thus the river Ganges as well as the public buildings, roads, parks, etc., in India will form part of the national wealth of this country.

One important point which will have struck the reader by now is that wealth, whether personal or national, consists of only those things which have *utility*. Utility we have defined as the capacity of a good to satisfy a human want. But this capacity is not due to any inherent technical qualities of the good. In the case of wheat, for instance, it is quite true that it has certain nourishing qualities which serve to build the human body, and for that reason it is in great demand. But if tomorrow all people suddenly have a feeling of nausea for bread and other things made of wheat, so that nobody wants it, wheat will cease to have any utility. Men will consume other things like rice, jowar, fish, eggs and so on to satisfy their want for food. Though the inherent nourishing qualities of wheat remain unchanged, wheat ceases to be a good. Utility of wheat is, therefore, not due to those qualities but to the fact that men regard wheat as useful for satisfying their want. The existence of those qualities indeed weighs with men when they want to consume wheat. But by themselves the qualities do not give wheat its utility. Utility is not objective but subjective. It originates not in the qualities of a commodity but in the human mind. It is the human mind which endows any object or service or other possessions, such as the goodwill of a business concern, with utility. If stones found in the river Krishna are tomorrow regarded as fit objects of worship by men, they will at once come to possess utility. If the supply of such stones available for worship is limited in relation to the want, they will be regarded as wealth. In the extreme case people would outbid one another in a scramble for the possession of a stone from the river Krishna.

Utility or the capacity to satisfy a want is thus a purely subjective conception. It is the reflection in an

external thing of a mental attitude of a man in relation to it. If a man considers it as useful for the satisfaction of a want, may be a want for its mere possession, it has utility. It is man's estimate of its want-satisfying capacity.

It must be understood that the term utility has, like the term want, nothing to do with the ethics of human conduct. Opium-eating may be bad from an ethical standpoint; but so long as men want opium, opium has utility. Utility is a completely a-moral concept. It implies neither approval nor denunciation of the desire for a good.

All things do not possess direct utility for all men. An elephant may not be capable of directly satisfying any want of a poor clerk. On the other hand, it may prove to be a great nuisance to him. Yet so long as the elephant has some utility for some one, it still is a good. For the clerk can sell the elephant to a circus manager or to an Indian prince and make a fortune out of it. The money he receives in return will certainly have utility for him.

Utility, goods and wants are all closely connected with one another. We cannot think of utility apart from some goods or services, nor can we think of goods in the absence of wants; wants, again, have no independent existence apart from some object of desire. The utility of a good is the counter-part of the want for a good. And just as all wants are not of the same intensity, the utility of different goods varies. The individual scale of preferences in which wants are arranged in the descending order of their intensity can also be imagined as a scale of preferences in which goods are arranged in the descending order of their utility. The satisfaction of the top-most want on the scale is given by the top-most good. As the intensity of a want declines in the process of satisfaction so will the utility of a good decline as it satisfies a want. The point of

satiety of a want is also the point at which further supplies of the good cease to have any utility.

It will be clear from the foregoing analysis that utility is merely the other side of want-intensity. The statement about diminishing want-intensity can, therefore, be called the Law of Diminishing Utility. It is nothing more than a generalisation from common experience that the more you have of any particular thing the less is your desire for further additions of it to your stock. To put it in technical terms, *the utility of each successive unit of a commodity diminishes as the quantity of that commodity is increased.*

Thus a man eating grapes finds that his want for grapes becomes less and less intensive with each additional grape he eats. The satisfaction he derives from every successive grape diminishes as the number of grapes he eats increases. The utility of every additional grape is less than that of the preceding one. So that, though the total utility of a quantity of grapes increases with every small addition to it, each successive increase is of a lesser and lesser magnitude. Conversely, the loss in total utility with every successive diminution of the quantity by a uniform amount is of a greater and greater magnitude.

The difference in total utility caused by a small variation either way in the quantity of a commodity is called its *marginal utility*, and the small variation in the quantity the marginal variation. For analytical purposes we assume this variation to be a small unit of the commodity. The marginal variation becomes the marginal unit. Margin is thus a differential. The concept of the margin as a differential can be applied to the commodity as well as to its utility. It will be clear that the larger the quantity of a commodity the lower will be its marginal utility, and the smaller the quantity

the higher will be its marginal utility. The utility of the intra-marginal units will of course be higher and higher than that of the last unit as we go from the last unit to the first. The utility of the last unit is the marginal utility of the given stock of a commodity.

If X, Y and Z are quantities of a commodity successively increasing by one unit, and if P, Q and R the corresponding total utilities derived from them, then $Q-P$ is the marginal utility when the quantities given are only X and Y; and $R-Q$ is the marginal utility for quantities Y and Z. This is often expressed by saying that marginal utility is the rate at which total utility changes with changes in the quantity of a commodity.*

When a person is confronted with a uniform supply of a commodity, say grapes, such that every unit of it is, like every other, what concerns him is the change in total utility made by a little variation in his purchase of that commodity and not any particular unit added to or taken away from his purchase. Out of the whole market stock available to an individual at any moment of time any unit may be the marginal unit since all units are alike. As between the different units a person is indifferent. For purposes of purchase and possession, therefore, the utility of any unit cannot be higher or lower than the utility of the last unit, though as he eats them the first grape will give a greater satisfaction than the second and so on. For every unit then he will pay the same price. This is the *law of indifference*. It applies to all commodities including money.)

* The concept of the margin as a rate of change is applied in economics to variations in the cost of production, in output produced, and in the receipts from the sale of a commodity.

Commodities and services are bought and sold. Every purchase of an economic good involves the sacrifice of some other good. No one would part with a good which has a greater marginal utility to him in exchange for one which has less. The amount of a good which an individual pays in exchange for a unit of the commodity bought is its *value*. Value is thus a ratio of exchange between two commodities. When the good given or received in exchange is money, the value of the other good is called price. *Price is thus value expressed in terms of money.*

The price that an individual will pay in order to acquire an additional unit of a commodity will not be greater than the marginal utility of that commodity to him. If it were not so, he will lose a greater utility in parting with money than he acquires by buying that unit. Price per unit of a commodity will not be less than the marginal utility of that commodity, because the prospect of gain in utility will induce a person to buy more of it till the marginal utility of the increased stock is equal to the marginal utility of the money spent. Price will therefore be equal to the marginal utility of a commodity. The law of indifference establishes a uniform price for all units of a commodity.)

The price at which a certain quantity of a commodity is desired by an individual is called the *demand price* of that quantity. It is possible to construct a table of the different amounts of a commodity, say sugar, that an individual will purchase at different prices. Such a table giving a list of demand prices with the corresponding quantities is called the *demand schedule* for that commodity. Demand always means effective demand backed up by ability and

Demand
Schedule

willingness to pay the price. Thus an individual *A* might be prepared to buy

2	seers of sugar at	10	annas per seer
4	" "	9	" "
7	" "	8	" "
10	" "	7	" "
11	" "	$6\frac{1}{2}$	" "
$11\frac{1}{2}$	" "	6	" "

and so on. But in the market there is not only a single individual desiring sugar. Let us take another individual *B*. As *B*'s scale of preferences may be different from *A*'s, the quantities demanded by *B* may be different from those demanded by *A*.

Let us suppose that according to *B*'s demand schedule he will buy :

2	seers of sugar at	9	annas per seer
5	" "	8	" "
$6\frac{1}{2}$	" "	7	" "
$7\frac{1}{2}$	" "	$6\frac{1}{2}$	" "
8	" "	6	" "

If we combine these two schedules we shall get the total quantity of sugar demanded by both *A* and *B* at different prices. If the demand schedules for sugar of all individuals in a community are thus aggregated we get the total demand schedule of the community as a whole.

Price (annas per seer)	<i>A</i> 's demand (seers)	<i>B</i> 's demand (seers)	Total demand of <i>A</i> & <i>B</i> (seers)
10	2	...	2
9	4	2	6
8	7	5	12
7	10	$6\frac{1}{2}$	$16\frac{1}{2}$
$6\frac{1}{2}$	11	$7\frac{1}{2}$	$18\frac{1}{2}$
6	$11\frac{1}{2}$	8	$19\frac{1}{2}$

It must be emphasised, however, that the individual demand schedules refer to a given state of their scales of preferences. So that the aggregate demand schedule also must refer to a given situation. A change in that situation will bring about a change in the aggregate demand for a commodity.

Changes in the demand for a commodity caused by changes in the price bring us to the concept of *elasticity of demand*. By elasticity of demand is meant its responsiveness to price-changes. Changes in demand with changes in prices are not of the same degree in the case of all commodities. The demand for the necessities of life like rice and wheat changes but little with small changes in their prices. It is therefore inelastic. The demand for luxuries like motor cars, on the contrary, shows large changes to given price-variations and hence is elastic. Where, however, there is a choice of substitutes available either in the case of necessities or of luxuries the demand for them is fairly elastic. [Thus if rice could be substituted for wheat or margarine for butter, the demand for both rice and wheat, or margarine and butter would be elastic.]

[The elasticity of demand for a good is equal to unity when a slight change in its price does not produce a change in the total expenditure on it. Thus, if at a price of one pice per cigarette, ten cigarettes are bought involving a total outlay of 10 pice, and a change in the price either way of $\frac{1}{8}$ th of a pice leads the community to spend the same old amount of 10 pice, the elasticity of demand for cigarettes is equal to unity. If a fall in price by $\frac{1}{8}$ th of a pice increases the total expenditure on cigarettes above 10 pice and an equal rise in price reduces expenditure below 10 pice, elasticity of demand is greater than unity. Expenditure varies inversely with price in this

case. If, lastly, a rise in price increases expenditure above 10 pice and a fall reduces it below 10 pice, elasticity of demand is less than unity. Here expenditure varies directly with price. A rise in the price of a necessary leads people to spend more on it because they wish to have the same supplies as before; a fall in price will reduce expenditure as nobody will buy more of it than he requires. The elasticity of demand for a commodity may be different at different prices.)

We have so far considered the case of only two commodities one of which was money. In the actual world individuals require a number of goods and services. Each individual buys that assortment of goods which gives him the greatest satisfaction. Within this assortment the quantities of different goods bought will be in accordance with their respective positions on his scale of preferences.

Suppose now that an individual starts with a given stock of money in his hand for a month's expenditure and a given market situation of prices. As the quantity of any one commodity he purchases increases, its marginal utility to him decreases relatively to that of other commodities. So that he would like to shift his further expenditure on to the commodity which he prefers most next to the first. But the consideration of diminishing marginal utility applies to this second one also. So that beyond a point he would shift on to a third commodity on his scale of preferences and so on. He will carry his expenditure on all commodities up to a level where a diminution of expenditure on any one by a small amount of money means a greater loss in utility than the gain in it secured from spending the amount on something else. As he continues to exhaust his stock of money on different objects the marginal utility of money to him will increase. Beyond a point he

·Equi-marginal
Returns

will like to have the remaining stock of money on hand rather than substitute it for something else. [Ultimately, the marginal utilities of all commodities he has, including money, become equal. Any revision of his lay-out of expenditure so as to increase it on some and diminish it on other objects will result in a diminution in total satisfaction. This would be so also if he reduces his remaining stock of money and distributes the cash on other objects. The last pie spent on each object and the last pie reserved in stock will have the same utility. Every rational individual has a tendency to effect such a distribution of resources as to secure equal marginal utility in all channels of distribution. This is called the *law of equi-marginal returns*. The word 'returns' is used in the sense of utility.]

We have seen that an increase in an individual's possession of the stock of a commodity diminishes its marginal utility relatively to that of other commodities, so that he would like to substitute a unit of another commodity for further additions to the first. Suppose the individual in question has five seers of rice. He will then like to have, say, 1/10th of a seer of sugar than an additional seer of rice. If he already has six seers of rice so that its marginal utility has diminished still further, he will now prefer even 1/12th of a seer of sugar to one seer of rice. This shows that the same quantity of rice can be substituted by a diminishing quantity of sugar as the stock of rice in one's possession increases. [That is to say, the same quantity of rice is a substitute for smaller and smaller quantities of sugar as the stock of rice increases.] The law of diminishing marginal utility, therefore, can also be expressed as the *law of diminishing marginal rate of substitution*.¹ This wording of the law is preferable to

1 J. R. Hicks, *Value and Capital*, 1939, pp. 20-21.

the first, because in the real world an individual has a choice not only between buying more or less amount of a single commodity, but also between varying quantities of competing goods.

In discussing the law of equi-marginal returns we started with an individual with a given money income and a given system of prices. **Income Effects** If his money income increases, there are three possible ways in which he will react to the new situation. He may increase his expenditure on all goods in equal proportion; or he may increase it by more on some goods than on others; or he may cease buying goods of inferior quality which he was purchasing with a lower income and spend a larger amount of money on goods of a higher quality. A decrease of money income on the other hand will produce an exactly opposite effect. In either case, which of the three alternatives he chooses will depend upon his scale of preferences in the new situation. As a fourth alternative it is also likely that an increase in his money income will lead him to increase only his cash balances leaving the expenditure unchanged, while a decrease may only reduce those balances. These reactions may be called the *income effects* on expenditure.

We may now suppose that there is a change in the market set of prices but that the individual's money income remains the same as before. **Price Effects** If the price of one of the commodities he buys rises, he may either buy as much quantity of it as before, paying for it a larger amount of money, and reduce his expenditure on other commodities; or he may stick to his old lay-out of expenditure buying a smaller quantity of this commodity, paying the same amount of money for it as he did before; or he may diminish his expenditure on that good and substitute

some other good or goods for it. Alternatively, if the price of the commodity falls, he may buy the same quantity as before for a smaller amount, or a larger quantity for the same amount, or a much larger quantity for a larger amount and substitute it for other commodities. The choice of any one particular course will depend on the elasticity of his demand for different goods. These may be called the *price effects* on expenditure.

In everyday life the demand situation for all commodities is the result of the combined influences of changes in incomes as well as prices.

CHAPTER IV

HUMAN EFFORTS

The analysis in the last chapter was based on the assumption that men start in arranging the lay-out of their expenditure with certain incomes. We have now to analyse the forces which govern human efforts in securing those incomes. An individual attempts to maximize his net income by his productive effort just as he tries to maximize his net utility by his expenditure. The study of the process of choice is fundamental also to the understanding of the theory of production.

Production has been defined as the creation of utilities, of want-satisfying goods and services. The entire process of fashioning and making available goods and services in the hands of the final consumer is a productive process. It involves the co-operation of Nature and man which are the two primary factors of production. There is yet a third factor of production which consists of the accumulated knowledge and appliances as a result of past labour. This is called capital. The organization of productive enterprise is regarded as the fourth factor of production. It is necessary at the outset to understand the individual characteristics of these factors.

Factors of Production: Land

By land is meant everything in external physical surroundings which is accessible and useful to man. Under it would be included all land used for cultivation, mining, plantations, forestry, fisheries, habitation etc., as well as other gifts of Nature. In the long run the area of land of course undergoes a change due to the work of rivers and

earthquakes, land-slides and building of islands, and to the reclamations done by man. All these changes however are of comparatively minor significance, so that fixity of the total area of the land can be taken as a realistic and valid assumption.

Out of these fixed natural resources mankind secures its requisites of life. These materials got from Nature cannot all be used in their original state. They have to be further fashioned into consumable form by human labour. Iron ore must be fashioned into tools, cotton spun and woven into cloth, and grain ground and baked into bread. Land is available for cultivation when the jungle on it is cleared and when it is levelled, drained and fenced in suitable plots. A large part of the earth has been developed by constructing roads, railways and buildings on it. Thus we have already turned land from its natural state into a suitable form. Labour expended on it through centuries of past human history is now crystallized in its present form. It is not Nature in its original state. The cultivated land is year by year fertilized by artificial manures and irrigated by canals built by man. (The only parts of Nature which mainly remain in their original state are the conditions of rainfall, heat, cold and sunshine. The rest is not Nature so much as human labour embodied in suitable forms.)

We have seen that the total area of land is fixed. We have further to note that the powers of Nature are limited and exhaustible. The fertility of the soil is not such as to enable men to cultivate crops on it year by year without exhausting it. Fertility gradually declines over a period of years unless replenished by human efforts. The seams containing minerals get exhausted of their mineral deposits sooner or later. This has led some economists to argue that man

**Limitation of
Natural Resources**

will in general find Nature to be an increasingly unwilling and unresponsive agent of production. It is subject to the law of diminishing responsiveness, yield or returns. To what extent this contention is true will be discussed in subsequent sections of this chapter. At this stage it is necessary to note that though land as a whole is fixed in supply, for any particular use or uses its supply can be increased by transferring it from other uses to the required ones. Historically two important events have worked against the increasing unresponsiveness of land. New discoveries of land have added fresh areas to the supply already available. Secondly, the increase of scientific knowledge has enabled mankind to use the known land far more effectively than was expected in the beginning of the last century.

Our discussion yields three important conclusions:—
 (i) The total area of land is limited; (ii) the powers of land are limited and show diminishing response to intensive use unless science increases man's power over Nature and (iii) for any given use or uses the supply of land may be increased by transferring it from other uses so long as land can be used for more than one purposes.]

Capital is defined as a produced means of production.

Capital Man does not exploit Nature only with the help of his hands. He has invented and constructed a number of tools and appliances which make his work easier. In primitive societies these tools and appliances are few in number and variety. To secure tools and appliances in large quantities a community will have to use more of its labour and natural resources towards their production. Obviously, in a poor community not much of the community's labour will be available for producing tools and machines as most of it would be devoted to satisfying the primary needs of food, clothing and shelter.

To do so a community must possess a sufficiently large stock of consumable goods so that instead of using labour and land for goods required for immediate consumption it can pay greater attention to producing tools. This is possible in three ways. [It may either go on producing the same quantity of consumption goods, but reduce its leisure and use the labour and time thus made available to produce tools. Or, by reducing leisure it may devote more time and labour to produce more consumption goods with a view to reserve them for future use. It can then begin producing tools. During the period of their production it can draw upon the reserved stock of consumption goods for its daily requirements. Or, thirdly, it can simply reduce its present consumption so that instead of the original quantity of consumables less is required for present consumption. The labour and resources saved can be used for making tools.]

The foregoing considerations bring into prominence three important factors in the production of capital goods. (i) Either a reduction of present consumption or drawing on the stock of consumables previously accumulated, (ii) making available the necessary labour and resources, and (iii) the use of these resources in constructing tools and appliances. The first factor is primary. Reduction of consumption or accumulation of consumables enables the community to release labour and resources from present requirements and make them available for building capital goods. Accumulation, release of labour and resources, and the use of them to produce appliances are three successive links in the creation of capital goods.

If tools have to be used in production they must themselves be produced first. Instead of direct production of consumption goods we have now their indirect production. The process thus becomes round-about. It takes time.

Indirect
Production

It is said to be time-consuming. But it results ultimately in increasing the quantity of consumption goods.

From this point of view capital only becomes a particular way of using labour, a way in which labour is spread longer over time. Labour and resources remain for a longer time in the preparatory process. The longer the time required for the preparatory process the larger is the stock of consumption goods ultimately secured.

We have seen that an essential preliminary in the provision of capital is the reduction of consumption. Reduction of consumption means *saving*. Capital thus originates in saving and eventuates in the building of capital goods. [The greater the savings and their use in furthering production the greater is the supply of capital.]

Capital goods are considered to be of different kinds according to their degree of durability, the purposes for which they are used and the forms in which they are available. A durable good like a house or a machine yields its services over a period of years. It depreciates slowly from year to year until it is required to be replaced. On the other hand, there are goods which yield all their services in a single use. The stock of goods in the retail shop gets exhausted as soon as it is sold. Cotton in the textile factory is exhausted as soon as it is spun. Yarn is exhausted as soon as it is woven into cloth. [Any good used in production which requires to be renewed after a single use is called *circulating capital*. A good which renders its services over a series of uses during the productive process is called *fixed capital*.] It must be noted that no good, not even a castle is permanent. The term fixed capital denotes only a relatively longer interval of time through which a good can be used. Between goods of very long durability and those that are finished with in a single use

there is a series of goods of longer or shorter durability. The distinction between fixed and circulating capital is therefore one only of degree and not of kind.

¶All goods which are not in the hands of consumers are capital goods. They are being currently used in production. They are therefore called *producer's capital*. Goods in the hands of consumers on the other hand are called *Consumer's capital*. This distinction is based on the position which goods occupy in relation to their use.]

In the trader's account-books the money invested in the concern is called its capital. It is in fact only the value of the capital in terms of money. When a trader borrows money for investment he is said to borrow capital. What in fact he does is to borrow the means wherewith to secure command over capital. The goods which he buys not for his own consumption but for furthering production are *real capital*. The sum of money they represent is *money capital*.

In the category of labour all forms of physical and mental exertion are included. Unlike saving which is in the nature of a negative exertion being a sacrifice of present comfort, labour is a positive activity. [The supply of labour depends upon the number of workers, the willingness of workers to put in longer or shorter hours of work, and the intensity with which each hour of work is filled. The supply of workers depends upon a number of factors some of which are economic and some non-economic in character.] At this stage it is not proposed to enter into the exceedingly controversial topic called the theory of population which purports to throw light on changes in the population and consequently the supply of labour. It is enough to note here that over long periods of time

there are appreciable changes in the quantity and quality of labour.

What is called productiveness or efficiency of labour depends on the physical and mental health of the people, their habits and social customs, the standard of life which they enjoy, and the quality of general and technical education they receive.

A large number of working men and women offer themselves for employment only. The rest who undertake independent ventures on their own initiative and offer employment to others are called *entrepreneurs*. Their activity is so important that entrepreneurial work has been regarded as a separate factor of production. In the productive activity of the community the actions and choices of the entrepreneurs in a large measure determine the direction and volume of production. In the following pages we shall be mainly concerned with the behaviour of the entrepreneurs.

✕ The division of factors into four classes is not strictly logical. In a number of cases the purpose served by a unit of one factor is also served by a unit of another. The factors, in other words, are substitutable. It is thus possible to secure the work done by a worker by the employment of a machine. Whether one factor is used instead of the other will depend upon whether it is possible to effect the substitution profitably with the existing market prices of the factors in question. It would therefore be more logical to class all those units of technically separate factors that are substitutable as units of a single factor. There will then be as many factors as there are non-substitutable agencies of work. But in a variety of cases the degree of substitutability differs. Efforts at a classification of distinct factor-services are on that account rendered difficult. We

may therefore adhere to the traditional categories of land, labour, capital and entrepreneurial work.

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 We are now in a position to undertake the analysis of productive activity. At the beginning of the chapter it was argued that in production, an individual's endeavour is to maximize his net income. This involves a large variety of decisions to be made. Every person wishing to secure an income finds whether he stands to secure a larger income by being employed gainfully on contract or by starting an independent venture. We shall here discuss the behaviour of one choosing the latter course. Such an individual is called an entrepreneur. The entrepreneur's behaviour in a single industry in which others compete with him is conditioned by certain tendencies which are universal in their application. It is these which form the subject-matter of this section.

When a person decides to start an independent venture he has next to determine the scale on which his venture is to be started. Then follows the assembling of the necessary resources. The money capital which he commands will enable him to purchase raw material, machinery and the service of labour. He may negotiate with others for securing a suitable site for his factory, and with the banks to provide him with his day to day requirements of circulating capital. He has to order the proper type of machinery. When he gets the factory building erected and the machinery installed, he employs labourers and the supervisory staff. It would be his endeavour to secure all these resources at the lowest cost consistently with their efficiency. He expects to sell his product for some price and he wishes to make his costs as much lower than the price as is possible. When the work begins, his constant endeavour is to see where and when economies can be secured by

cutting down the use of resources here and increasing it there. When the product comes out in a finished form he negotiates for its sale at the best price available or waits for some time in expectation of a good turn in the market. He arranges for keeping proper accounts of receipts and disbursements to enable him to know the financial position of his concern.

A business may be run by a single person or by an association of persons. In the latter case all are jointly entrepreneurs in the concern. They undertake to work jointly and share profits and losses on agreed terms. A business concern is in continuous operation unless it is to be wound up. It may be a manufacturing concern or an import-export firm or a retail shop or a pleader's business. There are differences in the legal positions of different types of business but they are alike in the fact that the entrepreneurs bear the risks involved in their operation.

Let us analyse the conditions surrounding the productive venture of a small entrepreneur, say, **† Example of a Peasant-Proprietor** a peasant-proprietor cultivating a plot of ten acres of land for wheat. He expects to fetch a certain price for wheat at the end of the season and wishes to sell the largest possible quantity of wheat which he can produce. He will try to reduce the cost as much as possible by successfully bargaining with his workers and/or by changing the number of workers on his plot. A change in the number of workers on a plot of land of a given area is equivalent to a change in the proportion in which the two factors — labour and land — are employed. A change in the proportion of factor-combination produces a change in the quantity of the produce. If he employs only one worker probably the labour on land is so short that very little produce is secured. He can therefore advantageously increase the number of workers from one

to two. Labour on the soil can now be divided among the two workers with the result that the yield is increased. He will continue to increase the number of workers till he finds that the yield per man is very satisfactory. But by this time the limited powers of the soil are being already fully employed. A further increase in labourers may increase the total produce but not as much as before. Every successive worker after this point may continue to add to the total produce. But these additions continually decline until a point is reached where any further increase in the number of workers may not bring any further addition to the produce. A further addition of workers may in fact diminish the total produce. These results of changes in produce consequent on changes in the proportions of factors, in which the factor land is constant, can be put down in a tabular form. For a proper analysis the results will be given under the heads of total produce, average produce per worker, and marginal produce.

Acres of land	No. of workers	Total produce	Average produce	Marginal produce
		(bushels of wheat)		
10	1	10	10	...
10	2	25	12½	15
10	3	42	14	17
10	4	64	16	22
10	5	85	17	21
10	6	105	17½	20
10	7	119	17	14
10	8	128	16	9
10	9	135	15	7
10	10	135	13½	...
10	11	132	12	- 3

Total produce is the quantity of wheat (or any other corn) produced by all the workers together.

Average produce is the total produce divided by the number of workers.

Marginal produce is the rate at which total produce increases or diminishes with every addition or subtraction of a worker to or from the total workers.

The table on the last page shows that when the area of the plot of land is held constant and the number of workers is gradually increased, after the fourth worker is added the addition to the total produce or the marginal produce (*vide* col. 5) begins to decline. With six workers the average produce (*vide* col. 4) is the highest namely, $17\frac{1}{2}$ bushels, after which it gradually diminishes. Lastly, the total produce is highest when there are nine or ten workers on the farm after which it declines. This tendency of marginal, average and total produce to decline when land is fixed in amount and the number of workers on it changes is called the *law of diminishing returns*. For the sake of convenience we have chosen only two factors of which labour is the variable. But instead of labour alone, we can take labour and capital as the variables while land remains constant. The results in that case will be slightly different from those given in the table. But the general tendency will still continue to be in the same direction.

The law is based on the assumption that land is limited in area. The reasoning of the law of diminishing returns is extended to mining and plantations, forestry and fisheries as well as to building sites. If the assumption of fixity of the supply of such lands is also given, it is obvious that increasing quantities of labour and capital applied to them would result in diminishing marginal, average and total returns. The productive capacity of each kind of land being limited, an increase in the expenditure of labour and capital on it is bound to show a diminishing yield.

It is easy to see that the tendency to diminishing yield holds true even if we assume labour power to be constant and land to be the variable factor.

✖ In fact the law of diminishing returns is of universal application wherever in any combination of factors one or more factors are constant and the rest variable. If the services rendered by land were to be equally well rendered by labour it would not be necessary to increase the area of land at all to secure a larger yield. One can simply increase the labour-power applied to a given area of land and secure a continuously increasing produce in proportion to the increment of labour-power. This however is never possible. To increase the produce, along with labour land also will have to be increased. Otherwise the law of diminishing returns is bound to operate. Similarly — and which is the reverse of the same thing — land cannot do the work of labour; so that to increase produce proportionately to the increment of one factor the other factor or factors will have simultaneously to increase *after a certain point*. All this is the same as saying that the law of diminishing returns operates because factors are not substitutable. So long as the fact of nonsubstitutability between the combining factors is present in any productive process, if some of them are constant and others variable, diminishing returns occur after a certain point.

The results of productive combinations of factors are however not exhausted merely by the law of diminishing returns. In the preceding discussion we started with the assumption of a given quantity of the non-varying factors with which variable factors were combined in changing quantities. The law of diminishing returns was then seen to operate 'after a certain point.' The meaning of the expression 'after a certain point' must now be studied.

Every productive undertaking is surrounded by some technical conditions of production. One of these conditions is that whatever the scale of a productive undertaking certain minimum quantities of the combining factors have to be employed to make production at all possible. It may be possible to employ human labour in small quantities of one hour or even half an hour. But further division becomes impracticable. And even this much of division is not possible in all cases. The difficulty of employing factors other than human labour in small and minute doses is very much more pronounced. The minimum technical unit of a factor is such that whether more or less of goods is intended to be produced that unit must be employed. For the production of an agricultural good, for example, some minimum area of land must be employed, just as for the provision of power to a factory an engine with some minimum horse-power must be used. For the production of even one unit of a farm good or one unit of a factory good the initial value of the land engaged or machinery bought is very large compared to the intended quantity of the produce. But once it is bought the production of additional units of goods does not require additional expenses on account of farm or machine. The units of farm or machine initially engaged already possess a capacity for larger production. Till the fullest utilisation of the capacity of the combining factors is achieved, the cost of production per unit of the goods goes on diminishing. The certain point referred to in the expression *after a certain point* is this point of the fullest utilisation of capacity. Up to this point costs go on falling. The diminution of costs means in fact increasing returns. *The law of increasing returns* operates then because of the indivisibility of the factors of production.

Law of Increasing Returns

★ The explanation of the operation of this law requires a more elaborate treatment than what we have attempted so far. The reason for it lies in the important fact that the technically minimum units of different kinds of factors are far from being uniform, so that in their productive combination the capacity of the units of some factor or factors gets fully utilised earlier than that of others. The law of increasing returns can be best explained by taking a practical illustration.

In every industry there is a combination of a number of factors. The entrepreneur owner of land, for example, cultivates it in the expectation of profit and is prepared to suffer losses. As a risk-bearing factor the entrepreneur is a single indivisible unit of a factor with whom are combined land, labour and capital. Let us suppose that the technically minimum unit of land is ten acres, of labour is one labourer employed whole-time, and of capital a few agricultural implements. Let the enterprise then start with one entrepreneur, one labourer, a piece of ten acres of land and a few agricultural implements.

/// The factor whose unit attains its maximum working capacity earliest is the labourer. Once he is employed on a fixed monthly remuneration the longer he works the less will be the cost of production per unit of the results of his work. But a time will come when his working capacity gets exhausted and if additional work is to be done, additional workers will have to be employed. The employment of additional workers will give rise to a new productive situation. There is now the possibility of the workers dividing the total work on the farm among themselves. Instead of a single man doing all sorts of work alone or two men doing half of each kind of work,

Technical Minimum of combining Factors

Division of Labour

some kinds of work will be taken over wholly by one man and others by another man. The loss of time and energy involved in moving from one job to another and that attendant upon the full adaptation to every fresh job will be eliminated. It is a common experience that when a man changes from one kind of work to another he takes time to get into the work fully. In this period his muscles and mental power cannot be made to attain their maximum speed of movement. Further, now that the worker concentrates on a few jobs he has a smaller field of activity to which he can devote his full attention and attain greater efficiency. Acquisition of proficiency, and saving in time are thus the two new advantages arising out of division of labour. But the possibilities are not fully exhausted yet. If more workers are added each one can be given that work to which he is naturally fitted. Special natural abilities can thus be used to the full

On a farm of ten acres however the exploitation of the advantages of division of labour will be limited by the area of land. If with one worker the product is ten bushels, with two men the yield will be $12\frac{1}{2}$ bushels per man. With three it comes to 14 while with the addition of the sixth man the average product is $17\frac{1}{2}$ bushels of wheat. (*Vide* table on p. 59) From this point onward the limitation of the area of land puts a limit to any further advantages of division of labour. At this stage the factor land attains its full working capacity. In order further to enlarge the possibilities of reducing costs the area of the farm will have to be increased before additional workers can be employed.

Let us suppose that the farm is increased first by ten acres and subsequently every time by ten acres. Every enlargement of the area of land enlarges the field of division of labour until every worker will have only one small job or a part of a job

to manage. Every small job can be further and further sub-divided until the work done by a labourer is reduced to a single repetitive movement of his muscles. At this stage the work becomes so simple that it can be safely transferred over to a machine. The machine can be depended upon to undertake simple repetitive movements. It can run for all time and can in addition do the work with a precision and regularity which are never possible in human labour. (The widening of division of labour thus gives rise to the possibility of the introduction of machines which lightens human toil, and puts in a far greater amount of work. Human labour may now be confined only to minding the machine. The threshing machine, the reaping machine and the ploughing machine may thus be introduced.)

(By the time the farm is four or five hundred acres in area the scale of production becomes enlarged. The entrepreneur can now employ a special accountant to keep only the accounts of the farm, a specialized salesman to market his product, and a special transport agency to carry the product to the market. Specialized and trained ability can thus be used and the efficiency of work increased. In this new situation of large scale production the entrepreneur finds new ways of economy in expenses. They have been termed as the advantages or *economies of large scale production*. Since these economies arise within the concern as it continues to develop they are called *internal economies*. With a large farm the entrepreneur will be required to buy his raw materials including manure, seed etc., in large quantities. The seller of these materials finding that he can clear his stock at once and save in the expenses of storing etc., can afford to sell the stocks at a relatively smaller price. The entrepreneur thus gets his raw materials cheaper.

Large Scale
Production

Further, if he has divided his farm into plots cultivating different seasonal crops, as soon as the crop of one plot is harvested and sold the money capital thus released can be used in purchasing raw material and labour for the second plot and so forth. The capital would seldom lie idle. A smaller money capital can be used over and over again. This will not be possible if he cultivates only one crop. Thus the interest on capital is reduced. Moreover, with a large scale of production the entrepreneur has more solid security to offer to the banks when he borrows. For this reason also his interest charges are reduced. This is another advantage arising out of large scale production. In the sale of his farm products also he finds that the organization set up for selling a small quantity of a single product can be used for selling other products. The marketing organization can thus be more fully used and its expenses distributed over a larger number and quantity of commodities marketed.

With the widening of the scale of production the entrepreneur must have machines of a larger working capacity. But the production of machines of a larger working capacity do not require proportionately larger amounts of labour and raw material. He can thus buy them at a relatively cheaper cost. Moreover, the bigger machines do not require a proportionately larger operating staff. In this case also he benefits.

Thus the entrepreneur derives the following advantages from large scale production :—

(i) Greater division of labour with all its attendant benefits.

(ii) The benefits of the use of machinery.

(iii) The advantages of cheaper purchases of raw materials and marketing of products,

(iv) The purchase of machinery at a relatively cheaper cost.

X

(v) The borrowing and use of money capital at a more advantageous rate.]

Often it so happens that when some factors have already attained their full capacity, further units of it cannot be added to the productive establishment because the market demand for the final goods admits of only a small increase in production relatively to the capacity of an additional unit of the factor. At the same time units of other factors have still to be fully exploited. In this case the former factor is overworked and costs tend to increase but the latter being still partially used tend to reduce costs. Over a range of output these increases and decreases in costs cancel one another out so that average costs remain constant. In such a case a firm is said to be working under conditions of constant returns.

When the concern grows to an enormous size, further avenues of reducing costs are exhausted because the entrepreneur's capacity for supervision and risk-bearing have reached their limit. At this stage where costs have been reduced to their minimum level the concern can be said to have grown to its optimum size. Whether this size will in fact be attained or not will of course depend upon the conditions of the market for factors and commodities. Under fully competitive conditions every independent firm in an industry will reach the optimum size where its costs are lowest.

As the competing concerns in an industry are reaching their optimum size the area in which the industry grows gives some advantages to it. Thus a new railway line may be constructed in the area reducing the cost of transport for the industry. Further the industry which supplies raw

**Constant
Returns**

Optimum Size

**External
Economies**

material will itself grow and offer the material at a lower price. Subsidiary industries may grow round about and feed the industry in question. All advantages and economies so secured are called *external economies*. There is also a limit to this type of economies. Their influence ultimately localizes the industry in a certain area.

There are two more possibilities of reducing costs. One is that of technical inventions which is an ever-present factor in a dynamic world. New types of machines and processes of production will replace the old ones and over long periods of time costs continually fall. The other factor tending to reduce costs is the possibility of a combination of firms. When several firms combine under a single grand corporation they are said to form a monopoly. The formation of monopoly by firms after they attain the optimum size with a view to reduce costs of production further is, however, different from another type of monopoly designed to maximize profits by controlling output and price. In the first case instead of independent agencies for the purchase and sale of goods for every firm there is now an attempt to establish a single organization for all. Capital is raised on the strength of the joint corporation and weaker and unprogressive plants are closed down. Even such a monopoly will however sooner or later exhaust its potentialities of further reduction of costs.

Vertical and Horizontal Combinations

[A combination or integration of firms may be either vertical or horizontal. A vertical integration is effected when in an industry firms which are complementary to one another combine. Thus the United States Steel Corporation now owns its own iron and coal mines, blast furnaces, transport agencies, steel manufacturing plants and the final sales organizations etc. All these separate units feed one another. Under a joint management their policies

are guided so as to be beneficial to all. Under horizontal combinations, on the contrary, we have competing firms manufacturing the same kind of product joined together. Thus cotton manufacturing companies interested only in the production of cloth combine with a view to pool their orders for cotton-yarn and benefit in the lower price at which all of them can secure their supplies of yarn. The logical end of the tendency towards securing economies of large scale production is thus the formation of a monopoly and elimination of competition. This opens up a number of very interesting theoretical and practical issues which it is not the purpose of this book to discuss.

Increasing returns mean a progressive diminution in the cost of production per unit and diminishing returns mean progressively rising costs. They are therefore also called the *laws of diminishing and increasing costs* respectively.

An offshoot of the law of diminishing returns is the theory of population. It is associated with the name of Malthus. Briefly, his formulation of the theory is as follows:—Population has a natural tendency to increase in geometrical progression every twenty-five years as shown by the series 1-2-4-8-16-32 etc. The means of subsistence on the other hand tend to increase in arithmetical progression shown by the series 1-2-3-4-5-6 etc. It is easy to say by putting the two series side by side that from the third period onwards population presses on the means of subsistence. In the first twenty-five years the means of subsistence are doubled. But in the next twenty-five years the increase is only by 50 percent. In the succeeding period the increase is only by $33\frac{1}{3}$ percent and thus goes on diminishing in each successive period. This shows the operation of the law of diminishing returns. From the third figure onwards the means of subsistence per head of

Theory of
Population

the population are reduced below the figure of the previous period. The standard of life thus tends to go down. Food supplies per head of the population having fallen, positive checks to population will begin to operate and to reduce population so as to secure a balance between the two. The positive checks are wars, epidemics, lowering of the standard of life, starvation, congestion in towns, bad sanitation, bad nursing, disease and death. Preventive checks may also operate in a community having foresight. These are late marriages, celibacy and prudential restraint.] But Malthus was not very hopeful about the operation of these checks and hence he thought that the prospect before humanity was grim.

In constructing this theory Malthus thought that the propositions and assumptions of the law of diminishing returns were applicable to his own country. [English land was fixed in area and showed a diminishing response to intensive treatment in his times. Food supplies could not be increased to sustain a growing population. The means of overseas communications were imperfect and the question of converting colonial lands into granaries for the mother country was not seriously considered.]

So far as Malthus' assumption of the fixity of land went he was obviously wrong. New lands were in fact made available and if English food supply was deficient it was possible to import food from outside. The question of world population and world food supply has not yet arisen. The only question now is that a country must have the power of producing some exchangeable wealth which it can use for purchasing foodstuffs from outside. [For a single country then the problem is not that of population and food supplies within the country, but of population and supplies of all sorts of goods some of which could be exchanged with

**The Error of
Malthus**

other countries for foodstuffs. The comparison should be between population and the total annual exchangeable wealth of a country. Malthus' prediction has also been proved to be historically incorrect when it was found that improvements in the technique of agricultural production made possible the indefinite postponement of the law of diminishing returns.]

[In his assertion about the rate of growth of population Malthus was clearly stepping out of the field of economics and entering the field of biology.] Economists have clearly no right to formulate generalizations in the field of biology unless they are biologists at the same time. Malthus was certainly not a biologist. It is however quite possible for an economist to make use of the generalizations already formulated by other biologists. Generalizations by biologists regarding the *natural rate* of the growth of population were not available at that time. Nor are they available now. Given an unlimited supply of foodstuffs how an unrestricted population would grow can only be ascertained by experiment in the laboratory. [The actual rate of growth of population is so much influenced by social, economic, political, religious and biological influences that no historical rate of increase of any community in any country can be called a natural rate of growth.] Test-tube experiments are impossible to perform in this case and hence any assertion about the *natural* rate of growth is extremely hazardous.

[Further, it is impossible to assert that over any period of years there is any complementarity between population and wealth or foodstuffs such that over-population corrects itself.] Positive checks like wars which Malthus thought would reduce over-population might in fact aggravate the problem because war eliminates the working populations and thus reduces the power of people to produce goods;

More than moral, a-moral checks like the modern birth-control methods might even produce a situation of declining population as in France and England. Whether a country is over or under-populated can only be a question pertaining to any given moment of time, without reference to the past or future.

The correct theoretical position regarding population can be presented as follows:—**The Correct Position** At any given moment of time, with given natural resources and material and non-material equipment of the community, there is such a number of population that, in co-operation with the other factors, it produces the highest per capita wealth or highest average returns. This is the optimum number of the population. This way of putting the theoretical position at once brings the theory of population into line with the propositions of the general theory of economics. If the actual number is less than this number there is under-population, if more there is over-population. Returning to the theory of production we know that all productive effort requires the co-operation of land, labour and capital. If out of these three factors two—land and capital—are considered at any moment of time as given, the use of these fixed factors would require a certain number of people to co-operate with them for producing the highest returns per head of the population. With given capital and natural resources, increase in the number of the people from one to the optimum figure would enlarge the field of division of labour and raise the per capita output. Any number smaller than this would diminish the possibilities of increasing output through increased division of labour. Every increase beyond this optimum would produce a lower per capita output because the field of division of labour is already exhausted.]

But by stating the theory of population in this way we have raised more difficulties than solved. For producing the highest per capita output the number that counts is not that of the total population but of the working population. [If the age-composition of the actual population is such that the working population is equal to the optimum required for the highest per capita output then only will the total population be optimum.] From moment to moment the material and non-material equipment changes requiring a change in the numbers to constitute the optimum. [The health and strength of the people as well as social customs and institutions affect the working capacity of a people.] Between any two communities a difference in these conditions would mean a difference in the requisite optimum number as well as in the maximum per capita output. Given the conditions of health and strength etc., the requisite optimum is a single determinate quantity.

The optimum number of population has always been considered by a number of economists as a *desirable* number. Hence with the treatment of the theory of population a large amount of irrelevant talk about the policy of the State in regard to population has been unfortunately mixed up. Whether the optimum population should be the goal of state policy is for the State to decide. With the State, however, there may be a number of other considerations like military strength, eugenics etc., by which to guide its population policy. Economists *qua* economists have nothing to do with these considerations.

There are one or two questions of economic importance often raised in remote or intimate connection with the theory of population which deserve some notice at this stage. The first question relates to the quantity and distribution

Population
Policy

Riches and
Poverty

of the annual wealth of the country among its inhabitants and the second relates to the problem of unemployment. In regard to the first question it is said that the problem of population is one of production as well as of distribution. They seem to be under the belief that in a rich country there is no over-population while in a poor country there is over-population. This belief is wrong and arises from the further belief that an output with which there is adequacy and plenty for all is denoted by the theory of population as a desirable output, and since in a poor country it does not exist there is over-population. The theory of the optimum population does not suggest that riches or poverty are at all relevant to it. There may be over-population among a community of multi-millionaires if a reduction of their number by one increases the per capita output, and no over-population in a poor country if a reduction in its number by one reduces the per capita output.

The theory of the optimum population has nothing to do with the question of the distribution of the annual wealth of a community among its members. How it is distributed among them depends on the institutional framework of society and the policy of the State. If it is unequally distributed it may raise issues affecting the social institutions and the tax system but not the quantity of population. Similarly, the existence of unemployment may only show that within the institutional framework of a society the co-operation of the factors of production does not take place continuously. It is difficult to apply the theory to the examination of the problem of population of any country. We have no satisfactory statistical method of finding the quantity and quality of natural resources, equipment and knowledge; much less would it be possible to say what population is optimum in relation to these non-measurable magnitudes. Any policy regulating the numbers of population alone

Distribution of
Wealth

would produce changes also in the capital equipment. All the factors act upon one another so that a policy directed to secure the optimum number of the population may end up in an extension of the policy of state control over the general economic activity of the community.

In the light of these remarks we shall now go on to consider the Indian Population problem. The table below gives the movements of the Population in India from 1872 to 1931.

Census	Population in Millions	Variation percentage since last census (Nominal increase)
1872	206.16	...
1881	253.89	23.2
1891	287.31	13.2
1901	294.36	2.5
1911	315.15	7.1
1921	318.94	1.2
1931	352.8	10.6

The increase in population for each successive census is partly due to the inclusion of new areas, partly to improvement in the method of enumeration and the rest to real increase. Deducting the first two increases from the total we find that the percentage rate of real increase has been as follows :

Year	Real Increase	Year	Real Increase
1872-81	1.5	1901-1911	6.4
1881-91	9.6	1911-1921	1.2
1891-1901	1.4	1921-1931	10.6

The rate of births per thousand has varied since 1885 upto 1931 from 35.83 to 34.38 and the rate of deaths from 27.44 to 24.89. In England and Wales the corresponding figures for the same period are 30.5 to 15.3 and 18.7 to 12.0. This shows that unlike in India both birth and death rates in England and Wales have continuously gone down to a considerable extent.

Writers on the problem of population in India have examined the question with a view to find out whether there is either a state or a tendency to over-population, and the general fact of poverty of large masses has been adduced as evidence in support of the contention that there is over population. The implication of this assertion is that the absence of an adequacy of income levels for maintaining a decent standard of life in India is a proof of over-population. But as we have already observed, the theory of optimum population has nothing to do with the adequacy of the means of livelihood and comfort for each and all.

Test of over-population

Indian Population

The test of over or under-population is to see whether a decrease or increase in the numbers increases the per capita output with given natural resources and material and non-material equipment. Both the latter items are difficult of quantitative determination. And even if it were possible to measure them it would still be difficult to say what number is optimum in relation to them. If as between two moments divided by a period of time the output per head at the first moment is x and at the second moment $x + y$ (y being a positive quantity), it would still not be possible to say that the number of population at the second moment is nearer the optimum than that at the first or that between the two moments there has been anything like a tendency for the numbers to move towards the optimum. We may be justified in

saying so only if factors other than the numbers of people are constant and population alone changes. Actually all the factors move, so that when we compare the two positions we are in fact comparing two entirely different and unrelated magnitudes. It is as if we are comparing the case of one country in which output per head is low with that of another country in which it is high and then saying that in the latter country the numbers are nearer the optimum than in the former. Increase in riches by itself shows no tendency towards the optimum.

The population in India is perhaps the largest in relation to her area when we compare it with other countries. This has led some writers to say that we have over-population. These very writers however hold the view that India is a rich country inhabited by poor people implying that our natural resources are abundant and unexploited. If it is so, the scope for the advantages of increased division of labour is not yet exhausted. It is then a problem of bringing about an effective co-operation between the two and not of checking the growth of population.

Some writers are alarmed at the rate at which population in India is growing while others find that the rate of increase compares not unfavourably with that of other countries. The rate of growth can be more or less than adequate only in comparison with the so-called optimum rate of growth. However there is nothing like an optimum rate of growth of population independent of other factors. Numbers affect capital equipment as equipment affects numbers. If our rate of growth is reduced, capital equipment may be affected, so that controlling the rate of growth by itself would not necessarily secure for us an optimum combination of factors of production.

**Comparison
with other
Countries**

Those who hold the second view will have to show, on the contrary, that there is a growing scope for division of labour in the country. That our rate of growth compares not unfavourably with other countries is no cause for satisfaction; nothing can be proved from such a comparison. The rate of growth in other countries may itself be satisfactory or not according as it keeps within or outstrips the scope for division of labour in those countries. The comparison would give us cause for satisfaction only on the untenable assumption that the scope for division of labour in both the countries under comparison is in proportion to the numbers added to their respective populations. Moreover it is not the rate of growth of population but the birth and death rates which are important in this connection. For if in a country A the birth-rate is 12 per thousand and the death-rate is 10 and if the two rates in another country B stand at 32 and 30 respectively, the surviving difference in both is the same. And yet the high mortality in B may suggest the existence of conditions adverse to human life. The question would then be as to why, if the birth-rate is so high in country B, its population does not increase rapidly.

It is thus impossible for us to attack the problem from the point of view of optimum numbers. What we can and should do is to discuss the quality of the Indian population from the viewpoint of productive efficiency. The working population in India which is supposed to be between the ages of 15 and 40 is 40 percent of the total. In France it is 53 and in England it is 60 percent. This is so because Indian death-rate is high and the average expectation of life is short. Early death reduces the working period of life. This reduces the period of productive labour expected from each person. Moreover, since our birth-rate is high, persons under the age of ten who form a very large proportion of the total have

Quality of
Population

to be fed from what the rest produce. The resulting small income per head itself reduces the expectation of life and makes even the working part of one's life less efficient.]

Further, the expectation of female life in India is less than that of male life because poverty and the existing social customs like purdah, make conditions surrounding female life much more adverse than those of male life. The birth of a female child is not looked upon favourably and female babies are neglected. The institution of early marriage brings on girls the responsibility of motherhood prematurely. This makes them succumb to wasting diseases. The girl-wife has in addition, to become the drudge of the family. She works from morn till even in cooking food, washing clothes, cleaning utensils and at other petty ends and odds of family necessity.

Poverty means a low standard of life, lack of nourishing food, and appalling conditions of sanitation in towns and villages which make the people liable to diseases. The adult starts in his life with a weak body and mind. He is burdened with the cares of maintaining large families at an early age. Living in insanitary surroundings he falls a victim to diseases. Frequent attacks of illness reduce the working days in his employment thus reducing his income which is already low. The inefficiency of municipalities has made towns liable to frequent visitations of epidemics. The conditions in the village are no better than those in the towns. The villages suffer from absence of roads, lighting, drainage, potable water-supply and cleanliness. The villager contracts habits of dirty life and becomes a prey to diseases.

[High birth and death rates also point to the same conclusion. We are in a hurry to get into this world and in equal hurry to get out of it. The standard of education is low and the percentage of literacy small. Most people have no knowledge of the modern scientific methods of

controlling the numbers. Children are born when there is no desire to increase the responsibility of the family. Born in poor surroundings the life of the youth becomes susceptible to adverse influences on health and is an easy victim of death. Child mortality is highest in India in relation to that in other countries.]

The solution lies in two directions. A comprehensive programme of education imparting instruction not only in reading and writing but also creating in the members of the community a capacity to think and act for themselves has to be formulated and carried through. This will increase the efficiency of labour. It will also create an aspiration to lead a fuller and richer life. The age-long contact with the soil, the monotony of the seasonal cycle, the absence of knowledge of the outside world and a series of misfortunes in the form of epidemics and famines have created among the people a fatalistic and resigned attitude towards life. It is this attitude of mind which kills all progressive instincts in man. The average Indian must be convinced from childhood that his life *can* be better and that the progress towards a hopeful and promising life lies in his own power. The other line of attack is investment of capital in improving the sanitation of town and village. Any programme of public works must give the first preference to sanitation. This will improve the conditions of health and strength of the population. In addition, capital should be invested in spreading the knowledge of scientific methods of birth-control. (A check to the increase in population will affect the numbers of the working population only after a long time. But the man-power reduced by birth-control will be made good by the increased strength and efficiency of the existing population and by the increased length of working life.) If the problem is attacked in the right manner the use of these methods will ere long be wide-spread.

CHAPTER V

THE COMMODITY MARKET

When an individual makes a choice between one hour's leisure and one hour's work and decides to work, he sacrifices his hour of leisure and rest. It is the price he pays for doing his work. His choice puts him on a higher level of his scale of preferences. No choice or exchange is undertaken unless it leads an individual on to a higher level of his preference-scale. In addition to such choices, which are purely personal, an individual is everyday exchanging portions of his money income for a number of commodities and services. Every exchange takes him higher up on his scale of preferences. When he ceases to enter into any more exchange operations he does so because he feels that they will, instead of taking him higher, in fact drag him to a lower level on his preference-scale. That level when further exchange is about to cease is the equilibrium level for him.

Exchange Between Two Individuals

When two individuals exchange between themselves each other's goods and services every individual parts with what is less useful to him in exchange for what is more. Exchange between them goes up to a level where both parties begin to doubt whether further acts of exchange will benefit them. The amount of goods that one party gives to the other in exchange for a unit of the goods of the second party may be called the price of the second party's good. The price and the quantities of goods exchanged will be determined by a process of bargaining between them. When they are determined and exchange

is effected no further action follows and both parties are in equilibrium. The last units of goods bought and sold have the same utility for both. That is to say the marginal utility of the goods obtained is equal to the marginal utility of the goods parted with by both. Each one has risen higher up on his own preference-scale. The market for the goods and services exchanged can thus be said to be in equilibrium.)

In the actual world a large number of commodities and services is exchanged among a large number of buyers and sellers. If exchange takes place between goods and services without money there is barter. In all barter transactions everyone who buys commodities is at the same time a seller of his own commodity. Money does not really introduce any significant difference in the situation. People accept money in exchange for goods and services because it is useful to them in purchasing their own supplies of goods. A single transaction is thus split up into two parts. When once people accept certain quantities of money for their goods, they may or may not use the whole quantity to purchase other goods. The market supplies of money in the subsequent exchanges may diminish. But this is a new situation worth studying by itself.

Commodities are available in the market only after they are produced. Everyone who produces commodities does so in the expectation that he will be able to sell them. In a world based on division of labour people undertake those productive activities which promise to yield the highest reward within the set of opportunities available. During their productive activity they enlist the services of factors and pay them in terms of money. The minimum prices people expect to secure for their products must at least

**Barter and
Money**

**The Market
Supply**

cover the expenses on factor services and leave some margin of profit for themselves. There is, therefore, a limit below which they will seldom be prepared to exchange their goods for money. And when they do in fact sell goods for money they are satisfied that it was the best thing they could do under the circumstances. If they suffer losses they will reduce their output of goods and services and next time bring less of them for sale. This goes on day after day. The market process is continuous. Past expectation determines the present quantity of goods in the market and present experience together with the revised expectations about the future determine the subsequent course of productive activity.

At any moment of time producers who come with given quantities of commodities in the market will be prepared to offer more or less of them in response to higher or lower prices. If the prices are low they may reserve a part of the supplies for sale in the future. If they are high they may draw on the past reserves and increase the supplies. How much of the given quantities of commodities will be offered in the market will thus depend on what prices are available. For an individual seller of goods we can construct a *supply schedule* of his commodity giving the quantities offered by him at different prices. The price at which a determinate supply of the good is offered is called the *supply price* of that quantity. The list of supply prices and the quantities offered corresponding to those prices is called the supply schedule. We can construct the supply schedule of the whole community for a certain commodity by simply aggregating the individual supply schedules of all the sellers. The procedure is the same as was followed in the case of demand schedules. The supply price is a price at which a seller is *willing* to sell a determinate quantity of his goods. It is not the

**The Supply
Schedule**

same as the expenses or costs of his productive activity though these will influence his willingness to sell at different prices.

¶ A slight change in price will induce the seller to change the quantity of the commodity he is willing to offer for sale. The new price is called the marginal supply price of that quantity. Similarly a small variation in price may induce a change in the quantity demanded. The new price at which a different quantity of the commodity is demanded is called the marginal demand price of that quantity.]

We have already seen that the price one pays for buying a certain quantity of a commodity is equal to its marginal utility. The larger the quantity the lower is its marginal utility, and it will be bought only at a lower price. If the price rises the quantity demanded will be smaller. *Demand thus varies inversely with the price.* This is known as the *law of demand*. On the other hand, the supply of a commodity increases as the price rises and diminishes as it falls. *Supply varies directly with the price.* This is known as the *law of supply*. Conversely, if demand increases, calling forth a larger supply, the price will rise; and if demand falls, making the available supply superfluous, price will fall. ¶ These laws, like all other economic laws, are true on the assumption that other things (such as the tastes of the individual, and the rate of returns to productive effort) remain unchanged.]

We are now in a position to undertake an analysis of the process by which the price of a single commodity is determined at any given time in a fully competitive or what is called a perfect market. But before that it is necessary to understand the concept of the market.

In the popular mind the word market is associated with a certain place where goods are bought and sold and it is quite natural that this should be so because almost all daily transactions with which we are concerned are entered into in such a place. But in economics the term market has a wider meaning than this. Wherever there is an act of exchange a market is said to exist. An individual exchanging an hour's leisure for an hour's work is in this sense a market for the exchange of his time. Similarly all dealings in the world regarding the purchase and sale of raw cotton constitute the cotton market in so far as all the buyers and sellers in different countries compete with one another and can communicate with each other their bids and offers. We may similarly have a world market for wheat or iron or stock or money. In so far as buyers and sellers compete with and communicate their bids and offers to each other in a small area, we have only a local market. There may, for example, be a local market for vegetables or fish. Location is in this case implied in the word market. But it will be clear that location is not the important consideration in this concept.

Let us assume a perfect market. It implies a number of buyers and sellers and a free communication between all of them with a view to know their mutual bids and offers. It also implies that there is a perfect knowledge on the part of buyers and sellers of the total stock available for exchange and the quality of the stock. In such a market there is only one price for the uniform supply of a commodity at which it is sold, and the same price is charged to all the buyers without discrimination.

In such a market the value of a commodity is determined at any time by the inter-action of the forces of demand and supply. Let us suppose that the commodity in question is

**The Market
Process**

sugar and that there are a number of buyers and sellers wishing respectively to purchase and sell it. Let the demand and supply schedules for sugar be as follows —

Price per seer (annas)	Total demand (seers)	Total supply (seers)
10	100	400
9	125	325
8	135	275
7	145	200
6	160	160
5	200	140
4	300	100

We have assumed that the price varies only by one anna every time. A change of price from ten to nine annas increases demand to 125 seers and reduces supply to 325 seers. Nine annas is the marginal demand price for 125 seers and marginal supply price of 325 seers and so on for every price and quantity.

In such a market the negotiation of sale and purchase proceeds by the method of bids and offers. Sellers are naturally anxious to secure the highest price for their commodity. Buyers, on the other hand, try to purchase their supplies at the lowest price possible. Let us suppose that the sellers start by offering their supplies at the price of ten annas per seer. From the table we see that at this price 400 seers of sugar are offered. But since the buyers in general are not anxious to buy sugar at this high price only a few of them who are most eager to have sugar come forth to purchase it. But their total demand amounts to only 100 seers. All sellers do not in this case succeed in selling their stocks. Some of them in their eagerness to secure customers for themselves now quote a lower price, say, nine annas. Those, however, who do not

find this price worth their while to accept, withdraw from the market so that only 325 seers are offered for sale. But at this price only a few more buyers are tempted to purchase their supplies raising the total demand for sugar to 125 seers. It is clear that at this price also the supply is larger than the demand. The more eager sellers would now find it necessary to quote a still lower price.

On the side of the buyers the process starts by some of them offering to purchase sugar at a certain price. Let us suppose that at four annas per seer buyers as a whole are prepared to go in for 300 seers. But at this price only the most eager sellers offer their supplies for sale. The total supply offered is only 100 seers. Many buyers in this situation will have to go unsatisfied. They will, therefore, try to out-bid one another and some of them quote a higher price, say, five annas. The least anxious buyers withdraw and a few more sellers come in. Demand falls from 300 to 200 seers while supply increases from 100 to 140 seers. The more eager buyers now quote a still higher price.

Thus the buyers and the sellers in the market go on making bids and offers. The process of bargaining continues till the amounts demanded and supplied at a certain price are equal. The table above shows that at the price of six annas per seer 160 seers are demanded and supplied. There is no incentive for further bargaining and competition on either side. The sugar market is in equilibrium.

[The price of six annas is the equilibrium price at which demand and supply are equal. It is the marginal demand price of 160 seers of sugar and the marginal supply price of the same quantity. Thus at any time the price of a commodity will be

determined at that level where the marginal demand price and the marginal supply price of the quantity exchanged are equal.

It is wrong to suppose that at the equilibrium price all the quantity of the good available in the market is sold or that all demand for it is satisfied. But sellers who retire from the market feel satisfied with their choice of retirement at the moment; so do retiring buyers. Those who have bought and sold the goods also feel satisfied at the moment with their conduct. No further action takes place in the market and hence the market is said to be in equilibrium.

The above analysis however refers to a commodity which could be stored for future sale. Not all goods can thus be stored. In the case of readily perishable goods like fresh vegetables there is no possibility of reserving them. Whatever quantities are brought to the market must be either sold or allowed to perish. There is thus no supply price in their case. Whatever the price, sellers are disposed to clear their stocks. Price in this case will be entirely determined by the conditions of demand. If demand is strong price will be high, if weak it will be low. Any price will in this case be the marginal supply price of the same stock. Most commodities however are more or less durable, and this makes our analysis valid for them. The supply schedules of these commodities will of course vary according to the degree of their durability.

Our hypothetical demand schedule will not remain unchanged over a period of time. There are a thousand and one influences operating on the demand conditions for a good. For example, demand for it may increase because population has increased, or/and the taste for it has increased or/and rival commodities have risen in price driving people to

**Price under
Changing Demand**

buy it in larger quantities, or/and people's incomes have increased. A change in these factors in the opposite direction will cause a fall in demand. Demand schedules will thus change producing changes in the equilibrium price and quantity.

At any moment of time the marginal demand price is the price which measures the marginal utility of the quantity demanded. This will be true of all times. We cannot however make a similar statement regarding supply. The marginal supply price measures only the marginal willingness of sellers to offer a certain quantity in the market. But at any moment of time the marginal supply price will not necessarily be equal to the marginal cost of production of the quantity of a good supplied. This is because in a short period the quantity of a good cannot be varied with changes in its market price. The experience of the vegetable sellers on any day will however lead them to revise their actions for the next day. If today's price is low, tomorrow they are likely to bring smaller supplies. The second day's supply will again be fixed for that day and so on.

In a short period the quantity of agricultural commodities, for instance, cannot be increased. Once the season's supply is harvested it is there ready for sale. Whether more or less of it is offered for sale in the market depends upon the future expectation of prices, expenses of storage if the crop is to be stored, its durability and its cost of production. If expectations of future prices are not rosy and if storage expenses are heavy in relation to expected prices, producers may even be prepared to sell the commodity below its cost of production and suffer a loss. If on the contrary demand is very strong, the possibility of securing

good profits will drive producers to raise the supply price much above the cost. The market conditions in one season will influence the decisions of producers to produce more or less output in the next season. It must be noted that the total volume of production of agricultural goods is not capable of large variations even over a period of some seasons. The same land may be more or less intensively cultivated, but variations in total produce brought about in this way will not be very appreciable.

It is so also in manufacturing industries. The quantity of manufactured goods cannot be suddenly increased as a result of a rise in their prices. New factories take time to come into existence. And before they come to exist, a rise in price will bring to the producers high profits. If, on the contrary, demand is weak and price low, manufacturers will not be able to reduce their factory establishments suddenly and will continue to produce even at a loss. Over a period of time the number of factories will of course change. But till it does so change, the benefits of a high price as well as the adverse effects of a low price will fall on the producers. In the manufacturing industries owners of factories may work the machinery more or less intensively. But even then the influence on total output will not be appreciable. It will thus be seen that over a short period *demand has a greater influence* on price than supply since the latter is relatively inelastic.

The statement that in the short period the volume of production is not capable of wide variations or that it is inelastic is however not true under all conditions of production. If machinery and labour are lying idle the volume of output can be increased until both are fully employed. So also if a good deal of cultivable land is lying idle. After the full capacity of the productive unit is used up, however, the volume of output becomes inelastic. Output can

similarly be diminished by throwing factors out of employment. But upto the use of full capacity, the cost of production per unit usually falls. If producers reduce output below the optimum point they will experience rising costs. They will therefore not be inclined to reduce output unless prices are far too low.

In the long period however the volume of production can be adjusted to meet a given demand in the market. *We have seen that it takes a long time for new factories to be erected. The manufacture of machinery and the construction of buildings to house it require a long time. Similarly if the output of, say, rubber or mangoes is to be increased the new trees planted will take at least four or five years before they yield their fruit. Likewise it is not easy to give up the working of a factory merely because the present price of the product is low. The entrepreneurs will put up a struggle to keep on in their lines until they find that by remaining in them any longer they will lose heavily. In the long period then the productive establishments gradually change so as to adapt their number and size to the conditions of demand. The number of factory establishments can be increased or diminished in any given industry in response to demand conditions. In the long period every entrepreneur will be able so to adjust the scale of output to demand that he is not only able to meet his expenses, but also to secure some minimum profits. Unless his minimum expectations of profit are fulfilled he will, in the long run, leave the industry and choose some other line. In the long run then the price of the product will have to cover the expenses on all factors including the profits of the entrepreneur. The tendency in the long run will thus be for the price to be equal to the cost of production. The volume of output which in the short period is inelastic, becomes elastic in

the long period. *Over the long period then The cost of production has as important an influence on the price as the conditions of demand.* This brings us to the discussion of costs.

When a person decides to enter into any particular line of economic activity as, for example, the manufacture of cotton cloth, he has to incur certain costs in installing the machinery and in housing his factory establishment. Further he has to employ some minimum number of persons to look after the working of the factory. When once capital is invested in building and machinery, it cannot be recovered immediately from the sale of the first lot of goods manufactured. The investor will be able to get the money back only after a long time from the profits of the concern. Out of the annual profits he can set aside a part as a depreciation fund accumulating during the expected years of the life of the machinery. The invested value can ultimately be recovered as a depreciation fund. The investor has a choice of investing his money in the cotton factory or not so investing, only before he commits himself to the building of the factory. Then he ceases to have further choice until the depreciation fund is equal to the value of the original investment. When it is so he can choose either to reinvest it in the factory or elsewhere. If his business fails badly he may not be able to get the whole or even a major part of his invested capital. During the life of the machinery etc., he has to pay interest on the capital and the salaries of the minimum number of men employed. These charges must be incurred whether the factory works fully or not. There is no choice in their case. They are called *supplementary, overhead or fixed costs*. They are obligatory.

But when the machinery is installed the individual in question has to incur further recurring charges on

buying raw materials and labour to feed the factory from day to day. If he does not wish to run the factory to its full capacity, or to any capacity at all, he may not buy materials and labour. He has of course the choice still with him of fully or partially working the factory and hence of incurring or not incurring charges on account of labour and raw material. These are called *prime or variable costs*. They are not obligatory.

Prime costs and supplementary costs together form the total costs. They include also the expected profits of the entrepreneurs. If we divide the total cost by the number of units of output produced we get the average cost. This average will be high if output is small and low if it is large. The rate at which total cost changes with changes in the volume of output is called the marginal cost. In some industries marginal costs vary over a certain range in direct proportion to changes in output. Over this range they are constant. But in so far as some costs do not change over that range the average cost will fall even though the marginal cost is constant. Beyond this, owing to the fixity of the machinery the marginal cost will rise. The average cost will fall even though the marginal cost rises till the marginal cost is equal to the average cost. Hereafter both rise. In some industries marginal costs fall with changes in output over a range. Average costs in this case will fall more steeply over that range than in the first types of industries. But beyond this range marginal costs will rise. The point where average costs are lowest may be called the optimum point. With a given factory establishment and a given set of prices of factors there is only a single-determinate optimum point. If the scale of production changes involving a change in the magnitude of the productive establishment, the optimum point will also change. In a short period the establishment cannot be changed. But

Average and Marginal Costs

over a longer period the scale of the establishment may be adapted to the needs of the market.]

Business concerns are called firms. It is to the advantage of every firm to produce its output at the lowest cost given the price of the output. [Since the average cost falls until it is equal to the marginal cost every firm will try to produce output upto that point where the marginal and average costs are equal so that the cost per unit of the output is lowest in relation to the given market price. At any time every firm endeavours to find whether to produce more or less output and hence to incur more or less costs. No firm incurs additional costs in producing an additional output unless it knows that the price is at least equal to the additional or marginal costs incurred. The price may or may not cover the fixed costs which the firm has to incur whether it produces any output or not. But since the choice of incurring or not incurring expenditure can be exercised in regard to the marginal cost price always tends to be equal to the marginal cost.]

Costs are the sum total of the prices paid to factors of production for their services in production. Factors always offer their services in the market at certain prices. They depend partly on the competition between units of substitutable factors and partly on the opportunities available to them for remunerative work. Unless the prices so determined are paid to them their services are not available to any given industry or firm. [The price of the output must then be at least equal to the sum total of these prices. The entrepreneur is also a factor of production rendering the service of bearing risks. The profit he expects is the price which society pays for his service. Costs thus become determinants of price.]

✧ The production of a commodity may be subject either to the law of diminishing returns or to the law of increasing returns. We have noted that diminishing returns mean increasing costs and increasing returns mean diminishing costs. We shall examine how the price of a commodity is determined when its production is subject to the different laws of returns.

We shall at the outset assume that demand conditions are given. If under conditions of perfect market, that is, a market in which there are a number of competing buyers and sellers, a commodity is being produced under the law of increasing or rising costs, it means that among the factors combining in production some are inelastic in supply while the rest are elastic. Under such conditions beyond a certain point marginal costs will go on rising. This will raise average costs also. A competing entrepreneur working under these conditions always endeavours to find whether it is worth his while to increase the produce or diminish it. Additional produce can only be secured at a higher cost. He would not therefore incur it unless the price is at least equal to this additional or marginal cost. If the price is higher he will get large profits. But the competing producers will in that case increase their production by increasing cost until all come to a position where a further increase in production means a higher marginal cost than the price. Each will therefore go up to a level where the two are equal. If price is higher than the marginal cost, output will be increased. But every successive increase is got only at an increasing marginal cost. The incentive to increase production will be absent at that point where the two are equal. The price thus established is the equilibrium price.

Continuing our previous assumption, if a commodity is being produced under the law of falling costs, producers secure all the economies of large scale production by increasing their scale of output. In our chapter on human efforts we saw that increasing returns or diminishing costs occur as the quantities of indivisible units of factors are increased in ascending order of their capacity until the factor of the largest unit capacity, namely the entrepreneur, is fully employed. The scale for which the costs are lowest is that at which the entrepreneur is fully employed. There is however no logical necessity for a firm to reach this particular optimum point. Whether the firm will expand more depends on the price of the product. If for example, a given increase in scale reduces cost per unit from one rupee to fifteen annas as the output is enlarged from 500 to 525 units, while the demand price of 500 units is Re. 1/- per unit and that of 525 units is $14\frac{3}{4}$ annas per unit the scale of output will not be increased. Thus every firm will try to adopt that scale of output at which, given the price of the output per unit, the cost is lowest. Further increase in output would reduce price more than cost. But we have seen that with a given scale of output the point where the average cost is lowest is also the point at which marginal and average costs are equal. If the price is above this cost, output will be expanded. If any individual producer charges a price higher than this lowest cost, competing producers will quote a lower price and draw the demand to themselves. Therefore, all competing producers charge the same price to their customers.

So long as costs are falling, increasing quantities of the output will be offered in the market at lower and lower prices. The supply prices will thus be falling upto the limit where the demand price for the quantity asked for is just equal to its supply price. This price, under

competition, will be equal to the lowest average cost and the latter will be equal to the marginal cost. Any output lower than this would mean higher costs per unit and any output bigger than this with a given capacity of the equipment would mean rising costs. The equilibrium price of the output would thus be equal to the marginal and average costs.

In those cases where the cost remains constant over a range of output there will be the same supply price for any output offered within that range. Equilibrium will be marked at that level where the price is equal to the average cost.

The above analysis was concerned with the demand for Price and and supply of a single commodity. The Joint Demand same considerations apply to every commodity or service in the community. In the actual world commodities are, in many cases, jointly demanded. Thus the demand for a dinner means a demand not only for rice or wheat but also for dal, ghee and condiments. The demand for tea means, demand for tea-leaves, sugar, milk, cups, saucers and spoons. When we demand a house we want doors, window-bars, tiles, cement, stone and glass. Every change in demand for dinners or tea or houses, will mean a change in demand for all the constituent goods. Their prices will thus simultaneously change though all may not change in the same proportion. Much will depend upon the elasticity of supply of the constituent goods. In the long run, however, the price of every good will be equal to its cost of production.]

Similarly goods are seldom produced singly. The production of corn entails also the production of hay and fodder. Lead and silver are found in the same ore; silver in this case is a by-product. In these circumstances

Price and
Joint Supply

it is many times difficult to find how much any one of the jointly produced good has cost. If the demand for lead rises and more lead is produced the production of silver simultaneously increases even though the demand for silver has not risen. In such a case silver will have to be sold at a lower price. The prices of silver and lead together will have to cover their joint costs of production. The price of each taken singly will not be equal to its own cost of production.]

So far we have discussed the phenomenon of price-determination under conditions of full competition. In such cases the action of every one is influenced by the actions of others. No one single producer or buyer will have the power of influencing the market. In his endeavour to get the highest profits every producer would end up by securing the profits which just make it worth his while to continue in that line. In the real world markets are seldom perfect. There are obstacles to the free communication between buyers and sellers. Thus buyers become attached to particular sellers sentimentally and every producer tries to introduce some speciality in his product. Full competition becomes impossible. As an extreme case we can think of the existence of a single producer or a single buyer of a commodity. Where the entire output is controlled by a single individual or organisation we have a *monopoly*. Where the entire demand comes from a single individual or organisation we have a *monopsony*. Situations are conceivable in which a monopolist meets a monopsonist in the market. We shall first undertake a brief investigation into the nature and effects of monopoly.]

A monopolist has perfect control over the quantity of the output offered for sale. But he has no influence on demand. In his endeavour to secure the highest profits he

has to take account of the demand conditions and adjust his sales accordingly. The extent of variations in demand is determined by its elasticity in response to given price changes. [Let us suppose that a monopolist can hit upon the price or quantity of sale by a process of trial and error. He may try first to find, by fixing a price for his good, how much of it is bought, or alternatively he may fix the quantity to be sold and find out the price at which competing buyers clear the stock. It is never possible for him to fix both. He cannot say that the public must buy this much quantity at this price. He can fix either the quantity sold or the price of the commodity. Thirdly, he may discriminate between buyers and buyers and charge varying prices according to the individual intensities of demand. Which of the three alternatives gives him the highest net receipts will be determined by a process of trial. For the sake of convenience, we shall tabulate the results of his efforts. Let us suppose that our monopolist is a producer and seller of tea.

1	2	3	4	5	6
Price per lb. in annas	Quantity demanded lbs.	Total receipts in annas (1 × 2)	Cost per lb. in annas	Total cost in annas (2 × 4)	Net receipts or profits in annas (3—5)
17	25	425	6	150	275
16	35	560	6½	227½	333½
15	50	750	7	350	400
14	100	1400	8	800	600
13	125	1625	9	1125	500
12	135	1620	10	1350	270
11	145	1595	11	1595	0

A glance at the table will make it clear that the profits of the monopolist are highest when he sells 100 lbs. of tea. The monopolist is always on that margin where he considers

Price under
Monopoly

how a small change in output produced by a small increase in costs affects his net receipts. [So long as he feels that the increase in output increases his receipts by more than the increase in costs, it would be to his advantage to increase the output. He will clearly stop at that level where his marginal costs are equal to his marginal receipts. Beyond this point receipts are lower than costs. Below this point receipts are higher than costs. Monopoly equilibrium will thus be determined at that point where marginal costs are equal to marginal receipts or revenue. In such an equilibrium marginal costs are not equal to the price but only to marginal receipts. Price is higher than the marginal cost.]

At what level price is determined will depend upon the nature of the demand and supply schedules. Situations are conceivable in which monopoly price may be equal to competitive price or even lower. But into these questions we need not enter here.

Monopoly conditions may be produced by a combination of competing firms, or by the fact that the entire quantity of a particular factor is owned by a single individual or an association, or because the state takes the sole charge of production and supply of an economic good. [Monopoly in the production of a commodity for which demand is inelastic, as in the case of necessities of life, brings very high profits. The people are forced to pay too high a price for having it. In such cases state regulation of monopoly has been considered desirable.]

[An interesting case of monopsony occurs in the labour market when workers are not organised in unions for collectively negotiating with employers but where the employers act almost as if they have formed a union by tacit understanding. Individually a worker is in a very weak

**Monopsony and
Price**

bargaining position. In this case the worker may get a wage below the marginal productivity of his work and the employer will secure more value from him than what he pays to the worker. There the employers secure a monopsony profit.]

[Where the workers also are organised in strong and vigorous trade unions we have a situation in which a monopolist and a monopsonist face each other. Competition is absent from both sides. This is a case of *bilateral monopoly*. It is difficult to say at what level the price of labour will be determined in this case. If the maximum offer made by the employers does not come to anywhere near the minimum which the trade union is prepared to accept, there will be no exchange and both sides will temporarily drop out of the market. But if the minimum offer of the employers and the maximum terms of the union are near each other, within these two limits, there is a likelihood of exchange taking place at some rate. Whether the rate is nearer the employers' minimum offer or the union's maximum demand depends upon their respective bargaining strength and skill.

* We have seen how the community's demand schedule for a commodity shows what quantities of it the community is prepared to buy at different prices. Given the price there is a determinate quantity of it bought by people as a whole. The price multiplied by the number of units of the commodity bought gives us the total expenditure of all buyers on that commodity. But the community spends the rest of its income on other commodities also. Given their prices and the community's demand schedules for the different commodities its expenditure on them can also be determined. Given the whole price-structure

General Equilibrium and Changing Prices

it is thus possible to show how the community allocates its expenditure on different items. If there is a change in the price of any one good, expenditure on that good is likely to change. But this causes a change in the community's expenditure on other goods and hence in their prices. Change is likely to take place in the price-structure also as a result of changes in individual incomes. The whole price-structure is thus simultaneously determined. There is thus a general equilibrium of exchange. With every change in the price of a good and the income of an individual there is a simultaneous redetermination of all prices, and hence a new level of general equilibrium.

If the community's demand for money increases, all prices will fall and the money balances with individuals will increase. Conversely, if there is a general preference against money all prices will rise and money balances will fall. In either case all prices will not be equally affected. How far they will be affected depends on the location of different commodities in the scheme of consumption of the community.

A change in prices causes a change in the profits of entrepreneurs in different lines. Some will suffer losses and some will make abnormal profits. In consequence a reallocation of resources will take place as between different lines of activity so as to increase the supply of factors, and therefore production, in those lines where there are high profits, and to decrease them in those lines where profits are low. The whole productive system and allocation of factors are thus continually changing in response to changes in the level of general equilibrium.

CHAPTER VI

THE FACTOR MARKET

Distribution of Incomes This chapter discusses the manner in which the prices of the factors of production are determined. The prices which the factors receive for their services constitute their incomes. The owner of capital receives interest for allowing the use of his capital as the workers receive wages for their manual and brain work. These incomes the factors spend on purchasing goods and services produced by themselves. With division of labour however, everyone sells his services and buys some-body else's. I buy others' goods and services as others buy services produced by me. Ultimately of course everybody buys from the same common stock brought to the market for purchase and sale. The money-incomes which factors receive are thus ultimately realised in goods and services bought out of the annual wealth produced. And every factor receives from this stream of annual wealth a portion which its own money income can buy. Thus the annual stream of wealth gets distributed among all the factors in proportion to their individual incomes originally realised in money. And since in economics real goods and services form the ultimate objects of desire expressed through the willingness of persons to buy them, this division of economic theory has been called the *theory of distribution*.

Meaning of Distribution Students often interpret the word distribution in its literal sense and suppose that the annual wealth produced is collected together at some place and then distributed to different people in the community. This is due to lack

of acquaintance with the scientific use of the term which denotes the phenomenon of the *pricing of factor-services*. Fundamentally the propositions of the last chapter are applicable to this chapter also since the market behaviour of the parties concerned is determined by similar forces.

Entrepreneurs anticipate certain prices for their goods and services. These prices determine the **Prices of Factors** magnitude of profits which the entrepreneurs receive. Profits are the difference between costs and prices which the entrepreneur desires to maximize. Every entrepreneur will see to it that what he pays to the factors in exchange for their services is at least not more than what he expects to secure by selling the products of their services. The utility to the entrepreneur of the service of a factor is equal to the value which that service is expected to produce. It is not the direct satisfaction which the entrepreneur receives but the valuable salable product which the factor yields. The utility of a factor means its *productivity*. In equilibrium prices of factors will be neither more nor less than their marginal productivities, i.e., the changes in the value of the total product secured by the changes in the quantity of the services they render to the productive process. It is this principle which is elucidated in detail in this chapter with reference to the broad categories of factors namely land, labour, capital and entrepreneurship. The remunerations or prices received by them have been called rent, wages, interest and profits respectively.

It has been made clear that the demand for the factors is limited by the expected value of the services they render to the productive process. Demand for them is not direct but *derived*. Their prices are determined by the demand for and supply of their services in the same manner as the prices of the final commodities.]

Factors of production are in some cases substitutable, in others not. Factors which are substitutable have a range within which they compete with one another regulating each other's prices. Factor prices are thus *interdependent* like commodity prices. No factor whose marginal productivity is lower than its price will be employed in preference to a competing factor whose productivity is high. Substitution will then be carried upto the point where the ratios of their marginal productivities to their prices are equal. In equilibrium then the

$$\frac{\text{M. P. of A}}{\text{Price of A}} = \frac{\text{M. P. of B}}{\text{Price of B}} = \frac{\text{M. P. of C}}{\text{Price of C}} \text{ etc., where A, B, C}$$

are factors of production. For dealing with the problem of the determination of the price of any one factor it is necessary at the outset to assume that the prices of other factors remain unchanged, though in the factual world a change in the price of one factor produces a change in the price of competing factors.

All factors as well as commodities are ultimately owned by men. Whenever factor services or commodities are offered for sale in the market the persons owning them have to decide whether more or less of them are to be sold at the ruling market prices.

In the light of these considerations let us study the theory of the determination of wages. Let us make a few simplifying assumptions as follows: (i) That all available labour supply offering itself in the market is homogeneous so that any one unit of it can be easily substituted for any other; (ii) that the workers and entrepreneurs have perfect knowledge of market conditions; (iii) that there are no physical obstacles to the free movement of labour from place to place and that workers are willing to move in search of better remuneration; and lastly (iv) that competition for

remunerative work is unfettered by any restrictions, such as those imposed by a Trade Union.

In such a perfect market, the supply of workers depends upon (a) the number of workers offering themselves for employment, (b) the number of hours of work they are willing to work, (c) the intensity with which they fill every hour of work, and (d) the remuneration which is offered to the workers to induce them to work. Broadly speaking the higher the remuneration or wage rate offered, the greater is the supply of workers on the market, while a lower wage rate reduces the supply.

The action of workers in withholding their offer of labour power depends upon their expectations of the future course of wage rates and their ability to go without work presently. The power of workers to forego the chance of remunerative work is limited since in a majority of cases they have an alternative only between having some wage and virtual starvation. Our statement has therefore to be taken as a broad and general tendency only. It would be possible for us to construct a supply schedule of labour giving us the changes in the offers of labour power in response to changes in the prices offered in the market.

On the side of demand we have a number of entrepreneurs competing with one another to secure the necessary labour supply. To a high price stipulated by labour the entrepreneurs would respond by reducing their demand and conversely when the offers are made at lower prices their demand would increase. But the action of the entrepreneurs will not be governed merely by the changes in the offer prices of labour but also by its marginal productivity. The lower the supply of labour the greater is its marginal productivity to the entrepreneurs. The greater

the supply of labour which an entrepreneur already possesses the lower will be the utility to him of any further additions to it. Every entrepreneur always debates in his mind as to whether he should engage more or less labour to combine it with other factors of production.

Marginal Pro-
ductivity Theory
of Wages

 [So long as the entrepreneur feels that an increase in the number of workers employed for combination with given quantities of other factors increases the value of the product by more than the costs incurred in paying labour, it is to his advantage to buy more labour. We have seen that as a rule beyond a certain point the larger the number of workers employed the lower will be the value added to the total product by the last worker taken up. He will be in doubt about the further advantage of employing more workers where he finds that the value added by the last worker to the total product is just equal to the wages paid to him. Further addition to the number of workers will then depend only upon the price of the final product. If it rises it is worthwhile engaging more workers, otherwise not. In any case his action in varying the quantity of labour bought goes up to that margin where the value added by the last worker and that paid to him are just equal. The workers' wage is thus equal to the value of his marginal product.]

The action of the entrepreneur which has a decisive influence on the market is the action at the margin. No entrepreneur will give more to a worker than the value of what the worker is expected to add to the product. Further, the entrepreneur will not pay more in wages to any worker than what he pays to the last worker added to his establishment, according to the law of indifference. [The wages paid to the last worker will be equal to the expected value which he adds to the total product.] If any

worker demands wages higher than this the entrepreneur will find it immediately to his advantage to replace him by one who accepts a lower wage. Thus the wages of all workers will be equal to the marginal productivity of the workers in general. But no entrepreneur will be in a position to pay anything less than their marginal productivity because workers in that case have the alternative of offering their services to other entrepreneurs. The competition among entrepreneurs will force the wage rate up until it is equal to the expected marginal productivity of the workers. This is the *marginal productivity theory of wages*.

In the actual world none of our original assumptions are fulfilled. If workers are ignorant of market conditions entrepreneurs will take advantage of this ignorance and pay the workers a wage which is lower than their marginal productivity. Moreover the labour force is not mobile as between various places where jobs are available or between occupations. In this situation while at some places or in some occupations the supply of workers is over-abundant, in other places or occupations it is deficient. In places where the supply is low the marginal productivity will be high and hence wages high. In others they will be low. In the long run however the tendency is towards a uniformity of the wage-rate.

This tendency towards uniformity should not be understood to refer to money earnings only. Between occupations money earnings will not necessarily be equal even in the long run in spite of perfect mobility of labour because conditions of work everywhere are not uniform. In some occupations conditions of work may be dangerous or unhealthy for life and these will show higher money earnings than in those occupations where the conditions are more congenial.

Labour power is not homogeneous in quality. There are differences in physical and mental capacities as well as in the skill necessary for different trades. Acquisition of skill depends partly on innate ability and partly on the capacity to wait till it is acquired. Skilled occupations will thus show higher money earnings than unskilled ones. And these differences persist even in the long period. This introduces a large element of imperfection in the market. Groups of workers do not compete with one another as the difficulty of acquiring skill or of sudden changes in occupations will make the possibility of full competition remote.

There are a number of problems connected with labour which can only be mentioned in passing. The workers individually are in a weak bargaining position. To them their wages are a matter of life and death. Employers, on the contrary, possessing as they do greater economic power dictate their own terms. Under such circumstances workers feel it necessary to organise themselves in trade unions to acquire greater strength. The unions negotiate with employers for regulating their conditions of work. Their methods of exacting better terms from the employers often enough take the form of strikes. The problem of the relation between labour and capital-owners has grown so enormous that it is found necessary for the state to mediate between the parties for regulating their mutual relations.

Ricardo who first formulated a consistent theory of rent said that "rent was due to the original and indestructible powers of the soil." A piece of fertile land will naturally yield more produce when combined with other factors than another piece less fertile combined with equal quantities of those factors. This

excess of yield of the fertile land over that of the less fertile is rent and is claimed by the owner of the fertile land. As cultivation spreads from the more fertile to the less fertile lands as a result of increase in population and hence an increase in the demand for products of the soil, the last piece of land brought under cultivation will yield the least produce compared with that of other pieces. The differences between the yield of the least fertile land brought under cultivation and those of the more fertile constitute the rents of all those better lands. Naturally, the most fertile land will have the highest rent. The land, second in fertility, will have less rent and so forth in descending order of fertility until the least fertile land yields no rent at all. Whatever it produces goes in remunerating labour and capital working on that land.

What however is true of lands of descending order of fertility could also be valid in regard to land subjected to intensive cultivation. As the same piece of land is cultivated more and more intensely the applications of additional doses of labour and capital to it would only make that land yield smaller and smaller additions to the total produce. The difference between the last addition multiplied by the number of units of labour and capital and the total produce constitutes the rent of that land. Rent is thus due to intensive as well as extensive cultivation of the soil.

This way of putting the theory of rent makes it plain that rent is due to the operation of the law of diminishing returns. Resort to inferior land and to intensive cultivation is necessary only because good land and in fact the total area of land is limited. Increasing quantities of labour and capital applied to it would thus sooner or later show diminishing returns. As labour and capital are paid according to their marginal productivity the difference

Rent and Diminishing Returns

between the total produce, and the marginal produce multiplied by the number of labourers and units of capital is clearly the profits accruing to the landlord. Ricardo said that this difference was in the nature of a surplus arising out of the necessity for resort to extensive and intensive cultivation. The price of the produce will be determined by its marginal cost which consists of the costs of labour and capital only. It does not include rent. But under the stress of the law of diminishing returns the marginal cost will be highest. Thus when 100 bushels of wheat are produced by the application of the first dose of ten units of labour and ten units of capital paid at the rate of Re. 1 each, the price is Re. 1 for 5 bushels. When 80 more bushels are added by the application of a second equal dose the marginal cost will be Rs. 20 for 80 bushels or Re. 1 for 4 bushels, and when 60 more bushels are added by the application of a third dose Re. 1 will get only 3 bushels. Unless the price in the market is at least equal to the marginal cost, cultivation to secure additional bushels will not take place. Since the price of the total produce of wheat is uniform the total receipts will be equal to $(100 + 80 + 60) \times \text{Re. } \frac{1}{3}$ per bushel = Rs. 80. Labourers and capital units will be paid 60 bushels of wheat for ten units of labour and capital or Rs. 20. In all we have 30 such units employed. The total cost would then be Rs. 60. The difference of Rs. 20 between the total receipts and the total cost constitutes the rent which arises because price has now risen from 5 bushels a rupee to 3 bushels a rupee. Rent is thus the result of price and not its cause. Rent will be high if price is high and not vice versa. It is in the nature of a differential. This differential is called *the economic rent*. It is the difference between total receipts and total costs. Ricardo extended the analogy of agricultural rent to mining, plantations, fisheries as well as to building sites.

Under full competition tenants who compete with one another will give the whole of this economic rent to the landlord to secure the right of cultivating the land. If any tenant offers less other tenants will outbid him and secure the land for themselves. But the landlord cannot ask for more than this because tenants will leave his land and go to another landlord who offers better terms. If the competition between tenants is keen, landlords as a whole may secure the whole of the economic rent and sometimes even more. If it is not keen tenants as a whole may secure a part of this economic rent. The actual contract rent may thus slightly differ from the economic rent according to the bargaining strength of the two parties. Further, contracts are entered into on the basis of the expected prices of the produce. The actual prices at the season's end may turn out to be higher or lower than the expected ones. Hence a difference between the contract and the economic rents is likely to arise. The same reasoning could be applied to other types of lands.

The concept of rent has been extended to the remuneration received by other factors as well.

Rent of Ability Thus just as lands differ in fertility men also differ in their ability. The higher earnings secured by the abler men are also supposed to be due to the demand for their services by the society. Their higher earnings are therefore due to social forces and hence are in the nature of rent. Only the increased earning due to higher ability is rent. It is called the rent of ability.

Capital assets like factory establishments also secure rent when the demand for their products rises suddenly due to changes in tastes or in population. New factories do not come into existence suddenly and the benefit of increased demand is enjoyed by the existing establishments only. Marshall has called this

Quasi-Rent

benefit *quasi-rent*. It has all the characteristics of rent with only this exception that it is not permanent.

It has been loosely argued that rent is due to the monopolistic position of landowners who, because of social forces, are able to secure high profits on land. Rent is said thus to be the result of social monopoly. Monopoly implies the power of deliberate control of the supply of economic goods. It is conceivable that landowners as a whole combine and limit the output of the good they produce and thus try deliberately to raise its price. The excess of profits which they thus get over what they secure because of the natural scarcity of the land may be a monopoly gain. But if they do not combine no *one* producer's action will result in a rise in price. The separate lots of output brought to the market by all compete with one another. In this process everyone tries to put as much produce on the market as is possible for him to do with the limited supply of the factor land. Extra gains only result from the natural scarcity of one factor land and not due to the deliberate attempt at lessening competition. Rent is not therefore in the nature of a monopoly gain. Rent, according to Ricardo, is the result of social forces. The factor land gets a high remuneration because society demands its use. But this is true of every factor which is limited in supply. Rent would thus lose its distinctive character.

It is said further that rent does not enter into the cost of production, that is, that rent is the result of price and not the cause of it. Even this would be true of all factors. It is the high price of the product which can be said to enable entrepreneurs to pay high prices to factors of production. There is nothing peculiar to land in this respect. Again, if land is a free gift of nature it is difficult to show why it receives remuneration.

All this necessitates an investigation into the nature of cost. The remuneration paid to a factor of production is said to be a cost when its services are not available unless that remuneration is paid to it. It is necessary to induce the factor to yield its services. It then becomes a price determinant. Under what circumstances then is it necessary to pay a price to a factor to induce it to work? No owner of a factor wishes to keep it idle. He is always anxious to find for it some remunerative work. The inducement required is not to make it work at all, but to secure its services in the particular line in which it is wanted out of all the lines in which opportunities for remunerative work exist. [The inducement offered must then be at least equal to the earnings which the factor in question stands to secure in other lines. Let us call it a transfer price. Every factor having a variety of uses will have such transfer prices which must be paid to secure its services. Obviously if a factor has no more uses than one, it has no transfer price because it has no opportunities of earning anything in any line except one. If it is wanted in that line it will work. Otherwise it stands idle, earning nothing. Such a factor is called a specific factor.]

If a factor has a variety of uses, that is, if it is versatile, and is very scarce in supply relative to its demand in all lines it will have a high transfer price or a high inducement price which is in the nature of cost. [Price of its services in any line cannot fall below this transfer price. If it does, the factor will transfer itself elsewhere to maintain its earnings. This price then becomes a cost and is a determinant of the price of the final product.]

In so far as land is versatile in use the amount of remuneration paid to it as a transfer price is not rent but cost. It is a price determinant. The price of the product

of land has to cover this cost if land is to be kept working in that line. Whatever it secures over and above this price is due to its specificity in that line. When it earns this excess it is in the nature of a surplus or rent which is not a price-determinant. Earnings due to the specificity of a factor are rents because the factor has no opportunities of earning it elsewhere. Transfer price is called *opportunity cost* because transfer from one line to another involves loss of remunerative opportunity in the first line. But this way all cost is opportunity cost. Earnings above this are rents.

In the short run most factors are specific. In the long run most factors become versatile. In the short run then many earnings may be rents. In the long run all earnings are costs. }

Interest has been defined as a payment for securing the use of capital in production and is paid out of the contribution made by capital to the total product. We saw in our chapter on human efforts that capital originates in savings and eventuates in the building of capital goods. } The provision of capital enables the entrepreneur to elongate the process of production through time. If instead of drawing water from a well with a rope, a vessel and one's hands, one spends time first in making a wheel and a frame to mount the wheel on, though one initially spends more time in the whole job, one can now draw much larger quantities of water from the well. The excess of the quantity of water drawn by the second method over that of the first measures the productivity of the capital used. The same reasoning, enlarged so as to cover the whole economy, shows that capital contributes greatly to the total product. The question is only how this increased time and the labour and resources to be used through this time are made available in a community based on division of labour.

Let us assume a community of three men A, B and C producing wild fowl, fish and firewood respectively. Suppose A exchanges a part of the wild fowl caught by him with B for fish and with C for firewood keeping a part for himself. Suppose that B and C also do the same. Let us assume in this situation that A wishes to have constructed for himself wooden traps for catching fowl. Suppose he reduces his consumption of firewood and thus saves some fowl which he would have used in buying firewood. He need not then buy it from C. C's labour is thus released from collecting firewood for A. A now, instead of buying firewood from C, asks him to get wood and make wooden traps for him, and agrees to give to C the saved up fowl of his own till the traps are ready. A thus waits for the traps and day after day pays C some fowl which ultimately results in the construction of the traps which would enable A to catch more fowl.

Let us change the elements of the story and assume that instead of A, B wishes to have a small wooden canoe but that B's present needs of fowl, firewood and fish are such that he cannot reduce the consumption of any one. B now approaches A for a loan. A again reduces his consumption of firewood and thus saves some fowl which he would have paid to C in exchange for it. He gives this saved up fowl as a loan to B who advances it to C and asks him to construct a wooden canoe for him. Suppose C does it in twenty days and for each day he is enabled to have his fowl from B who borrows it from A. Let us suppose about 20 fowl were thus loaned by A to B and used by B in making advances to C till the canoe is ready. B now has the canoe. A does not of course undergo the sacrifice of not having firewood for twenty days for nothing. He does it only because B promises to give him one fish every week for all future time as a price for the loan made

by A. B is enabled to do so because a canoe helps him to catch a larger quantity of fish. In this case saving is done by A and borrowed by B and used for making advances to C till his labour results in the canoe. C's labour instead of being devoted to the satisfaction of the immediate need of firewood is devoted to making the canoe for a long time. Throughout this time the reduction in A's consumption of firewood and advance of fowl to B make possible the use of C's labour over a long period without caring for immediate results.

For A, B and C as a community instead of all labour being fruitful day by day only the labour of A and B is immediately fruitful while C's labour comes to fruition only after a time. It remains in use for a long time before its final results are available for enjoyment. Instead of traps or canoes we can have huts made of wood and mud. The point to note is that A's saving becomes useful to B and out of the labour of all, some is now used through a longer time. Capital is thus provided for through the saving action of A and the borrowing action of B. Ultimately a capital asset comes into being. The essential facts of the case are not in any way changed if we introduce money in the system. Only, instead of fowl, A would save money by abstaining from consuming firewood, lend the money to B who advances it to C who in turn buys fowl from A.

In everyday life all saving in the community is done in money. People save and lend the money for interest. The borrowers invest it in building capital assets and agree to pay interest because with more capital they can enlarge the output of the commodities they produce.

We have seen that capital enables a person to spread the use of labour through time. Labour may of course be spread over a long or a short period of time. Some may

wish to have capital for a long period while some may require it for a short period. Entrepreneurs engaged in production always require capital for various lengths of time. But they are seldom in a position to provide all the necessary capital from their own savings. A large number of people on the other hand are in a position to save and do not undertake the building of capital assets themselves; nor do they order their production themselves. They are thus in a position to lend. We shall now consider the two sides of the capital market : the supply of savings and the demand for savings.

People save in terms of money because they secure their incomes in terms of money. In their saving activity they are guided by a variety of motives. Beyond a certain level of income which is necessary for their livelihood and ordinary comfort the marginal utility of money for present expenditure becomes less than that for future expenditure. As beings having foresight we care to satisfy not only our present requirements but also to secure means to cater for our old age when we are incapacitated for productive work. In addition, the future requirements of our family 'including education of children' make calls on our income. Our desire to save therefore mainly depends on these factors. Of course those who are spendthrifts care more for the present than for the future. Savings thus depend on our (a) ability to save, (b) desire to save and (c) the needs of old age and of family. As our incomes rise our ability to save increases at a greater rate than our incomes. Some part of our saving depends also on the attractiveness of the rate of interest.

All our saving is not available to us for long term investments. For example, I may not require a part of my income presently but say three months hence

or one year or three years hence. There are thus short and long term savings available for investment. A man's decision to save does not entail a simultaneous decision to invest. Having saved in terms of money a man has next to decide in which form he holds it. He may hold it in the form of shares in a company or government securities or a house or just in the form of idle money which constitutes a most liquid asset. If the yield on assets other than money is not attractive a person may simply decide to hold money and wait for a better turn in the market. He will not save less merely because the yield on current assets is low. The magnitude of saving is not appreciably influenced by the height of the rate of interest. What is influenced, however, is the decision to hold it in the liquid form of money or a less liquid form of a short term investment or a still less liquid form of a long-dated investment. { The rate of interest affects willingness to invest, to become more or less liquid. On the other hand, the degree of willingness to be more or less liquid also affects the rate of interest. Thus the rate of interest and the liquidity preference mutually determine each other. In the classical theory of interest, saving as well as investment were supposed to be simultaneously determined by the rate of interest and the marginal utility of money presently and in future. A high rate raised its future utility so that saving as well as investment increased and a low rate diminished the supply of both such that present consumption increased. This was termed *the time preference of savings*. Time preference was supposed to determine the amount of saving and interest rate, while the rate of interest affected time preference and hence saving. It is however clear from the foregoing explanation that saving is determined by time preference irrespective of the rate of interest, while investment is determined by liquidity preference.

On the demand side every entrepreneur is constantly debating in his mind as to whether he should employ more or less capital in his business. His demand for capital would be influenced by the marginal productivity of it together with the rate of interest demanded by the lender. The entrepreneur has also to cover the risk entailed in his enterprise as the lender has to care for the safety of his investment. The borrower will not be prepared to pay for any unit of capital a higher rate than the addition of value to the total produce expected to be made by the last unit of capital employed. This expected value must cover not only the expectation of net return but also the element of risk for both the parties. The actual rate of interest will thus be equal to the net marginal return plus the payment for risk. No entrepreneur will be in a position to pay the lender anything less than the net return plus the inducements necessary for the lender to venture the capital. Otherwise, he will offer it elsewhere. The market rate of interest is thus equal to the value of the expected marginal product of capital plus the payment for risk. In riskless investments the rate of interest will obviously be lower. Differences also exist between the rates for short term and long term investments. Those for a short term will have a lower rate as the capital is secured back early and the risk is small.

The rate of interest will not fall below a certain limit. Otherwise lenders will prefer to be liquid and hold their savings in the form of money. There is thus a minimum level below which the rate of interest will never fall. Interest is thus not a reward for saving but a payment for illiquidity, an inducement to disboard money for investment.

Demand for Savings

Minimum Rate

Profits are a remuneration received by the entrepreneurs for their activity in starting ventures and bearing risks. They are the difference between the total receipts of the business minus the total costs. Unlike other factors who offer their services on contract, in exchange for a fixed recurring remuneration profits are a reward which entrepreneurs earn during their business activity. Every business has some element of a risk of loss as it offers chances of gains. Entrepreneurs are prepared to bear this risk. They employ other factors on contract remuneration and anything that is left after paying other factors is their gain. It may be small or large or nil or on the minus side. The entrepreneur is thus an employing factor, the only active factor which starts a business, assembles other factors, markets the final products and claims a profit.

Every person has before him the choice of becoming either an employed factor or an employing factor. If he decides to become an employing factor he has to choose between types of undertakings which offer opportunities for useful and remunerative venture. He expects some minimum profits in various channels. Below this minimum expectation of profits he will not enter into any line. He will obviously choose that line which gives a slightly larger prospective reward than in other lines.

Channels of enterprise offer varying amounts of prospective reward. Competition will, however, in the end reduce the reward to a lower level. That level at which no more entrepreneurs are prepared to enter the line nor are existing ones prepared to leave the line is a normal level of profits. An industry which offers only this normal level of profits is in equilibrium. It neither expands nor contracts.

Of course all entrepreneurs are not satisfied with the same level of reward. Some who are very adventurous will naturally choose those lines in which the prospective reward is highest. In such lines the chances of losses also are great. Others, less adventurous, will choose less remunerative lines and so on in a descending order of inducement required by entrepreneurs. Ability also will be a deciding factor in the distribution of entrepreneurs. What is a normal reward for one adventurous person is not necessarily so for another person. The distribution of entrepreneurial ability as between various industries will be according to the number of people who consider given prospective rewards to be normal. A line offering high reward presently will, in course of time, offer less because of increased competition. The most daring ability in this case will leave the line and go elsewhere in search of higher profits.

Profit is a reward for bearing risk. In the continuous presence of the uncertainties of this world some have to specialise in the work of bearing risks. Profits remunerate uncertainty-bearing. Of course, in a stationary world, uncertainty is absent. It is only present in a dynamic world. Profits as a factor-price is thus a dynamic category. It would be absent in a stationary and therefore a riskless world. In such a world, therefore, there is no place for the entrepreneur.

⌈ The difference between total receipts and total costs is called gross profits. Out of these will have to be deducted the depreciation on capital, obsolescence charge, repairing charges for normal and abnormal breakages of machinery, wages for the entrepreneur's managerial work and insurance charges against insurable risk. What remains has been called pure profits which have been supposed to be a.

reward secured for no service rendered. But the entrepreneur has to bear non-insurable risks, and risk-bearing is a factor of production. The service rendered in bearing risks will not come forth unless the reward is available. It is an inducement price necessary to secure entrepreneurial ability for an industry. Being a cost it becomes a price-determinant in the long run.)

A question which has been considered to be of very high social significance and which has been considered by some economists as of central importance in economics is that of the inequality of incomes. This question has been considered so important by these economists that they have come to regard the explanation of riches and poverty and of inequality of incomes as the central function of economic analysis. Economics as a science would, in their opinion, lose all its social value if it does not answer these questions and in fact they build up the entire theoretical structure of economics round these questions. Those, on the contrary, who are more scientific in their approach to economics have consistently avoided to answer these questions because they land them into a number of question-begging positions.

Inequality of money incomes between social groups is at any moment of time the result of a complex of social and economic forces. It is clearly beyond the scope of this book, if not outside the field of economic theory, to explore those forces. Here we shall confine ourselves to a brief statement concerning the national income of India. When we speak of the distribution of incomes in this context, the reference is to *inter-personal* and not to *factoral* distribution.

{ Income is the result of work by men in co-operation with natural resources and capital. Work will be partly devoted in a developing economy towards the production of consumption goods and services, partly to increase and improve the stock of capital equipment and the rest to maintain in tact the equipment worn out by usage. The *annual national income or dividend* would then be equal to the value of the sum total of all factor services minus those devoted to making good worn-out capital. This is represented by the total net receipts in money of all factors. If the quantity of money changes, money incomes will change though not the goods produced. To find out changes in the annual national income of communities we shall have to correct the estimates according to changes in the value of money. There are other difficulties in arriving at a correct estimate but we shall have to ignore them here.

There is a second method of calculating the annual national dividend of a community. In this the total value of the produce from agriculture, mining and manufacturing industries etc., is taken to represent the national dividend. To this will have to be added the value of all services rendered directly to consumers. There are a number of difficulties in this method also. But Indian economists have adopted this procedure and have arrived at a series of figures. For want of any better estimates we shall have to rely on these. The following table gives the estimates of income per head for different years from 1870 to 1932.

Estimated income per head from 1870 to 1932.

Year	Income	Year	Income	Year	Income
1870	Rs. 20	1911	Rs. 50	1931	Rs. 63
1882	Rs. 27	1921	Rs. 67	1932	Rs. 58
1900	Rs. 30	1930	Rs. 84		

The above figures are averages. In fact the total national dividend is very unevenly distributed among the various sections of the community. Thus the calculation of Shah and Khambatta show that a third of the annual wealth of the country is enjoyed by about five per cent of the population. Another third of the wealth is enjoyed by a third of the total population, while 60 per cent of the total population enjoy among them the remaining 30 per cent of the total annual wealth.

The statistics above only give precision to the palpable fact of poverty in India. They are not given here to prove that we are poor: Indian poverty requires no proof. One thing which emerges from the above table is that within the last fifty years the average income of Indians is increasing. The situation is no doubt improving. But the rate of increase in the national dividend is not encouraging. Further this increase has not affected favourably the conditions of health of the community. [The efficiency of the average worker has not materially improved. It may be because a major part of the increase in the national dividend has probably gone to make the rich more rich. The inequality of incomes may thus be increasing. Part of the increase is absorbed by the newly created middle class found in government and business services and the liberal professions. The industrial and agricultural worker yet stands dry getting only a negligible proportion of the increase in wealth. The sub-division and fragmentation of the soil together with the growing indebtedness have all the while undermined his position. Even the tax system which till very recently burdened the masses and exempted the classes has further aggravated his poverty. Tax money taken from the poor by way of land revenue, court fees, salt-tax and other taxes seldom returns to the villages in the form of benefits given by the state. It

Poverty in
India

is spent on towns and benefits the middle and the richer classes. A wise policy of intensive industrialisation, a more efficient and debt-free agriculture, a more equitable tax-system and a scheme of state expenditure which benefits the poorer sections of the population are some of the lines of reform which must be immediately followed. They alone are calculated to increase the national dividend rapidly and to distribute it more equitably. The inefficiency of the human factor in the total situation must affect the productive activity of the community. Each line of it will ultimately receive its pattern from the men who pursue it.

CHAPTER VII

MONEY AND THE BANKING PROCESS

In modern communities most exchanges of goods and services are done against money, though transactions in which goods and services are directly exchanged against one another are not altogether absent. In remote villages in India, we still find vegetables exchanged against some kind of grain, and in towns domestic services are bought partly for money and partly for other house benefits. The soldiers in the army are given rations of food, cigarettes and clothing in part payment for the services they render. Payments in kind are thus present even in the most advanced communities. But the vast majority of payments are always in terms of money.

Medium of
Exchange

Nobody would exchange his own goods or services against other goods and services unless the latter are useful to him in some way. For an exchange to take place there must be a double coincidence in which the parties are in need of each other's goods. When money is absent from the economy this double coincidence alone makes the market process of exchange possible. Any good which is desired by the majority of men becomes money. Such a good, by virtue of the fact that it is useful to most men directly, becomes also a suitable means of common exchange. Any person accepting it does so because it is useful to him directly. But even though it is not so useful he may accept it because he will find it possible to give it to others in exchange for the goods which he wants. Such a good then becomes doubly useful, directly and indirectly. It becomes a common commodity of exchange. This characteristic

of common acceptance and circulation makes it money. Money is a *general medium of exchange*.

Measure of Value { A good possessing direct and indirect utility possesses value if it is scarce in relation to demand. As a good possessing value, people are prepared to exchange varying quantities of other goods and services against it. The good will thus possess value in terms of all goods given in exchange for it. Conversely, the values of all other goods can be expressed in terms of this particular good. Thus the second distinguishing feature of money is that due to its common acceptance it serves as a *common measure of value*.

Store of Value People may, however, not want to use such a good immediately and directly but in the near or distant future and indirectly. They may thus wish to acquire it to satisfy some anticipated want. Between the point of time of its acquisition and the point of time when it is consumed or exchanged it should not lose its utility-yielding power. This, the good will do only if it is durable and does not so increase in supply that it ceases to be a scarce good. A durable good commonly desired will enable persons to split up their want-satisfying activity of exchange in two parts. They will acquire this good first, hold it for sometime and use it for buying other goods later. During the interval it lies idle embodying a *store of value*. A good which, by virtue of its durability, stores value is all the more suitable for common acceptance. It becomes money.

Deferred Payments Such a good will generally be used by the members of a community not only to make immediate payments against goods and services but also to make what are called *deferred payments*. When goods and services are bought payments are not, in all cases, made immediately. The purchase of a

good immediately creates a debt in favour of the seller. The buyer becomes a debtor. If he pays its value in terms of some good the debt is liquidated, cancelled or redeemed at once. But in a vast number of cases payments are postponed. When the employer buys the services of the employees he agrees to pay their value not immediately but after the service is rendered. The work of the month is paid for at the end of the month. During the month the debt accumulates in favour of the employee and against the employer. When the time comes to pay the same, payment is usually effected in terms of a good which has the qualities of money. Similarly, a person may borrow from another the command over goods and services. This is done when a commonly accepted good is loaned. When the loan is returned, it is again the good commonly accepted, which is paid back. Everyone accepts such a good in discharge of all debts or postponed payments. Of course, during the interval the value of such a good in terms of other goods should not rise or fall. Money then becomes a standard of deferred payments. Money thus performs the following functions: (i) it is a common medium of exchange, (ii) it serves as a common measure of value, (iii) it stores value during its period of its idleness and (iv) it serves as a standard for the discharge of deferred payments.]

Exchange transaction is difficult to effect if at least one of the two goods exchanged is not divisible without loss of value. If I buy a cow in exchange for dogs, I cannot give a dog and a half. Yet two dogs may be too high a value parted with in exchange for a cow and a dog may lose its value if it is cut in two pieces. A good must be capable of minute division without losing in value if it is to be used as money. It must also be portable so that it

**Characteristics
of Money**

can be easily handled and should be capable of easy recognition. Further, if its supply conditions are naturally such as to keep its value stable, it is the best monetary good. Gold and silver are such goods. They have been everywhere used as money throughout all known historical periods.

[Gold and silver may circulate as money in a community. But their actual circulation is not necessary. Written claims on these metals can also pass from hand to hand provided these claims can be realised in gold or silver whenever desired. These claims will not have more value than that of the amounts of the metals which they represent. But once people get accustomed to their use the claims may cease to be actually realisable in terms of these metals. Once the claims inherit the value of the metals they can circulate in their own right. These claims then become pure money. At this stage money ceases to be directly useful. It has only indirect utility. Money thus originates in a commodity directly useful, and ultimately ceases to be such. It is only a unit of value. The claims are called *paper money*. Paper money is pure money and not a commodity of consumption.]

For facilitating the exchange operations in a community the public authorities undertake to divide the money metals offered by the public in convenient parts. These parts are called coins. **Legal Tender** If the government controls the issue of coins the value of coins in some cases is higher than the value of their metallic contents. Once the Government finds that the public is accustomed to use particular metals as money it declares such metals as standard metals. The coins made of them can then be used in discharge debt of any amounts. Law makes them *legal tender*. Coins made of standard metals and whose amount is not controlled by

the government, possess the same value which their metal contents do. They are declared by law as unlimited legal tender. That is, they can be used in discharge of debts to unlimited amounts. They are called standard coins. But the standard metal is always costly. The government on its own initiative issues coins of baser metals which are declared to be limited legal tender. Only debts upto a certain legally prescribed maximum value can be discharged with them. Being limited legal tender they are not used in large quantities. Making them limited legal tender is only one way of controlling their quantity. As their volume is rigidly controlled their face value is higher than their metallic value and are issued only as fractions of the standard coins. They are called token coins. When coinage is done for the public free of charge it is called gratuitous coinage. If the public authority is under legal compulsion to coin all metal brought to it, coinage is said to be free. If it is not free the charge made for coinage is called seigniorage. When the public gets accustomed to use paper money it may also be declared unlimited legal tender. People also develop and adopt some kinds of paper media of exchange. Promises issued by persons to pay legal tender money at some future date also circulate as money, though they are not legal tender. Such promises will be accepted only if the acceptor has confidence in the person who issues them. They are called *promissory notes*.

The Indian rupee, though it is a token coin in all respects, is unlimited legal tender. All other coins in our country are token coins with limited legal tender. The notes issued by the Reserve Bank of India are our paper money declared by the government as unlimited legal tender.]

The value of money, like that of any other commodity, is what it will exchange for. When the value of money rises, a unit of it will exchange for a larger quantity of other goods. When it falls, it will buy a smaller amount of other goods. To put the same thing differently, when the value of money rises, prices of other goods fall; conversely, when the value of money falls, prices rise. The same amount of money buys a larger or smaller quantity of other goods, according as the value of money rises or falls.

So long as any precious metal like gold or silver circulates in the form of coins the value of money will obviously be equal to the value of the metal. Its demand conditions will be represented by peoples' willingness to part with varying quantities of goods and services for given quantities of the metal. There will be a series of demand prices at which different quantities will be asked for by the public. Of course prices of the metal acting as money will in this case be in terms of goods. This series of demand prices will make up the demand schedule. On the supply side we have a series of supply prices at which varying quantities of money metal in the form of coins will be offered for sale. The substitution of paper money for coins will in no way alter the total situation. At any moment of time, out of the total quantity of money existing in the community, people will offer and demand varying quantities of money in exchange for goods and services. What is not offered remains as idle money. Naturally if more money lies idle, that is, if more of it is withheld by the public the value of money will be high; if less is withheld the value of money will fall. That is to say, if out of a given quantity of money in the community the public is disposed to hold more of it in reserve the value of money will rise; if it is disposed to hold less in reserve the value of money will fall.

There is a difference between the total quantity of money existing in the community and the supply of money offered by the public against all sorts of goods and services. The whole quantity available is seldom supplied. Whether more or less of it is offered obviously depends upon the expectations of men of the future course of prices. If people expect prices of goods to fall they will be disposed to hold more money instead of offering it against present goods since they expect to buy them cheap later. Changes in the quantity of idle money out of the total stock thus affect its value in terms of goods and services.

Over any period of time the quantity of goods and services offered will in any dynamic community undergo a change. So will the quantity of money offered. The quantity offered is not the same as the quantity in existence. The existing quantity of money in the community will of course change as a result of a number of influences, wherever metallic money is in circulation its quantity is likely to be affected by changes in the monetary stock of the metal. It will also be affected in metallic as well as in non-metallic standards by the behaviour of the monetary authority of the country. It may create money and put it in circulation by purchasing claims to capital assets or by simply loaning the newly created money to people. These two actions will of course increase the supply of money in the market at the moment at which it is used. The quantity of circulating media may also be increased by the action of the commercial banks. But it will be wrong to assume that at the very next moment people who have got this new money will necessarily offer it again in the market. That will depend upon how expectations change between the two successive moments of time.

Over a period of time the quantity of money offered will be affected by the rate at which money circulates, that is, by its *velocity of circulation*. If we assume that there are only 100 units of money in a community and if each unit passes from hand to hand effecting 10 exchanges during say a day, then the *effective* quantity of money is 1000 units. This will increase or diminish according as the velocity of circulation rises or falls. Changes in the velocity are caused by changes in the expectations of people as to the future course of prices. If they expect prices to rise, they will be eager to part with their money thereby increasing its velocity and consequently its effective supply. If during the same period there is no corresponding increase in the quantity of goods and services offered—which constitutes the demand for money—the value of money will fall. When people expect prices to fall and prefer to hold money, its velocity of circulation falls and its value rises.

Banking institutions in a country specialise in the business of buying and selling the use of money. Men who earn incomes, do not ordinarily spend the whole of their money in purchasing consumption goods. They save money and through the banks lend it to the entrepreneurs. Banks borrow money from the public at a low rate of interest and lend it to the entrepreneurs at a higher rate taking the difference partly to cover the costs in their business and the rest as profits. (Borrowing is done by accepting deposits of money on fixed account or current account. In the former the depositor agrees to leave the money with the bank for a specified period, from six months to a year or more. Deposits on current account are withdrawable at a moment's notice. Money is thus available for long as well as for short terms for use. The banks put this idle

Velocity of
Circulation

The Banking
Process

money back in circulation. It goes in investments and helps productive activity in all channels. Banks specialise in financing commerce, agriculture and industries. They specialise in long term as well as short term finance. The trader as well as the manufacturer and the agriculturist are thus enabled to buy raw materials and the services of labour in their productive operations.

Banks perform in addition various types of services for their customers. They accept deposits of valuables for safe custody, provide customers with foreign currencies when required and advise them in making sound investments. They act as trustees of the properties of minors.)

Banking operations result in the creation of *credit*. The bank acts as a surety between the buyers and sellers of goods. Buyers and sellers who are not known to each other will not buy and sell goods unless immediate payments are made. But if a banker is known to both parties he can undertake to pay the seller the value of his goods in return for a promise by the buyer to pay the money at some future date. The banker in fact buys this promise and pays the seller money on the strength of this promise. This is called *discounting of bills*. A promise to pay is a bill. To discount it, is to give the present value of the bill. It is arrived at by deducting an amount at the current rate of interest from the sum mentioned on the bill. The discount constitutes the banker's profits. Many times the banker gives a guarantee to the seller of payment by the buyer. Goods are thus sold merely on the word of honour of the banker. This word immediately serves the purpose of money. The standing of the banker makes his word reliable. This standing is called credit. Credit then serves as money. It is as if the present quantity of money supplied in the market is increased.

When the banker gives a loan to his customer he gives it in the form of an account opened in his favour with the bank. If Rs. 1,000 are loaned to A, it only means that A gets the right of ordering the bank to pay A's creditors amounts up to the total of Rs. 1,000. This order on the bank is called a *cheque*. When A takes a loan from the bank it only means that he has the right of drawing cheques on the bank to the tune of Rs. 1,000. A will pay the cheques to his creditors. The creditors will accept them so long as they believe that the bank will in fact pay money stated on the cheques. Thus even when actual money is not given, A can use Rs. 1,000 by drawing cheques on the bank. The creditors receiving the cheques may have accounts with the same bank in which case the bank only credits the account of A's creditors with the amount of the cheque and debits A's account with the same amount. If the creditors have accounts with other banks they will ask their own banks to collect money from A's bank. But the customers of the other banks may have similarly paid cheques to other customers of A's bank. These ask A's bank to collect money from the other banks. Money to be received and money to be paid thus largely cancels out and in fact no cash except that which is required for day-to-day purposes passes the banks' counters. The cheques drawn on all banks by their borrowers thus increase the total quantity of circulating money. This result of banking operations is called the creation of credit. It results in an economy in the use of cash, in getting more work done out of the same quantity of money, and in increasing the velocity of circulation of money.

With the development of systems of paper money a need was felt for regulating the issue of such money to ensure public confidence in its value. Originally paper money

Creation of
Credit

Central
Banking

came only as a substitute for gold money. It was merely a representative of gold money. [A major part of gold money was kept in a central reserve and the public were given written promises to pay the gold whenever required. The promises are called *notes*. The issue of these notes is controlled by a Central Bank which acts as the national monetary authority in all advanced countries. So long as the currency authority is under a legal obligation to pay gold for notes on demand, the notes are said to be redeemable or *convertible* in terms of gold. But all notes do not come back for redemption so that a part of the gold stock not required for converting the notes can be used to issue more notes. Such increase, provided it is kept within bounds, does not impair the power of central banks to redeem their notes. The issue of notes unbacked by gold reserves is called *fiduciary issue*. It is usually paid to the public against purchases of claims on capital assets by the central banks. A system in which the gold stock or reserve forms a minimum percentage of the notes issued is adopted in some countries. This method is called the *percentage reserve system*. There are other varieties of the system of note issue in different countries. The object of all is to control the total issue of notes so as to keep it within reasonable limits. [Even when notes are not convertible into gold, gold is still held by central banks to enable a country to fulfil its foreign obligations and to ensure confidence. In this case the amount of notes issued lies entirely within the discretion of the central bank.]

An increase or a decrease in the quantity of paper money affects the rate of interest and hence the willingness of entrepreneurs to borrow. A high rate of interest checks borrowing and therefore investment. This results in a smaller supply of money coming into the market. Prices

Regulation of
Note Issue

fall and pessimistic expectations are created. Factors of production are thrown out of employment and production is curtailed. Hence the importance of a wise regulation of the quantity of money and the rate of interest. The notes issued by the central bank go into the reserves of ordinary banks and private individuals. These notes act as their cash reserves of which banks and individuals may vary the magnitude according to their market expectations. Regulation of note-issue is therefore a matter of national importance requiring central control.

∫The Central Bank also acts as a bankers' bank. When the public demand for holding money increases, people withdraw their cash balances from the ordinary banks. The bankers' lending operations may however have reduced this cash rendering them unable to pay their customers' demands. At such a time the ordinary banks go to the central bank who alone can create cash and borrow from it. In this way and in other ways also the central bank helps the banking world. Bankers in order to secure these advantages from the central bank keep a part of their idle deposits with it. The individual's idle cash goes to the ordinary banks. The ordinary banks' idle cash goes to the central bank and is there used by it for its own business. Banking operations thus reduce idle cash to the lowest limits. Idle cash is held mainly as a reserve against liabilities and when it is centralised it is in the hands of the central bank. It is the banking reserve of the country. The central bank is thus the custodian of the nation's gold reserves as well as its banking reserves.

In addition, the government usually appoints the central bank as its own bankers. All revenues of the government are paid into the central bank and when payments are

**Government's
Bank**

to be made the government draws cheques on its account with this bank. As government does not require all the money it has in its account, the central bank uses government's idle money. The central bank thus tries to reduce idle money to the lowest amount. This helps to maintain a continuous supply of a large quantity of money in the market and keep up the prices of commodities and services. It helps to check a fall in prices and thus sustains productive activity by preventing pessimistic expectations generated by falling prices.]

Anything that is commonly used or done by all members of the community or a majority of them is called the standard. Thus if Gandhi caps are used by people in general the standard of headgear is the Gandhi cap. If a particular code of social conduct is adopted generally that code becomes the standard of public behaviour. When people are in the habit of measuring the values of all commodities and services in terms of gold and to use it in their purchases and sales we have gold as the *standard of currency*. In it some people who produce gold sell it for other goods. And those who receive it use it again for the same purpose. Gold behaves in the same way as other goods, only its use is general while that of other goods is not. Hence it becomes money. Nobody controls its supply. Nobody prevents its export or import for purposes of profit just as nobody prevents the import, export or production of any other commodity. Like other goods, therefore, gold is a free good whose value is determined by the ordinary laws of demand and supply. When this is so, a country is said to have a *gold standard*. A country can similarly have any other metallic standard.

We have however seen that instead of actual gold or gold coins, claims on gold called notes can also circulate

and if they are convertible into gold their value will be equal to that of gold. But in this case it is not necessary to take the trouble of coining gold. That cost is saved. Similarly the loss due to wear and tear of gold is also saved. Notes circulate instead of gold coins, and are convertible in gold bars. In such a case the standard is said to be a *gold bullion standard*. A *gold currency standard* may on the other hand partly have gold coins in circulation and partly notes or no notes at all. In some countries internal circulating currency consists either of notes or of notes and token coins fully legal tender. [And they are both convertible not into gold but into the money of another country having the gold standard. Since however the money of such a country is itself convertible into gold, in a round about way the first country's currency is also convertible into gold. This is called a *gold exchange standard*. People do not get gold inside their country but in that country in whose currency its own money is convertible.] Hence the use of the word 'exchange.'

The principal benefit derived from the gold standard, in the opinion of many economists, is that it keeps the price-level steady. When prices rise, the prices of commodities rise faster than the prices of employed factors. The latter are usually fixed by long term contract. But this means that earners of fixed incomes have to buy their requisites of life at higher prices. They therefore suffer while the employing factor namely, the entrepreneur gains, as he has to incur the same money costs when he secures high prices for his produce. In times of falling prices the reverse is the case. Similar mal-adjustment takes place between debtors and creditors. Under a gold standard this distributive mal-adjustment is removed because the price-level is steady so that the value of money remains constant. The supply

**Advantages of
Gold Standard**

conditions of gold are by nature such that its annual increase just meets the annual increase in its demand. Further if the gold standard is adopted internationally, no one nation's price-level will rise higher than another nation's price-level. A rise in the price-level means a fall in the value of money and of gold if it is money. Gold will be exported from that country where its value is low to that where it is high, provided of course that gold is a free commodity. There is thus an automatic redistribution of gold between nations in such a way that its value is everywhere the same. The monetary authority must of course so behave in such a case that when the public demand gold for export and tender notes, gold must be given and notes taken back and retired from circulation. That is, a country's note issue must vary with changes in the supply of gold. In a paper standard system the monetary authority has absolute power over the supply of money. One nation's paper money cannot be used by other nations. Hence there is no export of money and no automatic adjustment of price-levels.]

It has however been found that gold does not behave in the way it is believed to behave. Nations are therefore coming to adopt paper standards which are not automatic but managed. In this case English money has been best managed. Some nations have therefore made their currencies convertible into English money because it has been managed efficiently. Instead of gold some countries therefore are on the English money standard. English money is called Sterling. They are therefore on a *sterling exchange standard*.

It has been found that it is not currency either metallic or paper which is to be blamed when countries suffer from periodic booms and depressions but it is the behaviour of

the public. The trouble seems to arise from the activity of the public in spending, saving, lending and hoarding money. Recent attempts at better monetary management aim increasingly at regulating the lending and hoarding behaviour of the public. Lending, hoarding and investing depend upon the expectations of future, upon the profit-inducement. But all this controversy takes us beyond the limits of this book.

The question of the standard has therefore lost its importance. Monetary theorists are now attempting increasingly to formulate guides to monetary policy and management and forging weapons wherewith to make the policy successful.

The Indian currency consists of rupees, annas, pies and Reserve Bank notes. Rupees and notes convertible into rupees are both unlimited legal tender. The Rupee is the standard coin of India for all practical purposes. Since however the issue of rupees is a monopoly of the Government of India, who use their monopoly power to control its quantity the face value of the rupee is higher than its intrinsic value by about five annas. For a long time the rupee was convertible into the standard money of Great Britain which itself was convertible into gold at the rate of 1s. 4d. per rupee. Ours was practically a gold standard with this difference that convertibility was a reality for buying gold to pay external obligations only. Hence it was said that we were on a gold exchange standard. From September 1931 the British standard money ceased to be convertible into gold and hence also the rupee. Our standard is thus said to be a sterling exchange standard, sterling being the British standard money for all practical purposes. The convertibility is legally fixed at 1s. 6d. per rupee.)

[With the establishment of the Reserve Bank of India in the year 1935 the control over the total quantity of currency including notes is vested in that bank. It has also assumed control over the credit of the country by virtue of the Act of 1934. The major commercial and exchange banks in the country are required to maintain a certain percentage of cash reserves against their liabilities as deposits with the Reserve Bank and in return are given the facility of discounting bills in their portfolio with that bank. The ordinary banks thus depend for their operations in expanding credit on the accommodation given by the Reserve Bank through rediscounting bills already discounted by the banks for their clients. When the Reserve Bank wishes that these banks should contract their credit it undertakes what are called open market operations.]

As yet the Reserve Bank has not assumed control over agricultural credit which is in the hands of a vast body of *sowcars* and the co-operative credit societies, since neither of these two bodies are legally liable to maintain deposits with the Reserve Bank. But the *sowcars* and the co-operative societies through their bigger units secure credit accommodation from the ordinary commercial banks. And in so far as these latter are controlled by the Reserve Bank in their credit operations there is some indirect control exercised by the Reserve Bank over them. Direct control however would bring about a uniformity in the whole money market.

[The Reserve Bank also acts as the Governments' bankers and in that capacity collects and disburses revenue and expenditure respectively of the Governments. It is also required by law to maintain the rate of exchange between the rupee and the sterling steady at 1s. 6d. per rupee.]

Indian Money Market The Indian Money Market consists of the Reserve Bank, the Imperial Bank, Commercial Banks, Exchange Banks, and the Co-operative Banks. Banking in India has not developed much. The cheque system prevails only in metropolitan cities and a few other towns. As such the banks have to maintain large cash reserves against their liabilities. This makes the interest rate high. Further, since there is no united control over all credit institutions and uniform practice of accounts etc., rates of interest in different fields vary. They vary also as between different towns. The Reserve Bank can do much in bringing about uniformity in this field.

CHAPTER VIII

ORGANISATION OF ECONOMIC ACTIVITY

Economic activity in an individualist community may be undertaken by an individual singly or by an association of individuals. When the unit of organisation of a business concern is the individual only, it is called *private proprietorship* and when it is composed of more than one individual it may either be called *partnership* or a *joint stock company*. [Under private proprietorship the proprietor-owner invests his own capital or borrows it from others on his own personal credit. He alone remains responsible for all debts and liabilities arising in the conduct of his business. And in the event of the concern being wound up he is liable to pay all liabilities to the full extent of his business assets as well as his private assets. Law makes no difference between the two for the purposes of his liability. Private proprietorship hence bears unlimited liability. If the business is, however, undertaken by an association of persons, practically all of whom are actively co-operating with one another for the prosperity of the business, it is a partnership. Even here we find the same principle of unlimited liability]

These two types of organisation are most appropriate when the scale of activity is small. The co-operating partners or the single proprietor has personal interest in the business and this makes every one work hard. When the market for a product is confined to a small area, or when the product satisfies a particular local fashion

Single Proprietorship and Partnership

or when it cannot be so standardised as to be capable of being produced on a large scale with the help of machinery, such organisations have a considerable advantage over bigger organisations called joint stock companies.

The *Joint Stock Company* organisation becomes useful when the scale of production requires a large amount of capital which cannot be supplied by a few individuals. Historically when markets began to widen beyond the local boundaries of a small district or county, company organisation came into existence. In this case personal interest is difficult to maintain. The management of the company has perforce to be undertaken by a selected number of men called *directors* whose individual subscriptions to the total capital may be small. The public who subscribe to the capital may thus suffer because of irresponsible management. But in spite of its defects the joint stock company is of great importance in modern business. As the liability of the shareholders of the company is limited to the amount of their shares, and as the capital can be subscribed by small amounts, it becomes possible to utilise the small savings of the relatively poorer people. The savings would otherwise have remained idle. For the community as a whole, therefore, the joint stock company organisation is a valuable method of putting idle resources to productive purpose.

In all modern industrialised communities joint stock company organisation predominates in all large scale undertakings. This organisation is principally found in trading concerns and manufacturing industries.

In agriculture, which is the earliest industry undertaken by man in settled life, the unit of organisation has been largely determined by the historical circumstances of each

**Joint Stock
Company**

**Organisation of
Agriculture**

country. Unlike machinery which can be installed at any place according to the will of the individual, in agriculture man has to confine his activities to that area where cultivable land is available. In addition, local customs and the laws of each country introduce their own peculiarities in the organisation. Thus in India we find peasant proprietorship prevailing almost everywhere. And even where there are large *Zamindari* tracts, the tenant-cultivators have come to acquire hereditary occupancy and cultivation rights. The law of inheritance has divided these rights among an ever increasing number of people as population has grown. Thus a cultivator, whether he is a proprietor or a tenant, cultivates an area which is often times as small as an acre or half an acre. The profitable scale of cultivation has in this case, however, to be determined not by the magnitude of the indivisible units of factors but by the needs of the family.)

We shall in this chapter consider the salient problems of agriculture, industry and trade in our country. The following table gives the occupational distribution of population in India.

Occupational Distribution of Population according to the Census of 1931.

Occupations		Percentage of total
Production of Raw Materials	...	65.84
Industry	...	10.38
Transport	...	1.65
Trade	...	5.53
Public Administration	...	2.86
Miscellaneous	...	13.74

It shows that agriculture supports directly and indirectly more than 65 per cent of the total population, while industries support about 11 per cent and trade about

6 per cent of the total. Compared to agriculture other industries pale into insignificance.

Agriculture in India presents a number of very intricate problems regarding the division of land in small holdings,* the indebtedness of the cultivators, tenancy relations and productive efficiency. We shall only very briefly survey each problem.

The following table gives us the area of land devoted to various crops.

Area under principal crops in India (1935-36)
(in thousands of acres)

Crop	Area	Crop	Area
Rice	80,583	Fruits, vegetables and etc.	8,324
Wheat	25,149	Oil-seeds	15,707
Barley	6,178	Cotton	15,761
Jowar	21,550	Jute	1,938
Bajra	13,074	Tea	787
Gram	15,028	Tobacco	1,231
Other grains and pulse	39,579	Other non-food crops	13,170
Sugar-cane	4,041		
		Total	262,100

It must be borne in mind that the distribution of area as between different crops has not remained constant. In the first place the total area under the plough has increased during the last century. There has also been a redistribution of land as between different uses. This was the result of the growing importance of certain crops, called non-food crops in the international trade. If all the different portions of land under the plough, devoted to different crops, had

* A holding is an area of land under the ownership of or cultivation by a single person.

been specific for their respective crops only a redistribution of it would not have been possible. Transfer from one use to another was possible because an appreciable portion of it was versatile in use.

While increasing importance of non-food products in international trade brought about a transfer of land from food crops to the production of non-food crops, increase of population made necessary transfer of waste land to cultivation. Wherever the waste land was cultivable slow transfer followed in the wake of increasing population and the consequent increase in the demand for agricultural produce. Along with land, agricultural skill and implements were also transferred to new crops. This fact of transfer of resources during all times of immediately past history is also a phenomenon visible as between old and new industries and between manufacturing and agricultural industries. Two causes led to such a transfer. In the first place, with the coming in of the dynamic influence of the industrial revolution, the old industries, practised with primitive tools and implements under what is called the domestic system, received a death blow. Secondly, during an interval of time which in India was needlessly long, people who lost their old industries could not take to any alternative occupations in similar industries plied by modern mechanical methods and helped by motive power generated from coal, oil and steam. Their only alternative was thus agricultural industry. From 1830 to 1880, we witness in the economic history of India a rapid transfer of men and resources to agriculture from industries which succumbed to the deadly competition of foreign with native goods. But in course of time new industries on the factory scale were developed under joint stock company organisation. Entrepreneurial ability broke new paths of enterprise in which to increase

its earnings. In the initial stages foreign enterprise led the way. But later on native ability also asserted itself. The new alternatives which thus sprung up now began to absorb increasing numbers of the population. From the beginning of this century we find a definite turn in the relative importance of the manufacturing and the agricultural industries in India. This turn is slowly but surely increasing the importance of the former in the Indian economy. Let us now turn to the main agricultural problems in India.

Holdings of agricultural land in India are small because of the influence of two forces viz., the operation of the law of inheritance and the growth of population. The ancestral property is divided equally among the sons of a father. A plot of fifty acres will, when divided between five sons, be cut up in five plots of ten acres each. And if the original plot consists of good and bad land, each son will insist on having a part of the good land so that the good land will be divided in five plots as well as the bad land. The fifty acres of the original plot will thus be cut up in ten plots instead of five. The first type of partition is called *sub-division* and the second *fragmentation*. In course of time as families expand a single person will come to possess small fragments of land scattered over a wide territory.

So long as the joint family system prevailed, the holdings though legally divisible were cultivated jointly and the evils of the processes of subdivision and fragmentation did not appear. The courts in old times did not apply the law of inheritance rigorously. But when the new judicial system was established under the British rule the law was administered to the letter. Further, the break-up of the joint family system and the growth in population tended to aggravate the disintegration of agricultural holdings.

The waste resulting from the disintegration of holdings is enormous. [Land is lost in the bunds constructed for separating plots and the supervision of scattered fragments becomes very troublesome as also their cultivation, because men and capital equipment have to be moved from plot to plot.] If the total holding of a cultivator is very small his capital equipment is only partially employed.

Attempts have been recently made by Government to encourage co-operative farming in various provinces. If a major number of the cultivator-owners of land are convinced of the benefits of co-operative farming, the scheme is compulsorily extended over the whole village. In this process the legal ownerships of different plots is preserved. But holdings are consolidated for the purpose of cultivation only. Some such method is practised by the villagers themselves. Ploughs and other agricultural equipment, as well as family labour, are borrowed and lent by all, thus reducing the capital requirements of each holding. All this, however, though it has achieved some significant results, does not relieve the distress. [If the law of inheritance is altered by introducing the principle of primogeniture, holdings will certainly be bigger. The political difficulty in this case is that of public opposition to a change in the age long practice now accepted as law. The economic difficulty is the possibility of the creation of unemployment of those people who will be deprived of their rights in lands.]

The law of equal inheritance is found not only in India but also in some other countries. But there, farmers exercise foresight and limit the family so as not to give rise to more than one claim on the land. The only remedy which gets clear of the political as well as the economic difficulty is for the agriculturist to practise birth-control. The law will then be rendered in-operative and

unemployment due to change in the law will not appear because there will be no people to remain unemployed. An additional remedy is a policy of rapid industrialisation which absorbs all the surplus agricultural labourers in new industries.

The simplest cause of the growing indebtedness of the agriculturist is his poverty. His budget does not balance because receipts fall short of his expenditure. It may not balance continuously from year to year in which case he would give up the land altogether as an uneconomic proposition. Usually, however, the balance is upset periodically. Sometimes the crop fails due to the failure of the rains and sometimes even though the crop is abundant the price of the produce falls too low. The disequilibrium thus caused drives him to the money-lender for debt who takes advantage of his weak position, whenever possible, by charging a high rate of interest. He charges a high rate of interest because of the uncertainty of the return of the loaned money. The cultivator has at different times to borrow in order to feed himself in a famine, or to pay land revenue, or to give back old loans or to incur necessary social expenses. These have been classed as causes of indebtedness. The necessity of borrowing for these purposes arises because his income is often reduced. His expenses cannot be reduced. On the contrary they have a tendency to grow. Unless, therefore, his receipts come upto the level of his charges he cannot make both ends meet. The receipts never come up to a level where he is enabled to pay off old debts. Thus debts go on mounting up. The total agricultural debt in India has been estimated at about Rs. 900 crores. The cultivator's position is thus gradually undermined. He loses his land and becomes only a landless tenant. This tendency was accentuated during the period of economic depression from 1929 to 1936.

Relief from
Indebtedness

Frequent legislation, to restrict the evil practices of the money-lender and to protect the person and property of the cultivator, has done little to solve the problem. There have been four types of laws designed to control the growth of indebtedness and its evil effects viz., (i) those which put restrictions on the practice of usury, (ii) those which rigorously apply the old custom of *damdapat* which prohibits any further accumulation of debt when the interest is equal to the original principal, (iii) those which make legally immune from attachment the cattle and implements of the cultivator and also protect his person, and (iv) those which provide for compulsory conciliation of debts. There are measures also which control the evil practices of the money-lender.

Side by side with these, the establishment of co-operative credit societies has been encouraged to provide facilities of cheap credit to the cultivator. Yet the problem is growing in magnitude. Governments in all provinces are undertaking schemes of compulsory debt conciliation. It is necessary that along with these attempts, which go to reduce the charges of the cultivators, attempts must also be made to increase his income. This can be done by improving the yield of his crop, by promoting village industries and by a constructive and far-sighted currency policy, firstly, of raising the prices of agricultural goods and secondly, of stabilizing them at a level where the cultivator's budget balances.

Problem of
Tenancy

Rights in landed property in India have grown in number and complexity through the past. Those who do not possess any proprietary rights in the land but only cultivate it for the landlord are called tenants. These tenants have always suffered from rack-renting and frequent ejection from the

land. In order to safeguard their interest in the cultivation of land government have from time to time tried to give legal protection to their tenures. [Thus occupancy and *miras* rights have been conferred on those who have cultivated the same pieces of land for a long period.] Since their sole means of livelihood is cultivation they should not be liable to frequent ejection if they do not satisfy the landlords' demand for higher rents. The Bombay Tenancy Legislation is expected to provide this security to tenants of *Zamindari* and *Inam* lands. There are many questions involved here concerning the payments of rents, the upkeep of landed property, capital investment and changes in the rents consequent on changes in the prices of agricultural goods. A bold policy alone is likely to solve the problem to the satisfaction of the aggrieved parties.

The methods of cultivation practised by the Indian farmer are very primitive. He has no means to buy costly and modern agricultural implements and no knowledge of improved methods of farming. His seed is of a poor quality and even if he uses good seed, in course of time good and bad seed gets mixed up. Further, though he uses manures known to him traditionally and adopts some kind of rotation of crops, his soil is not properly refertilized for lost ingredients. He tries often to level his land and construct bunds wherever the farm is likely to be denuded of its soil by rain water but the labour thus spent soon proves a waste as the bunds themselves are washed off by heavy rains in a short time. He has to depend upon the monsoons for rain. But the monsoon in India is so capricious that often-times it comes only in poor and insufficient showers, practically leaving the crops to burn away in the sun, or it comes in such heavy over-abundance as to wash away the crops which are in good condition. Cattle belonging

Productive
Efficiency

to the cultivator are poorly fed and are incapable of yielding efficient work. Further, as their number is too large in relation to the soil they become a drain on the cultivator's resources. The farmer has no means of securing a proper knowledge of markets and being a weak bargaining party has to sell his produce for unfair prices. The middleman contrives to take for himself a pretty large slice of the receipts which justly belong to the farmer.

Government has tried to help the agriculturist by promoting the consolidation of holdings and the use of efficient implements, distributing seed of improved variety, teaching the cultivator the latest methods of dry farming, providing him with irrigation facilities by canals and dams, giving him loans to undertake capital investment on his farm, encouraging the establishment of co-operative credit societies and societies for a number of other purposes, establishing cattle-farms to secure good varieties of milch and draught cattle and by regulating the markets so as to benefit the agriculturist. These attempts have, however, only touched a very small part of the total agricultural population. Much more work remains to be undertaken and carried through.

The village itself which is a small agricultural colony is devoid of good roads, lighting, drainage, sanitation, water supply, school, dispensary and post office. There is no corporate life and no sense of civic responsibility in it. Stark poverty faces most of the villagers and this leads to all sorts of excesses and crimes. Village reconstruction on model lines has to be immediately undertaken if the country is to be habitable and healthy.

Of all the Indian industries organised on a large scale, the cotton industry and the jute industry are the most important. The hinter-land of the port of Bombay and the area round

Large Scale and
Small Scale
Industries

Calcutta are their respective homes. The centres of the Cotton industry are Bombay, Ahmedabad, Sholapur, Nagpur and Delhi. There are some important mills also in the South. Jute factories are found mainly round about the port of Calcutta. The iron and steel industry is mainly found on the Chota Nagpur plateau at Jamshedpur and in the south near Bangalore. Coal is mined also in the Chota Nagpur plateau at Raniganj, Jheria and Asansol. The other industries are silk and woollen manufactures, sugar, chemicals, matches, tea, cement and paper. Persons employed in the cotton industry number 420,000 and in Jute industry 280,000. Capital invested in the former is roughly Rs. 32 crores and in the latter roughly Rs. 20 crores.

Most of these industries are modern. Within their period of growth they have undergone a series of ups and downs. The finance of the concerns mainly depends upon the promoters who are also their managing agents so that though the companies are joint stock organisations, the major interest is that of the managing agents. These agents raise capital from the general public and also from the banks. The concerns suffer from insufficient capital as industrial banking has not developed in India.

Foreign competition has also worked against the prosperity of the industries. But India has now adopted a protectionist policy and this has resulted in a number of industries getting protection through import duties and other devices. Government can also help them by subsidies and bounties as well as by agreeing to purchase their own supplies from native concerns. They can promote technical education in India and thus provide technical skill which is so urgently needed. Efforts in this direction have not all been satisfactory.

Our cotton manufactures are mostly consumed within the country though we have been exporting appreciable amounts of them to other countries. Our internal needs are also catered for by the native hand-loom industry and by foreign imports of cotton cloth from Great Britain and Japan. Out of our total raw and manufactured jute we export a fairly large quantity. Though India has a monopoly of jute, in recent times due to the discovery of substitutes for it we have been steadily losing foreign markets. Above all, the industries as a whole, are suffering from the economic depression in recent times.

Problem of Labour

With the growth of modern industries the labour problem is assuming a growing importance. We have a large amount of surplus labour on land which could be transferred to industries. With the present slow development of industries however the surplus of agricultural labour cannot be absorbed in them. Labourers in India have a low physical and mental efficiency. Moreover labour is migratory in character. Workers go to the town in search of employment when there is no work on their own farms but return to their lands when cultivation begins. This is mainly due to the adverse conditions in industrial towns. The worker is subjected to long hours of exacting work, has to lose all his freedom and even self-respect and has to live in dark, dingy and disease-stricken slum areas. All these reduce his vitality and hence he longs to go home and enjoy the free air. Moreover, individually he is in a very weak bargaining position. The jobber, the money-lender, the paying clerk—all have an eye on his slender purse.] Recently, trade union activity has grown enormously and workers are having increasing recourse to strikes and such other methods to get their grievances redressed. The Labour Commission has recommended

the appointment of conciliation boards to settle disputes between workers and employers.

The problems of compensation for accidents, maternity benefits, leave with pay, housing, education, relief from indebtedness etc., are being tackled, but not in a very satisfactory way. It is hoped that the new provincial ministries will undertake to solve them efficiently.

Compared to our internal trade our external or foreign trade is small. Yet it has a great importance in our economy since foreign markets absorb many of our staple products like cotton, jute, oil-seeds and skins. Our external trade is concentrated only in a few ports like Bombay, Karachi, Madras and Calcutta. Exports mainly consist of raw materials like those mentioned above and imports consist of manufactured goods like cotton cloth, machinery, chemicals etc. A large part of our export and import trade is with the United Kingdom which absorbs more than 25 per cent of our exports and sends us about 40 per cent of our imports. Our external trade is principally carried on by English and other foreign firms. The financing of this trade is also done mostly by foreign exchange banks. Even the carrying trade is undertaken by foreign shipping companies.)

In recent times our trade with countries other than great Britain has grown in importance. Japan now stands next to United Kingdom in the list of countries with whom we have trading connections.

India is a debtor country. She has to borrow a large capital from the United Kingdom on which she has to pay interest year by year. She has to pay in addition part of the India Office expenses in London and charges on account of the pensions of retired British officers who

India : a Debtor
Country: Sterling
Charges

served in India. All these charges have to be paid in British money called sterling. These expenses are called *sterling charges*. This money is usually spent by Englishmen in buying commodities in India. The value of our exports is thus higher than that of our imports by the value of the sterling charges. If the rate of exchange between the Indian rupee and the pound sterling is steady we pay these sums regularly. If the rate falls we have to pay more in rupees and if it rises we have to pay less in rupees. But a high rate discourages our exports and a low rate encourages them. Indeed, the payment of our sterling charges is intimately bound up with the fate of our export trade. In the last five years our export trade has gone down and has made it difficult for us to meet our sterling charges.

There has been a tremendous fall in our export and import trade, the total of which has been reduced from approximately Rs. 600 crores to nearly half that figure. Efforts are being made by all countries to revive their own external trade. On our part, the Government of India have been moving very slowly. Recently trade agreements have been entered into with Japan, Great Britain and other empire countries with a view to widen mutual markets for each other's products.

Statistics of our internal trade are very meagre. Still it appears that it is nearly 15 times as large as our external trade. It consists of trade between provinces, towns and districts as well as the coastal trade. It is not possible to say much about it in this place.

We have more than 45,000 miles of railways and 275,000 miles of metalled and unmetalled roads. The lay-out of railways was originally dictated by military considerations and by the needs of external trade. More than Rs. 800 crores worth of capital

has been invested in railways. No attention was paid to the development of roads so long as railway construction was going on apace. For a time the railways were not a paying proposition. They began to yield profits only lately but the situation has again worsened from the year 1929. Railways were being operated by foreign companies since most of the capital was foreign. Latterly, however, the Government of India is gradually taking over the management of these important means of communications.

With the close of the Great War motor transport began to increase rapidly in India and the question of roads at once assumed a prominent position in the economy of the country. Need was felt for bettering the roads all over the country. Side by side there arose the question of rail and road competition. Government has created a Central Road Development Fund following the recommendations of the Road Committee. They have also recently undertaken legislation to control motor traffic and to regulate conditions of competition between railways and roads.

India, with all this, is poorly equipped with means of communications. It is necessary that, side by side with the policy of co-ordination between rail and road transport, efforts should be undertaken also to bring about a rapid development of both the transport facilities.]

CHAPTER IX

PUBLIC FINANCE

This chapter is an essay in what may be called applied Economics. It does not say anything new by way of economic analysis, but is an application of the theory we have studied in the previous chapters to one of the important problems facing every organised community.

We have already considered in the chapter on 'Human Conduct in the Real World' the influence wielded by the state and its institutions on the economic life of people.

State and Economic Activity
Economic activity has everywhere to be carried on within the framework of legal forms and social institutions upheld by the state. But the state also takes a more active part in shaping the economic life of its subjects. Besides maintaining law and order, without which continuous economic activity is impossible, the state also undertakes to perform a number of other functions which entail disposal of a part of the community's scarce resources. Undertaking a programme of public works, building of armaments, conducting experimental work in agricultural improvement, offering educational facilities, and working of railways are among the functions performed by modern states. These functions are conducted on behalf of the community and their benefits are shared by all its members. Not only that, but such functions of the state have become so vital to the smooth working of the economic system that the state is an indispensable factor in the economic calculations and expectations of private entrepreneurs.

In other ways also modern states control economic life. Through the power they command within their boundaries, states are able to influence the conduct of international economic relations. By manipulating the tariff or the rate of exchange it is possible for states to benefit their own subjects. They may also by negotiation and agreement conclude trade treaties with other states in a spirit of mutual give and take. In a world where no single country is self-sufficient in relation to its needs, the influence exerted by international relations on the economic life of any country is of profound significance. It lies in the power of Governments to decide what those relations will be and through them to provide the external limits upto which the economic enterprise of their people can extend.

But the maintenance of the complex machinery of the State with its officials and establishments involves a great cost. For the most part, the State differs from private entrepreneurs in that it cannot charge a price for every service it offers. The cost, therefore, cannot be met from the proceeds of the sale of its services—many of them have to be given free, e. g., the police service, in the general interests of the public. Nor is it possible to fix a price for such services as the defence service. The costs of these different services have of necessity to be met out of compulsory levies on individuals which cannot be related in any exact way to the benefits they receive. This the State does through *taxation*. Where it is possible to make a charge for specific services, the State fixes their prices, as for instance in the case of the State-owned railways. For certain purposes the State may even borrow money from the public at a specified rate of interest, and out of this loan construct permanent works which cannot be financed out of taxes.

**The Need for
Taxation**

The revenue of the state consists of the proceeds from taxes, the profits from the commercial undertakings of the state and the income which it derives from its property in land and capital assets. The state expends this revenue in providing its members with collective services like external and internal defence, justice, education, etc., in paying interest on the capital borrowed from the subjects and in making available to them a large number of social benefits. The state also raises loans from the public for expenditure on the building of capital assets or on the prosecution of war.

It must be emphasised that not only the functions the state performs, but the way in which it performs them is of significance to the course of economic activity of the community. The policy the state follows in raising its revenue and distributing it over different items of expenditure, that is to say, the choice it makes of particular methods among a number of alternative methods of raising and spending its income, has a considerable influence on the general distribution of the resources of the community as a whole. The policy of the state should be such as to leave the distribution, after its income has been raised and spent, at the most economic level. There are difficulties in the way of determining what is the most economic level at any time, but we shall go into them later. Let us first consider the revenue side of public finance, deferring our discussion of loans to a later section.

There are two principal sources of public revenue : taxes and prices. A tax differs from a price in two respects. It is, in the first place, a compulsory charge imposed by the public authority on the members of the state. Secondly,

it is not a charge for a specific service rendered by the public authority to the tax-payer. This is often expressed by saying that a tax is characterised by the absence of a direct *quid pro quo* between the tax-payer and the taxing authority. Thus, for instance, the income tax which is paid by all persons whose annual income is over two thousand rupees, or the new property tax imposed on owners of buildings in Bombay, are not prices charged for any particular services rendered to income-tax-payers or to property-tax-payers. The receipts from these taxes are used to meet the general cost of government. On the other hand, the fees which students in government schools and colleges pay are prices for receiving education.

The Government does not compel students to pay those fees if they do not go to these institutions. Nor are the fees a general contribution to government revenues unless government is making a profit out of the management of these institutions. Similarly, the fees paid for registration of marriages cannot be regarded as a tax. Fines imposed by courts of law are, on the other hand, taxes, though the stamp duty in respect of suits referred to courts is a price. The line between taxes and prices is, however, not an easy one to draw, and there may be cases in which an element of compulsion may exist side by side with a specific service, as when registration of births is made compulsory and a fee is charged at the time of registration. But for practical purposes the distinction is useful.

When a tax is levied, it has to be paid by those on whom it is levied. But the burden of all taxes is not necessarily borne by those who pay them. This may appear paradoxical, but an understanding of the distinction between paying a tax and bearing its burden will make the

The Incidence
of Taxation

meaning clear. Take the case of the income tax. It is a tax on persons having incomes over a certain amount. Every one whose income exceeds the minimum limit (Rs. 2,000 in British India) has to pay the tax. If the income increases, so does the tax. The tax-payer in this case is not in a position to shift the burden of the tax to some one else. Either he must not earn more than 2,000 rupees a year or he must bear the tax. On the other hand, take a tax on imported motor cars. The tax is payable by the motor dealer who imports motor cars. But he can so raise the price of the cars when he sells them to his customers as to shift the entire burden of the tax on to the shoulders of the buyers. Though the dealer pays the tax, he does not bear its burden.

The direct money burden of a tax is known as its incidence. Taxes are classified as *direct* and *indirect* according as the incidence of taxation is or is not on those who are legally responsible for paying the tax. The income tax is a direct tax. A tax on motor cars is an indirect tax. If motor cars are imported not by dealers, but directly by the potential owners of those cars, and if the cars are not used for any professional purpose (which would give an opportunity for the users to raise their fees to the extent of the tax on their cars), the tax on motor cars would be a direct one. But it is administratively more economical to tax the dealers of imported cars and of other commodities so that, generally speaking, taxes on commodities tend to be indirect, that is, their burden can be shifted on to others than those who pay them.

There are clearly three possibilities as to the incidence of taxation. It may be entirely on the payer, entirely on some one else, or partly on the payer and partly on some one else. In the case of a tax on a commodity collected

from the sellers such as a duty on the sale of tobacco, the way its burden will be divided between the seller and the buyer will depend on the relative elasticities of supply and demand for that commodity. If the supply is very elastic the seller may be able to raise the price to the full extent of the duty and shift its entire burden on to the buyer. If, on the other hand, demand is very elastic, so that a little rise in price reduces it by a large quantity, the seller may have to sell at the old price bearing the entire burden of the tax himself. If both supply and demand are elastic the burden of the duty will be shared between buyers and sellers in proportion to their relative elasticities. That is to say, if demand, for instance, is more elastic than supply a larger portion of the duty will be borne by the sellers as compared to that borne by the buyers.)

Considerations of the incidence of taxation are of importance in determining any particular plan of taxation with a view to distribute its burden in the most economical way. Obviously the burden should be so distributed as to cause the least possible sacrifice to the community. If the community were to consist only of one individual it would have been possible so to arrange taxation that the marginal utility of the last pie taken away was equal to the marginal benefit secured from the services provided by the state. But the community consists of a number of persons. Even then, if the tastes, incomes and needs of all were alike, it would be possible to distribute the burden of taxation equally on all, and keep the total sacrifice of the community at the lowest level consistently with the services to be offered by the state. The question of incidence in this case could have been treated simply. And a certain part of the income of each person paid into

Most Economical Tax system

the public treasury should have solved the problem of taxation.

As a matter of fact, the incomes, needs and tastes of all people are not alike. The result is that a single pie taken away in taxation does not mean the same sacrifice to all. Further, the sacrifice involved in taxation of different persons is not capable of being compared. For ultimately sacrifice, or loss of satisfaction, is a subjective experience. It is incommensurable. There is no objective criterion for measuring it, though for an individual it may be possible to compare *his* satisfaction at one moment with a certain income, with *his* satisfaction at another moment with the same or a different income. It is here that an arbitrary though not unreasonable assumption has to be made in order to get over the difficulty. The assumption is that the money incomes of different individuals are an index of their total satisfaction. The larger the income I have, the greater is my satisfaction, but the less also is the utility of the last unit of money to me, as compared to another person who has a smaller income. The loss in satisfaction when one pie is taken away in taxation is less for me than for another whose income is less than mine. Because, to the latter the last pie has a much greater utility than it has to me.

If the total sacrifice to the community is to be kept at the lowest level then clearly persons with larger incomes must be taxed at a higher rate than persons with a smaller income.

Progressive Taxation

A tax of 10 per cent. on an income of Rs. 1,000 involves a greater sacrifice to its owner than a tax at the same rate on an income of Rs. 100,000. The rate of taxation, therefore, must increase with increasing incomes. This is the principle of progressive taxation. Taxation will have

to be progressive even when equality of sacrifice for all tax-payers is aimed at. It will have to be much more so when for the community as a whole the sacrifice involved is to be the least possible. The rate of progression will naturally depend on the rate of the fall of utility for each addition to the income.

A tax which is levied at the same rate on all persons is a *regressive* tax because of the progressively heavy sacrifice it imposes on small incomes. Thus a poll-tax of so much per head means an increasingly greater sacrifice as you go down from higher incomes to lower incomes, and is regressive in its nature. Similarly, a tax on salt, which is a commodity of wide consumption among people with very low incomes, is regressive.

From this point of view taxes on commodities which are consumed alike by the rich and poor are regressive, and impose a far heavier sacrifice on the community than their money yield might indicate. But it is not possible to do away with taxes on commodities altogether. Nor is it easy to make them progressive according to the purse of the buyer because it is impossible to know the incomes of people who buy those commodities in the market. A direct tax like the income-tax would be an ideal single tax consistently with the principle of progression. But it alone is insufficient to yield the necessary revenue without setting into motion forces which are harmful to the proper functioning of the economic system. For, beyond a certain rate, it is bound to check the incentive to earn additional incomes, and consequently to check the economic activity of the community reducing incomes still further, and thereby reducing the yield of the tax. A combination of direct and indirect taxes has therefore to be accepted.

Both taxation and public expenditure affect the economic life of a community by their influence on people's ability and desire to work and save, and on the distribution of the resources of the community. They also affect the distribution of the incomes among the people. Thus a tax-system under which the incomes of the people are so curtailed that they cannot afford the necessary amenities of life, such as medical help or education, the ability of the people to work will suffer. So also will their ability to save be limited because of loss of income. A high rate of land revenue might easily have such an effect. Similarly, the desire to work and save may be affected adversely if an adequate income cannot be earned by working, or by saving and investing money. Taxation also affects the distribution of economic resources. Thus a heavy duty on tea might lead people to substitute coffee for tea in their daily necessities. In the extreme case, tea-plantation may be stopped altogether and coffee-growing given an encouragement.

Taxation is a potent means of reducing inequalities of incomes. A progressive tax reduces inequalities by taxing the incomes of the rich at a higher rate than those of the poor. A regressive tax, on the other hand, increases inequalities by causing a greater loss of satisfaction to the poor than to the rich and thus aggravates already existing inequalities. It is possible, however, to counteract the adverse effects of taxation by a policy of wise spending by the public authority.

As public finance is more an art than a science, certain canons of practical utility have been laid down for the guidance of the statesman. According to them a system

Effects of
Taxation

Inequality of
Incomes

Canons of
Taxation

of taxation should be characterised by certainty, economy, convenience and equity. People must know for certain what they have to pay in taxation so that they may make the necessary adjustments in their expenditures. Secondly, the collection of taxes must be done with the least cost. A high rate of tax on a few sources would be more economical from this point of view than a low rate on a number of sources. This is one of the reasons why incomes below a certain minimum are exempt from taxation. Otherwise, the cost of collecting small sums from a large number of small-income-earners would be too great for the tax to be worth while imposing. As far as possible, the taxing authority must consider the convenience of the tax-payers since it reduces much of the unpleasantness of taxation. Lastly, the system must be fair to all. We have already seen how considerations of equity or fairness as between different persons necessitate the adoption of the principle of progressive taxation.

We shall now turn to public expenditure. At the outset it must be pointed out that

State Functions there are no fixed limits to the extent of state activity and consequently to public expenditure. The theories of what a state ought to do have differed from a police-state concept confining state-functions to the minimum required for the prevention of force and fraud, to a totalitarian state ideology leaving nothing outside the pale of effective state authority. The actual functions performed by the state are a reflection of the ideas of its subjects, expressed or implicit, of what they consider necessary to be done by the public authority on behalf of the community. But everywhere the range of functions performed by the state has gone on widening, mostly because it is more efficient to act collectively than through private individuals. Functions like the imparting

of education or maintaining a standard of public cleanliness and health, cannot obviously be left into private hands. The industrial system, again, has brought in its train a number of problems, such as housing and unemployment, which can be tackled only by the organised force of the community. There has been a steady growth of state activity in these spheres as can be seen from the increasing expenditure on social services and nation-building departments in recent years.

The expenditure of the state varies according to the scope of state activity. At the commencement of every financial year, the Finance ministers of different governments prepare an estimate of the expenditure on various departments of state in the ensuing year and devise ways and means of raising the revenue which would meet that expenditure. The process in the preparation of public budgets is thus the reverse of what we ordinarily find in the case of individuals. For individuals first make an estimate of their incomes, and then decide the way they will distribute them on various items with a view to maximize satisfaction. In the case of public authorities, however, they estimate at first the expenditure to be incurred in the ensuing year and then raise the necessary income by taxation.

But like the individual the public authority should also aim at maximizing the benefit to the community by its expenditure on different heads. Like the sacrifice through taxation again, it is difficult to measure the benefit through public expenditure. The principle of distributing expenditure with a view to obtain equi-marginal utility cannot obviously be adopted since the community is not a superpersonality with feelings and emotions. Nor can

**Budgets: Public
and Private**

**Maximum
Benefit**

satisfactions of different persons be compared or measured so as to find out the net gain to the community as a whole.

Any calculations as to communal gain, therefore, must necessarily be arbitrary and must reflect the subjective estimations of those persons who act on behalf of the community in deciding on different items of expenditure. But on the basis of the assumption that money incomes are an index of the satisfaction enjoyable by different persons, we can say that total satisfaction will be maximized if the benefits of public expenditure are also distributed progressively as the incomes of their recipients fall. This is because the utility of an additional pie expended for the benefit of the poor is much greater than if it is spent for the rich. Thus the grant of free education availed of by the poor increases the total satisfaction of the community to a much greater extent than a grant-in-aid to a public school to which children of the richer people alone get admission. It is possible to assess the effects of public expenditure on economic life in the same way in which we discussed the effects of taxation.

Expenditure on education and medical facilities is likely to increase efficiency and through it the ability of people to work and save. Increased ability to work would mean a larger volume of goods and services which a worker can command. On the other hand, too facile a grant of amenities might reduce the desire of people to work for present income, and to save for future provision. But it may also increase the desire for a higher standard of life, in which case the increased amenities will only be an additional incentive to greater efforts. Expenditure may also reduce the inequalities between people belonging to different strata of society. Free education, for instance, would diminish the inequality of opportunity for employ-

Effects of
Expenditure

ment. Old age pensions and unemployment benefit may likewise reduce the inequality of incomes between different people making for greater social stability and increased total satisfaction for the community.

As a policy, state expenditure can also be used to promote certain lines of activity and to discourage certain others. Subsidies given to milk producers, for instance, might increase the production and consumption of milk and raise the efficiency of the people. In course of time people might take to milk by force of habit and prefer it to tea. Many activities which would not be undertaken by private individuals can be promoted by the State. Railway construction is a case in point. If government undertakes to build railways or gives subsidies to private companies for building them, they will bring about a re-arrangement of the community's resources. Because of the easy means of communication the nature of crops may be changed. Farmers may find it profitable to produce crops for distant markets. Cotton may be grown where formerly jowar was the staple produce. The state may also undertake capital expenditure on irrigation, roads, museums, research laboratories etc., which would be paying concerns in the long run. It can thus make an investment on behalf of the community which may make up for the deficiency of private investment. Public expenditure thus not only brings about a diversion of resources at any time, but also redistributes them over a period of time.

Public Debt

The question of capital expenditure brings us to the discussion of public debt. A large part of capital expenditure is met not out of taxes but out of loans raised by the state. It is not that loans are always used for building capital assets. They may be used to meet current demands, as when a

war or its prospect demands a heavy expenditure on armaments. According as they are used for the one or the other purpose public debts are classified into *productive* and *unproductive* debts. Productive debts are those which yield a certain percentage of return and which can, over a period of time, be amortized through the profits. Thus a loan raised to finance a hydro-electric power project may be productive if, in course of time, the yield of the sale of electricity generated by it brings in a return adequate to meet the interest charges on the loan, and to build up a sinking fund to be used in paying off the initial loan. A loan raised to meet war-expenditure, on the other hand, is unproductive, though it may be absolutely essential for the defence of the community.

A loan may be raised within a country, or in a foreign country. But in either case it imposes a burden on the taxpayers who have to pay the annual interest charges. In the budget of every modern government a considerable amount is devoted to such payments for debts. In the case of Bombay nearly 10 per cent of the provincial expenditure is incurred on the debt services. In the case of the United Kingdom it is more than 20 per cent. It has been sometimes argued that public loans constitute a charge on future generations to the extent of the interest they have to bear. But a little reflection will show that, in the first place, the benefit of capital expenditure accrues as much to future generations as to the present; and secondly, when we say that future generations have to bear the burden of the debt through additional taxation, we must not forget that the interest also is paid to members of the future generations. What happens, in effect, is a redistribution of incomes among the members of future generations. There may be, indeed there are, other strong arguments

against raising loans for certain purposes, but this is not one of them.

**Public Finance
in Economic
Depressions**

In periods of economic depression when the general economic activity is at a low ebb, when money is lying idle in the hands of private individuals or in the coffers of banks, the state plays a useful part in restoring prosperity by stepping into the shoes of the private entrepreneur and undertaking large-scale investments. A programme of public works on a huge scale might go a long way in lifting the depression through increased incomes, rising prices and profits, and a return of confidence in the business community. For this purpose the state might raise loans on a large scale and the resulting prosperity might more than offset the sacrifice in additional taxation on account of the interest on loans.

**Balanced and
Unbalanced
Budgets**

Though ordinarily a budget should be balanced, in the sense that recurrent demands should be met out of taxation rather than by borrowing, it might be necessary to raise loans to meet substantial non-recurrent demands. To the extent of these loans, the budget might be unbalanced, in the sense that at the existing rate of taxation the expenditure is greater than the revenue. Additional taxation will have to be levied in order to meet the increased interest charges. Finance ministers and the general public are, therefore, reluctant to face an unbalanced budget. But as we have seen above, in periods of economic depression an unbalanced budget may be preferable to a balanced one. The additional taxation can be raised from the additional incomes generated by the public works programme referred to. There is yet another way of looking at the problem of balancing the budget. Though the period over which a

budget has to be balanced is one year, from the standpoint of business activity all years are not alike. Some years are more prosperous than others. In times of prosperity the receipts from taxation go up making a larger expenditure on social services possible. In the lean years, on the other hand, the receipts from taxation fall while the need for social services, such as unemployment benefit, actually increases. It becomes impossible to balance the budget without either curtailing expenditure on the social services or increasing taxation on already diminished incomes. A proposal is, therefore, made to remedy this uneven situation by aiming at balancing the budget not in every year, but over a period of years. A reserve fund could be built up in prosperous years to be used to supplement the receipts from taxation in the lean years without curtailing expenditure, and in fact increasing it. Orthodox ideas of the superiority of a yearly balanced budget over an unbalanced one are as antiquated and exploded today as ideas about the police-state. Public finance has now come to be looked upon as an effective weapon of combating disequilibria in the economic system.

Public debts can be repaid either out of taxation or by raising other loans at a lower rate of interest. The usual method of paying them out of taxation is by means of a *sinking fund* devoted to a reduction of debt. This fund is fed by annual additions from the receipts of taxation. Another method is that of a capital levy which is a tax on capital assets imposed once and for all in order to wipe off a substantial part of the debt. But there are difficulties in the way of imposing such a levy and it is possible only when it is necessary to meet a national emergency.

We shall now consider the budget of the Government of India for 1939-40 and examine it in the light of what we have said so far.

The Indian
Budget

General Statement of the Revenue and Expenditure of the
Government of India: Budget Estimate, 1939-40.

Revenue		Expenditure	
(In lakhs of rupees)			
Customs	... 40,65	Direct Demands on	
Central Excise Duties	8,28	Revenue	3,66
Corporation Tax	... 1,88	Irrigation	... 10
Taxes on income other		Posts and Tele-	
than Corporation		graphs (capital	
Tax	... 14,66	expenditure)	... 3
Salt	... 8,35	Debt Services	... 12,66
Opium	... 49	Civil Administration	11,89
Debt Service	... 63	Tribal Areas	... 1,87
Civil Administration	1,04	External Affairs	... 64
Currency and Mint	... 67	Baluchistan	... 64
Civil Works	... 31	Currency and Mint	... 35
Receipts from Indian		Civil Works	... 96
States	... 63	Central Road	
Other Sources of		Fund	... 1,61
Revenue	... 1,79	Grants-in-aid	
Posts and Telegraphs		to Provincial	
(net contribution		Governments	... 3,04
to general revenue)	1	Miscellaneous	
Railways		Adjustments	... 2
(net contribution)	2,13	Defence Services	
Payments by Burma	... 2,96	(net)	... 45,18
Deduct—share of In-		Surplus	... +5
come-Tax revenue			
payable to Provin-			
ces.	... -1,78		
	Total		Total
	82,70		82,70

It will be noticed from the above table that on the Revenue Side revenue side there is a preponderance of indirect taxation. Except for the income-tax and the corporation tax which together amount to Rs. 16,54 lakhs all the principal heads of revenue are indirect. We have seen how, all indirect taxes are more or less regressive. A tax like that on salt is all the more so because salt is a commodity which enters into the daily consumption of all sections of the community, rich as well as poor. Income-tax, which is the most important source amenable to progressive taxation, does not in India mitigate the regressive nature of the tax-system. It should be further considered that a large part of the interest paid on the national debt goes to the richer sections of society. The disproportionately heavy salary bill in the expenditure on civil administration and on defence services mainly benefits those persons who are liable to pay income-tax.

On the Expenditure Side expenditure side the most important item is defence services. Next to it are the debt services and civil administration. Thus more than 80 per cent of the total expenditure is made up by the cost of administering the country. Except for the expenditure on civil works, posts and telegraphs, and other miscellaneous items there is hardly any room for developing social services. Most other charges are fixed. So that the benefit got out of public expenditure is not commensurate with the sacrifice involved in taxation. Not only that, but owing to the top-heavy system of administration the benefits received are not proportionate to the sacrifice involved.

Provincial Budgets If we turn from the central to the provincial governments' budgets we have a different story to tell. Especially since 1937 the provincial governments are developing a popular

policy of public finance. New sources of revenue are being tapped in order to develop nation-building departments. But the scope for the expansion of revenue is extremely limited, with the result that after all possible efforts the budget still leaves room for improvement. The sources of provincial revenue are for the most part inelastic while there is a large scope for public expenditure on the social services. Policies like those of Prohibition and reduction of land revenue entail a heavy loss of revenue. This has to be made good by other taxes like the Bombay urban immovable property tax, or the U. P. employment tax. The sales-tax is also increasingly being used to meet deficits in provincial budgets. The effect of these policies and taxes is clearly to relieve the burden on the shoulders of the poor peasant and worker, by transferring it on the comparatively richer people who are in a better position to bear it. Such a system has everything to commend itself for acceptance, since it changes regressive into progressive taxation.]

The schemes for social expenditure on education, rural development, public health and productive public works which the provincial governments have undertaken are also in keeping with the principle of maximizing total benefit to the community by increased amenities of life for persons with low incomes. Better health and larger incomes will increase the ability of the large mass of people to work and save. The inequalities of incomes are also reduced to a certain extent. The richer classes in society who have to bear the burden of increased taxation also stand to gain by the increased economic activity in the community. But the limit after which the ability as well as desire of the taxpayers to work and save begins to decline must not be over-stepped by increasing taxation. It might, therefore, be necessary for provincial governments to raise loans for

Social
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undertaking non-recurrent expenditure on schemes of public works such as roads, canals, etc.

On the next page we give the budget estimate for 1939-40 of the revenue and expenditure for the province of Bombay as a specimen of provincial budgets. For comparison we have also given figures for 1936-37 which was the last year under the old constitution.

Principal Heads	Revenue		Expenditure	
	<i>(In thousands of rupees)</i>			
	Actuals 1936-37	Budget 1939-40	Actuals 1936-37	Budget 1939-40
Provincial share of				
Central Income-tax	...	32.20
Land Revenue	3,44,32	3,38.63	46,93	66,63
Provincial Excise	3,25,29	1,77.10	41,49	39,37
Stamps	1,46,99	1,43.76	1,98	1,98
Forest	47.72	41.54	29,01	27,32
Registration	15,05	14,45	5,68	5,45
Receipts under Motor Vehicles Acts	41,07	43,30	17,88	19,95
Other Taxes and Duties	48,67	2,06,42	17,22	11,49
Total	9,69,11	9,97,40	1,60,19	1,72,19
Irrigation	20,06	33,32	48,20	58,77
Debt Services	93,43	70,08	1,62,45	1,23,61
<i>Civil Administration</i>				
General administration	1,04,97	80,97
Administration of				
Justice	15,01	18,93	62,19	65,86
Jails	4,95	4,04	18,04	16,11
Police	6,85	10,82	1,42,76	1,43,71
Education	14,93	21,08	1,59,98	2,09,92
Medical	14,14	14,90	41,79	47,79
Public Health	19,08	28,55	22,60	31,48
Agriculture	3,79	3,94	13,76	13,06
Veterinary	31	42	3,90	4,40
Co-operation	2,16	2,45	6,08	17,63
Industries	6,51	4,99	6,57	13,14
Miscellaneous	1,83	1,86	8,12	11,74
Total C. A.	89,56	1,11,98	5,90,76	6,55,81
Civil Works	38,82	57,94	1,10,88	1,35,19
Miscellaneous	17,77	18,79	1,28,42	1,47,58
Extraordinary Items	12,74	21	17	71
Grand Total	12,41,40	12,89,72	12,01,07	12,39,86

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