THE THEORY OF INTEREST

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THE THEORY OF INTEREST

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FOREWORD

FEW topics in economics have aroused so much academic debate as the theory of interest. Few topics have led to so many divisions of opinion among economists, so many misconceptions and so much of vigorous attack and equally vigorous defence. The publication of Keynes's *General Theory* did nothing to appease the fratricidal war, rather it added to the fury of the battle. It seemed to unsettle points which had already received wide acceptance and emphasize the differences that already existed among the warring economists. Mr. S. Lakshminarasimhan has addressed himself to the task, an arduous task, of appraising the different theories of interest, of reconciling the differences between rival schools of thought and of building up a theoretical structure based on the greatest common measure of agreement among economists.

For long we have been familiar with two sets of interest theories, non-monetary and monetary, each further subdivided into subjective and objective. The subjective non-monetary theory is associated with Böhm-Bawerk and Fetter. For them the rate of interest is a function of an individual's time-preference. The objective non-monetary theory is represented by Wicksell and Knight. For them the rate of interest is the outcome of the marginal productivity of capital. There is also a group of economists, led by Irving Fisher, who explain the rate of interest in terms of both the subjective and objective elements of the non-monetary theory.

The monetary explanation of the phenomenon of interest rendered so popular by Keynes has its exponents both on the subjective and objective sides. While agreeing among themselves that interest was a purely monetary

phenomenon, the rate of interest being determined by the demand and supply of money, some like Lerner and Robinson stress the subjective factor while others like Robertson, Haberler and Ohlin stress the objective factor. Subjectively considered the rate of interest is the result of liquidity preference, that is, it is a payment made for parting with liquidity. Objectively considered the rate of interest is the result of the supply of and demand for loanable funds, that is, it is a price paid for sums lent per unit of money per unit of time. It is thus seen that there are five variants of interest theory—the two non-monetary and the two monetary theories and the theory which in the Wicksellian fashion attempts to reconcile the monetary with the non-monetary. The impression that is left on the reader's mind is that the author discards no theory *in toto* but proves that each theory is true under given conditions or valid under given assumptions. He proceeds to discover the extent to which interest functions as a regulator of the economic system. After the manner of Wicksell he traces the influence of the interest rate on banking policy and price-level and in doing so provides us with some tools for regulating the regulator.

At any given moment an individual has certain economic resources at his disposal. He has the power of allocating these resources among various uses or for various purposes such as holding ready cash, investing in securities, engaging in production, or spending on consumption. The apportionment of his resources on each of these yields a return to him. One could thus speak of rates of return on resources devoted to each of these purposes. The returns may be expressed in marginal terms, that is, as marginal rates of substitution between the respective resources. The rates of return

may be compared with one another either objectively or through the conversion of a subjective satisfaction into something measurable such as price.

An individual when confronted with these alternative rates of return from the outlay of his resources would, other things being equal, seek to obtain the maximum amount of gain. Applying the technique of marginal analysis, the maximum amount is reached through that distribution of resources which equalizes the marginal revenue in the several uses. These decisions have to be made not only by individuals but also by corporate bodies such as business concerns, banks and governments. If, due to economic friction or any other cause, no attempt is made to maximise returns the marginal principle will lose its significance. But the existence of a desire to maximise returns by the application of the marginal principle is fairly universal. For example, whenever a change takes place in any one of the marginal rates there will be a tendency on the part of individuals or firms to re-allocate the resources until once again equality of rates at the margin, though at a different level, is restored. In economic analysis the rate of interest refers to the marginal rate of return on a standard investment made by a representative institution or as Pigou would say, by a representative Englishman.

The development of the theory of interest appears to have proceeded along the familiar logical steps of thesis, antithesis and synthesis. Propositions have been made, counter-propositions have been adduced and finally conflicts have been resolved and reconciliations brought about between rival theories. One could be wise after the event and propound the doctrine that every one of the theories takes account of some factor or other which must be considered in any scientific exposition of the

theory of interest. The several seemingly independent theories can be brought together under one umbrella, as it were. The time-preference theory stresses the marginal rate of return on consumption; the productivity theory emphasizes the marginal rate of return on production; the liquidity-preference theory assigns the leading role to the marginal rate of return on cash; finally the loanable-funds theory concentrates on the marginal rate of return on securities. In proportion as people act on the self-regarding principle of maximum satisfaction the diverse marginal rates tend to equality. All these elements play a part, the importance of each varying with circumstances, in bringing about an adjustment whenever the equilibrium is upset.

The author has worked his way through the alternative formulations of the theory of interest. He has shown that the different approaches to interest-theory are not mutually exclusive nor are they irreconcilable. He has unravelled the knots in the theory of interest tied up by the Cambridge school and the Swedish economists.

In sum, there has occurred in recent years an incessant debate in the theory of interest and the cognate subjects of money and trade fluctuations. The debate has turned partly on questions of the meaning of words, partly on questions of the right mode of approach and partly on questions of banking policy. One has to discover, as our author has tried to do, how far the disputants are really at issue on matters of substance. The debate has now reached a point, the author rightly claims, where it is possible to sum up the whole position broadly in general terms and to distinguish between the various parts of the controversy that are concerned primarily with words, methods or substantial issues. He has attempted to give an account of the new developments

in interest theory, rejecting what is superfluous or merely superficial and taking care not to expose himself to the charge of distortion and misrepresentation. The long-felt need for a readjustment of views and shift in emphasis has now been supplied by the author.

V. L. D'SOUZA.

PREFACE

DESPITE the large number of works on the theory of interest there is none which deals with all aspects of the problem. In this book I have attempted to present a co-ordinated picture of the various strands of thought. The contributions of the more important economists are appraised and fitted into their proper place in a reconsideration and restatement of the interest theory. I have bestowed particular attention on the monetary approach to the problem. I have also argued out the case for co-ordinating the Theory of Value and the Theory of Money.

It is impossible for me to mention, in a book of this kind, all the sources from which I have derived inspiration. But it is only just that I should make special mention of Böhm-Bawerk's *Positive Theory* and *Capital and Interest*, Keynes's *General Theory*, Fraser's *Economic Thought and Language*, Wicksell's *Lectures* and Lindahl's *Studies in the Theory of Money and Capital* (particularly the section on the Rate of Interest and the Price-Level).

I cannot adequately express my gratitude to Professor V. L. D'Souza for the keen and continuous interest he has taken in my studies. This essay was written under his guidance, and he has offered many valuable suggestions and much helpful criticism. He has saved me from many a slip in the dense thicket of modern monetary controversy.

I must express my profound obligation to *Rajakaryâpravina* Mr. N. S. Subba Rao, Vice-Chancellor, University of Mysore, for the great interest he has evinced in me

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Mr. S. L. Rama Rao was good enough to read the last six chapters. Dr. A. N. Narasimhaiah, University Librarian, has been extremely kind to me in the matter of books and journals. My friend Mr. A. N. Subrahmanyam has rendered me much valuable service at various stages of this book.

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S. L.

CONTENTS

CHAPTER I

THE PROBLEM

THE theory of interest has presented a moral and an economic problem from time immemorial. {Lending at interest was condemned by the Mosaic Law as between Israelites; it was declared by Aristotle to be unnatural, was forbidden by the Roman Church until modern times, and is denounced by most Socialists to-day.} Yet it persists age after age, and its justification seems to most businessmen too obvious for discussion. If we turn from moralists and businessmen to professed economists, we find that although most of them justify interest, they are well-nigh hopelessly disagreed as to the theory of its justification. As Professor Von Haberler remarks "The theory of interest has for a long time been a weak spot in the science of economics, and the explanation and determination of the interest rate still gives rise to more disagreement among economists than any other branch of general economic theory."[1] It is a problem which has been in the forefront of discussion in modern monetary theory.

The student of the theory of interest is confronted with a vast literature on the subject. He comes across diverse and conflicting theories of interest, such as the Productivity Theory, Abstinence Theory, Agio Theory, Exploitation Theory. It should be his business to analyse the fundamental postulates of the various theories, to see whether the existing theories differ only in terminology or in fundamentals, and lastly,

[1] Haberler, *Prosperity and Depression*, 1939, p. 195.

to construct a theory that incorporates the truth in the various theories and that is tenable under all circumstances. The present essay is an attempt in that direction.

But before embarking on this ambitious task, it is necessary to base ourselves on firm ground with regard to the nature and method of our enquiry. In other words, we come to the controversial subject of the scope and method of economics. Whether economics is positive or normative is a question to be answered by every economist for himself. There can be no such thing as unanimity about it. So far as our enquiry is concerned, we shall take notice of both these aspects. But while we do so, we shall be most careful in keeping the two aspects of the question quite distinct from each other. We have to distinguish sharply the theoretical problem of interest from the social and political problem of interest. The theoretical or economic problem seeks to answer the question 'Why is there interest on capital?' The social and political problem seeks to answer the question "Whether there should be interest on capital—whether it is just, fair, useful, good, and whether it should be retained, modified or abolished".[2] The theoretical problem discusses the causes, and the social problem the effects of interest. In the former case we are concerned with truth or falsehood, and in the latter with expediency. It is the practical problem of interest which has brought the theoretical problem and its scientific treatment to the forefront. But the reasoning in the two spheres should be separate.

Next we come to the method of our enquiry. We

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[2] Böhm-Bawerk, *Capital and Interest*, p. 2.

have to make use of both induction and deduction, "but in different proportions for different purposes".[3] "Observation and description, definition and classification are the preparatory activities. But what we desire to reach thereby is a knowledge of the interdependence of economic phenomena.... Induction and deduction are both needed for scientific thought as the right and left foot are both needed for walking."[4] There has indeed been a great theoretical development of the problem of interest. Some deprecate the sort of "mere theory", and armed with statistical weapons of correlation are in pursuit of quantitative measurements. But each method and each point of view is in turn needed—now to present working hypotheses, then to test them; to relate newly discovered facts to the existing body of knowledge, and again to reappraise older accepted views in the light of new evidence.

The procedure to be adopted in this enquiry will be as follows. First, we shall state briefly the 'problem' of interest. Then we shall critically examine the existing theories of interest. Lastly, we shall present a theory that incorporates the truths discovered in the various existing theories, and which is not only consistent logically but is also compatible with reality.

There has been recently a growing tendency to use 'interest' to mean money paid for the use of money lent. But many economists have viewed it as a problem in the distribution of national income. They have regarded interest as the earnings of 'capital', 'capital' being considered to be a 'factor of production'. Since the problem of the distribution of the national income among the 'factors of production' is essentially

[3] Marshall, *Principles*, p. 29, sixth edition.
[4] *Ibid.*, p. 29.

a problem of the pricing of the 'factors of production', interest is also defined as the price of the use or service of 'capital'.)

To illustrate: supposing a person has a sum of Rs. 100 to spare. Under normal circumstances, it is possible for him to obtain from the Rs. 100 a permanent net income without his personal exertion. In the first place, he can lend the Rs. 100 to someone, say for a period of one year, and at the end of it get back from the borrower not only the Rs. 100 which he had lent, but a premium of say Rs. 5. The lender has obtained a surplus income of Rs. 5, which may be regarded either as the earnings of the Rs. 100 lent, or as the price charged by the lender for the use of his Rs. 100 by the borrower for a period of one year. This premium of Rs. 5 is said to constitute 'interest'. This is said to be a narrow conception of interest, and this kind of interest on money lent is usually called by economists by the name *Loan Interest* or *Contractual Interest*.

But, very often the owner of the Rs. 100 may not hand over the temporary use of his money to another man against a fixed compensation or price. He may invest his money in some productive activity. Let us suppose that he invests his money in a small flour-mill. In that case, the total product obtained by the help of the flour-mill, under normal circumstances, will have a higher value than the total cost of the goods expended in the course of production, including the cost of repair and depreciation of the machine (so that it is as good as new) and undertaker's profit. This surplus value is called *Natural Interest*.[5] It is also

[5] This 'Natural Interest' is not the same as the concept of the 'Natural Rate of Interest'.

called by various other names such as 'profit on capital' or 'earnings of capital'. The concept of 'natural interest' is a broader one. It stands for the return from investment in any form, whether from money lent to Governments, banks and mortgagors, or from stocks and shares, real estate and factories. We shall examine later the implications of these two concepts of interest, and the precise relationship between the two.

The theory of interest has to explain two phenomena. In the first place, it has to explain the origin or cause of interest. Why should the lender of Rs. 100 receive a premium of Rs. 5 at the end of the year? Or why should the person who invests the same money in a flour-mill or in any other productive activity get a surplus net increment of Rs. 5 or 10 at the end of the year? In the second place, the theory has to explain the forces determining the amount of interest, the amount usually being thought of as a rate per cent. per annum. In other words, the main task of the theory of interest is to explain the necessity of interest and the rate of interest.

So far we have stated briefly the problem of interest. Let us analyse all that it implies, and the various doubts and questions to which it gives rise. In the first place, we have to be sure as to what we mean by 'capital'. Does capital mean a sum of money? Does capital stand for instruments of production? Or, do we mean by capital wealth in general? To solve the enigma of capital is to solve three-fourths of the problem of interest. Unfortunately, the theory of capital is one of the subtlest and most complicated problems in the entire body of economic theory. Different concepts of capital have been responsible for controversial theories of interest. It has given

rise, broadly, to two sets of theories, *viz.*, (*a*) 'real capital' theories running in essentially non-monetary terms. Here capital is taken to mean real capital in the sense of concrete goods, and the rate of interest as the price of capital, "determined by the marginal productivity of capital in a technological sense and by certain psychological factors (time-preference) influencing the relative urgency of present and future needs".[6] (*b*) Monetary theories of the rate of interest. Here capital means money capital in the sense of loanable funds or credits or claims, the rate of interest being determined by the supply of and demand for the funds or claims. The division of opinion between the two schools is serious and marks a 'real dispute'. But, as Prof. Hicks remarks, "the real dispute has been lately complicated by a sham dispute within the ranks of those who adhere to the monetary approach".[7] Of course, serious attempts have been made to reconcile and integrate the 'real dispute' between the 'real capital' and the 'monetary' approaches. It is difficult to say how far this attempt has been successful.

In the analysis of the capital concept we will also consider the nature of the services rendered by 'capital' in production, since capital is regarded as a 'factor of production'. We will also answer the questions 'Why is a price paid at all for the use of capital?' 'How much of it is to be paid?' In other words, we have to study the mechanism of the market for capital and the forces operating on the demand and supply sides of the market.

A second important problem that arises in our study of the theory of interest is the element of time.

[6] Haberler, *op. cit.*, p. 195.
[7] *Value and Capital*, 1939, p. 153.

Lapse of time is a necessary condition for the accruing of interest, whether it is *Loan* interest or *Natural* interest. Rates of exchange between present goods and future goods are an aspect of the theory of interest. The facts about both spot transactions and forward transactions are that both sides of the transactions are executed simultaneously, either on the spot in the case of the spot transaction, or at a later date in the case of the forward transaction. But there is a third kind of transactions, loan transactions, the feature of which is that one side of the transaction is executed on the spot and the other side is left to be executed at a later date. In other words the loan transaction is divided in time. And the element of time is responsible for many a difficulty in economic investigations. We have to analyse the effects of the lapse of time on production, consumption and exchange. We have to consider the time-preferences of individuals, the relative urgency of present and future wants, of the relative values of present and future goods. Time introduces dynamic elements into the economic structure and analysis. Thus population may change; the tastes and habits of the community may vary; capital may accumulate; there may be vast changes in the methods of production and the forms of business organisation. These dynamic elements very often cause maladjustments in the economic machinery. Business calculations are upset and equilibrium between production and consumption disturbed. Thus we have to study the dynamics of the rate of interest, that is, the mutual relationship between the rate of interest and the five types of changes mentioned above.

Thirdly, our problem is intimately connected with money and monetary problems. If we accept the

monetary theories of interest, then money becomes all important in the theory of interest. Even otherwise, money plays an important role in the determination of the rate of interest. We are living in an exchange economy based on money and therefore a system of money prices. Just as direct exchange of one sort of present goods for another sort of present goods is rare, owing to the inconvenience of barter, similarly exchange of present real goods for future real goods is rare. In fact, the whole practice of loan transactions is dominated by the fact that both sides of the transaction are in money form. Since value is expressed and measured in terms of money, and since the term money is loosely used in everyday speech as a synonym for wealth in general, many regard capital as equivalent to money, thought of in its loan aspect. This will be discussed at length in later chapters.

Money also plays a significant part in the problem of interest and prices. Economists for a long time have suspected the existence of a functional relationship between changes in the rate of interest and changes in the general price-level. Because of the enormous powers that modern banks possess as purveyors and creators of money, it is suggested everywhere that the banks could, by pursuing a proper interest-rate policy, control and guide the economic system and enable it to achieve maximum production, employment, and welfare. That is why many economists regard the rate of interest as the regulator of the economic mechanism. The intimacy with which the rate of interest is connected with the economic system cannot be exaggerated. As Prof. Hicks says, "It is evident that any treatment which pretends to deal with the economic system as a whole cannot possibly regard the rate of

interest in isolation. It is a price, like other prices, and must be determined with them as part of a mutually interdependent system."[8]

Hitherto we have been talking of *the* rate of interest as though there was only one rate of interest. But in the actual world we have to deal with a whole system of interest rates. The existence of several rates of interest is due to certain factors like the existence of risk, duration of the loan and the presence of certain other elements like normal profits. In countries where the capital market is not developed on an efficient basis, the lenders very often run the risk of losing the principal lent. So they charge a very much higher percentage of interest on the loans they make than they would if the risk element were absent. Here the actual rate of interest paid contains a risk-premium. In India the *Multanis* charge 50 to 75 per cent. interest for the same reason. Even in countries where the capital market is developed satisfactorily, risks of one kind or another are present in varying degrees and hence differences in interest rates are largely to be accounted for by varying risk-premiums. The period of the loan accounts for different interest rates. Generally, the longer the duration of the loan, the higher will be the rate of interest. Very often interest rates differ because they contain elements of rent and entrepreneur's profit. In reality the rates of interest contain all these elements to some extent. The rate of interest that *inter alia* contains elements like risk-premium and entrepreneur's profits is designated by economists as *gross* interest. *Net* interest is the pure rate of interest on capital, devoid of other elements

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[8] *Value and Capital*, 1939, p. 154.

like risk-premium.) No doubt the concept of net interest is largely one of abstraction and simplification. In studying the net rate of interest, we reduce things to a simplified model, armed with *ceteris paribus*. We have also to deal with several 'conceptual' rates of interest put forth by various economists, either as actual rates or ideal rates.

The last of the series of problems we have to tackle is the question whether interest is peculiar to the present capitalistic system based on private property and freedom of enterprise, or whether the existence of interest is independent of the actual form of our economy.

Looking back, we see that the Theory of Interest has to solve varied and difficult problems. We at once realise the immensity and complexity of our subject. But we shall analyse these step by step without, at the same time, failing to visualise the problem as a whole. Finally, we shall evaluate the true place of interest in the economic world, and we shall critically examine whether the rate of interest is the regulator of economic activity, as many claim, or whether its importance is unduly exaggerated.

CHAPTER II

THE BEGINNINGS

LENDING money at interest has been the subject of acute controversy from the earliest times in history. The controversy was largely theological and political in nature till about the beginning of the eighteenth century. It was rarely treated as an economic problem.

In Greece, lending money at interest (which was called *tokos*) was forbidden by philosophers like Aristotle, whose views on interest exerted a profound influence on the later controversies about the subject. Aristotle held that money could not breed interest as it was barren. The sole object of the use of money was, according to him, to facilitate exchange and the fuller satisfaction of human wants. That was the natural purpose of money. Money itself could not be used as the source of accumulation, *i.e.*, to increase at interest. So accumulating money by lending it at interest was the most unnatural of all the ways of making money.

Even in Rome money-lending was looked upon as unnatural. So, for a long time, both in Greece and Rome the charging of interest was forbidden. Moreover, as Prof. Knight says, "In Greece and Rome, where the ownership of landed estates was the gentlemanly source of income, the opposition to money-lending was ostensibly grounded in ideas of social respectability; the opposition tended to disappear when money-lending was regularly conducted on a scale which permitted the capitalist to live according to the

genteel standards of the old aristocracy."[1] With the development of commerce the law permitted the charging of interest, but controlled at restricted rates. Prohibition was replaced by regulation.

In the Middle Ages, the payment of interest (on a money loan), which was then called *usury* was prohibited by the Canon Law and the Church with the utmost severity. The prohibition of usury was based, as may be expected, on ethical and religious grounds. "The whole scheme of mediæval thought attempted to treat economic affairs as part of a hierarchy of values, embracing all interests and activities, of which the apex was religion."[2] In the Middle Ages, the condemnation of usury was part of the general condemnation of unjust exchange. That is why the use of the term usury was extended to include all exchange transactions in which the stronger party takes advantage of the weaker in order to derive undue profit. Mediæval thought on trade and exchange was guided by the principle of 'just price'. "That price was objective, inherent in the values of articles of commerce, and to depart from it was to infringe the moral code."[3] In general, the idea of 'just price' expressed no other than that of the conventional price. And the idea of a conventional price was not unnatural and unrealistic in a society where trade and industry were restricted and where markets had not developed, and where above all the authority of the Church was supreme.

This was the broad basis of the opposition to usury. There were several specific arguments against

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[1] "Interest", in *Ethics of Competition and other Essays*, pp. 251–2.

[2] R. H. Tawney, *Religion and the Rise of Capitalism*, Pelican edition, p. 145.

[3] E. Roll, *History of Economic Thought*, 1938, p. 48.

usury. In those days most of the loans were made to poor people for purposes of consumption and not for production. The farmer whose harvest fails or whose beasts die, must have credit to buy seeds and cattle. And in those days the money-lenders and the merchants were in a monopoly position and often took undue advantage of the distress of the borrower. It was morally improper to take advantage of the plight of a poor fellow and charge usury for the loan of money made to him. The lender lost nothing by lending his money since there were no opportunities for profitable investment. In the Middle Ages, once again, the Aristotelian argument of the barrenness of money was revived to oppose usury. This argument was combined with the doctrine of Roman Law which distinguished between goods which were consumptibles and those which were fungibles. Money was put in the first category. Since no value could attach to the use of a consumptible good separate from the good itself, and since money could be used only by parting with it, no price should be asked for the use of money, apart from the replacement of money. Another argument was directed against the payment for time. It was argued that time could not breed interest, since it was common to all, *i.e.*, it belonged to both lender and borrower. Armed with these arguments the Church enforced the prohibition of usury with all the might it possessed. The thirteenth century saw the zenith of this prohibition.

But it is interesting to note that the mediæval practice did not object to interest on loans made in the course of business where the use of funds had a money value to the borrower as well as the lender. If income was obtained by personal employment of

money capital in the form of profit, it was not objected to. Again, the payment of rent for the services of land or durable goods was not condemned by the Church or the Canon Law; for rent is produced by nature and not wrung from man. So rent-charges on land were bought and sold. And a lender of money was allowed *intersse* (a Roman Law expression, from which the modern word *interest* comes) or compensation if he was not repaid the principal at the time stipulated. A charge on the principal was allowed if there was a risk of the loan not being repaid. "It is no usury when John Deveneys, who has borrowed £19–16–0 binds himself to pay a penalty of £40 in the event of a failure to restore the principal, for this is compensation for damages incurred."[4] Therefore what was declared unlawful to the end was "that which appears in modern economic text-books as 'pure interest'—interest as a fixed payment stipulated in advance for a loan of money or wares without risk to the lender. The essence of usury was that it was certain, and that, whether the borrower gained or lost, the usurer took his pound of flesh. Mediæval opinion, which has no objection to rent or profits, provided that they are reasonable—for is not everyone in a small way a profit-maker?—has no mercy for the debenture-holder. His crime is that he takes a payment for money which is fixed and certain, and such a payment is usury".[5] Thus 'interest' more and more became the general term given to payments for business loans, whilst 'usury' was restricted to signify the payment for money advances made for consumption.

In spite of the stubborn attitude of the Church, the

[4] Tawney, *op. cit.*, p. 54.
[5] *Ibid.*, p. 54.

practice of taking interest grew with economic development. As trade and industry developed, lending at interest became increasingly common and the prohibition of usury by the Church and the Canonic Law was evaded in various ways, so that by the end of the fourteenth century the doctrines of the Canonists became hopelessly out of keeping with current economic practice. So various modifications appeared in the theory of 'usury', just as many qualifications were made in the principle of 'just price'. As we have already seen, *intersse* was allowed for delay of the repayment of the loan. So lenders prescribed only a formal and short period, before the end of which the borrower usually failed to return the loan. Another way of concealing the lending of money at interest was that of business partnership, which was usually a sleeping one. Another important doctrine which helped the virtual breakdown of the prohibition was that which allowed the lender to claim interest if he could prove that he had lost the chance of gain through lending his money.

It is difficult to say what part the Reformation played in hastening the decline of the prohibition of usury. The effect of the evasion of interest was that some reformers compromised themselves with the weakness of human beings, and agreed to the taking of interest on grounds of expediency. Martin Luther and Zwingli belonged to this school. Bacon too held some such opinion. "Since of necessity men must give and take money on loan, and since they are so hard of heart that they will not lend it otherwise, there is nothing for it, but that interest should be permitted."[6]

[6] Bacon, "Discourse on Usury," quoted by Böhm-Bawerk, in *Capital and Interest*, p. 34.

He concludes that to abolish interest is to abolish lending altogether.

As a result of these, and with the gradual decline of the authority of the Church and the rise of the secular power, lending at interest came to be tolerated. Moreover, there could no longer be maintained the distinction between the different kinds of interest. Everywhere in Europe the prohibition of usury was removed. In England the prohibition was removed in the time of Henry VIII (1545). Other countries followed suit. But in most countries, the prohibition of usury was followed by a regulation of the rate of interest. There was a corresponding change in the meaning of usury, whose meaning was narrowed, referring only to excessive loan charges. A moderate rate was covered by the word 'interest'. In England at the time of Henry VIII, the legal maximum was 10 per cent. Later controversies regarding interest were concerned more with what was to be the fair rate of interest for purposes of legal enactment than with the justification of the payment of interest. Thus men like Sir Thomas Culpepper, Sir Josiah Child and Sir Francis Bacon spoke more against high rates than against the payment of interest itself.

Though the prohibition of usury was removed in most countries by the end of the sixteenth century, for two more centuries the justice of charging interest was the subject of acute theological and political controversy, and very little attention was paid to the economic aspects of the problem. The attack on usury was based on the moral and religious principles enunciated above. The attack on the prohibition of usury, especially in the seventeenth and eighteenth centuries, equipped itself with theoretical apparatus of

principles. But the whole controversy is barren for our purposes. However, we may point out that it ended in a victory for those that attacked the prohibition. Anti-usury laws were wiped out from the statute books of most countries, and to-day the Canonic doctrine can only be the butt of ridicule. But it does not mean that with the repeal of anti-usury laws, the theoretical problem was solved. On the other hand it was shifted backwards; for the defence of interest was based on the idea that money can be used as a source of gain and therefore it commands interest. This theory is very well put in the words of Adam Smith. "As something can everywhere be made by the use of money, something ought everywhere to be paid for the use of it." So loan interest was explained from the existence of natural interest. The problem of loan interest was not solved, but shifted backwards.

Thus during all these centuries of controversy over usury, the theory of interest on scientific lines could not be developed. The Canonist methods of Sophistry and Appeal to Authority proved fatal to a clear understanding as to the nature of interest. When the prohibition of interest was followed by an era of regulation of the rate of interest, some progress was made in the theoretical study of interest, because thinkers devoted their attention to the consequences of alterations in the rate of interest. The control of interest rates was exercised with a desire to protect the economically weak against the monopoly of the money-lenders. Enquiries on consequences of changes of interest rates threw some light on the economic aspects of interest. The necessary conditions of a scientific treatment of the problem of interest were supplied by the economic revolution and the emancipation of thought.

At the same time we must not be under the impression that all that mediæval theory said against the taking of interest was foolish and insane. The opposition to interest in the Middle Ages and the control of the rate of interest in the later years were intended to prevent the exploitation of the weaker members of society and thus promote welfare. And Mr. Keynes believes that there was also an economic motive behind the mediæval prohibition of usury. Thus he confesses, "I was brought up to believe that the attitude of the Mediæval Church to the rate of interest was inherently absurd, and that the subtle discussions aimed at distinguishing the return on money-loans from the return to active investment were merely jesuitical attempts to find a practical escape from a foolish theory. But I now read these discussions as an honest intellectual attempt to keep separate what the classical theory has inextricably confused together, namely, the rate of interest and the marginal efficiency of capital. For it now seems clear that the disquisitions of the school men were directed towards the elucidation of a formula which should allow the schedule of the marginal efficiency of capital to be high, while using rule and custom and the moral law to keep down the rate of interest."[1]

In the twentieth century again we notice a tendency in most of the nations of the world to apply ethical standards to economic policy because of the waning faith in economic liberalism and in the automatic adjustment of economic processes. It has been recognised to be the duty of the state to promote maximum welfare of its citizens by interfering with

[1] *General Theory of Employment, Interest and Money*, pp. 351-2. Henceforth this book will be referred to as *General Theory*.

the free play of economic forces. It may be that this welfare is conceived in essentially economic terms and not based on religion. But the point to note is that interference by the state is recognised to be necessary in the interests of the well-being of the citizens. In olden days in the absence of a powerful state, this object was achieved with the authority of the Church.

CHAPTER III

MERCANTILISTS, INDUSTRIAL CAPITALISTS AND PHYSIOCRATS

By the end of the fifteenth century the Middle Ages came to a close and the Modern Times began. The Renaissance, the Reformation, the growth of nationalism, and the progress of the concept of natural law in jurisprudence and political thought were responsible for the loosening of the central doctrinal authority of the Church, and they paved the way for a rational and scientific approach to social problems. From this happy change economics benefited a great deal. These factors coupled with the rise of commercial and later industrial capitalism sowed the seeds of the beginnings of theoretical economics based on scientific and rational analysis. During the period that elapsed between the end of the Middle Ages and the appearance of Adam Smith's *Wealth of Nations,* there was a large output of theoretical economics. In fact, systems of economic theory such as the Mercantilists and the Physiocrats began to develop. The writers of this period deserve to be treated at length. But for our present purposes, we need consider only those who played an important role in the theoretical development of the problem of interest.

We saw how even towards the end of the Middle Ages the necessity of interest was recognised, and that the prohibition of interest ('usury') was followed by a regulation of the rate of interest. The demand for regulation was largely based on mercantilist grounds, as we shall see later.

Later discussions on interest were concerned

chiefly with the effects on industry and trade of a fall or rise in the rate of interest. The writers who played a prominent part in such discussions were Bacon, Sir Josiah Child, Sir Thomas Culpepper, Sir Dudley North, Thomas Manley, Thomas Mun, Sir William Petty; John Locke and David Hume. Though these writers were primarily concerned with the probable effects of alterations in the rate of interest, at the same time, they gradually developed a new conception of the nature of interest itself. Gradually it was realised that interest could no longer be looked upon as a thing that could be influenced by deliberate policy, but that it was an objective phenomenon, influenced and determined by economic forces. Henceforth the concept 'Natural' began to play a prominent part in economic writings. Note for instance, the following words of Sir William Petty:

"The vanity and fruitlessness of making Civil Positive Laws against the Laws of Nature."[1]

Towards the end of the seventeenth century there was a growing recognition that interest was a market price, determined by demand for and supply of money capital. Thus, for instance, Sir Dudley North tried to show that a rise in the rate of interest was necessary to increase the supply of capital. But the economists of the seventeenth century were mainly concerned with the demand side of the market, *i.e.*, the influence of variations in the rate of interest upon the volume of trade. They opposed high rates because they feared it would offer no inducement to investment, since prospective profits were low compared to the high rates of interest to be paid on loans. Low interest

[1] "A Treatise of Taxes and Contribution", quoted by Cassel in *Nature and Necessity of Interest*, 1903, p. 14.

rates would help English merchants to compete successfully with foreigners, especially the Dutch.

Thus the interest theory began to develop. There was of course a great deal of vagueness about interest. In the first place, no independent cause was put forth for the justification of interest. Interest was derived analytically from rent of land, which was considered to be the only form of surplus. Another important source of this vagueness was the confusion between money and capital. Does money constitute capital or do material goods constitute capital? This is a 'real' dispute even to-day. And we see the beginnings of this dispute towards the end of the seventeenth and the beginning of the eighteenth century.

From the earliest times to the end of the mercantilist period money was identified with capital. In fact money was the earliest form of wealth, when once private exchange and medium of exchange were recognised. That is why the accumulation of the precious metals of which money consisted was common in the ancient world. In Greece and Rome, and throughout the Middle Ages the accumulation of metallic hoard was a deliberate aim of policy. Mercantilism and Commercial Capitalism gave a new impetus to this view. Commerce was the chief source of economic activity. And the belief was that wealth and its increase were due to exchange. So the accumulation of money and treasure was to be the national policy. There was the search for gold. The mercantilists were oppressed by the 'fear of goods' and the scarcity of money. They were always of the view that it is always better to sell goods to others than to buy goods from them. This 'fear of goods' manifested itself most clearly in the field of foreign trade. The

mercantilists emphasised the need for an export surplus, for that would bring into the country treasure. That is why legislation was passed in that direction.

Thus the mercantilists identified money with capital. "For them money was—to use the terminology of to-day—a factor of production on the same footing as land, sometimes regarded as 'artificial' wealth as distinct from the 'natural' wealth; interest on capital was the payment for the renting of money similar to rent of land."[2] They ascribed a definitive force to money. According to them trade depended upon plenty of money; otherwise trade would be sluggish. Because of the great demand for money, they demanded the regulation of interest at low rates. This view was explicitly put forth by Sir Josiah Child and Sir Thomas Culpepper. They argued that a low rate of interest would stimulate trade and so it was the cause of wealth, and not the result of it. They held the view that the rate of interest depended upon the quantity of money available. Interest rates would be low if the quantity of money was abundant; it would be high if the quantity of money was low. Of course, money in those days was mainly metallic money. And according to Mr. Keynes, "they were even aware that the rate of interest depended on liquidity-preference. They were concerned both with diminishing liquidity-preference and with increasing the quantity of money, and several of them made it clear that their preoccupation with increasing the quantity of money was due to their desire to diminish the rate of interest."[3] They demanded a legal fixing of maximum rates because "Mercantilist thought never supposed that there was

[2] Heckscher, *Mercantilism*, vol. II, p. 200.
[3] *General Theory*, p. 341.

a self-adjusting tendency by which the rate of interest would be established at the appropriate level".[4] Whatever the shortcomings of the mercantilists, for one thing they were quite correct in holding that the rate of interest is essentially a monetary problem. It was rather unfortunate that this view of the rate of interest should have been rejected by the succeeding generation of economists. However, in recent years, there is an increasing body of opinion which regards the rate of interest as essentially belonging to the sphere of monetary theory.

But gradually, the 'amount-of-money concept' of interest was given up and it was followed by the 'amount-of-riches concept'. This change of view was the result of the advent of industrial capitalism. During the phase of commercial capitalism, money was identified with capital. But commercial capitalism was superseded by industrial capitalism, and capital was more and more used in the sense of 'stock', *i.e.*, capital goods. The power of creating wealth was now attributed to the sphere of production and not merely of exchange. So the rate of interest depended not upon the quantity of money, but upon the riches of the country. Of course, for a long time both the views of capital and interest had adherents. Among the economists who threw valuable light on this question, we may consider John Locke and David Hume.

Locke did not make any great progress in the theory of interest. He too regarded that rent of land was the only form in which surplus could accrue and he derived interest analytically from rent; interest was paid for the 'use' of money. But the importance of Locke lies in the fact that he was the first to express

[4] *General Theory*, p. 341.

in abstract terms the relationship between the rate of interest and the quantity of money. He held that money had a double-value. (*a*) Its value in use, which is given by the rate of interest. "In this it has the nature of land."[5] This use value or the rate of interest depended upon the quantity of money (velocity of circulation being taken into consideration) in proportion to the total value of trade. (*b*) Its value in exchange, and "in this it has the nature of a commodity",[6] this exchange value depending upon the quantity of money in proportion to the total volume of goods on the market. "Thus Locke was the parent of twin quantity theories."[7] Of course, as Mr. Keynes points out, he confused the relationship of these two proportions and he neglected changes in liquidity-preference. He too identified money and capital. But he held the view that a reduction in the rate of interest had no direct effect on the price-level and that it might affect it indirectly by leading to the export of cash or an increase in output.

David Hume is said to be the first economist to have drawn the distinction between money and capital, and combated the prevailing view that lowness of interest was due to plenty of money, though he admitted that they went together. He went on to show that a low rate of interest was not a cause but an effect. That was why Hume, like Locke, opposed the state regulation of interest. "The greater or less quantity of money in a state has no influence on the rate of interest. But it is evident that the greater or less stock of labour and commodities must have a great influence; since we really and in effect borrow these, when we take money upon

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5 & 6 Locke, "Some Considerations, etc.," quoted in Cassel, *op. cit.*, p. 18.

7 Keynes, *General Theory*, p. 343.

interest."[8] Hume followed Locke in his theory that prices were determined by the quantity of money. That is why he declared that "Money, however plentiful, had no other effect, if fixed, than to raise the price of labour and commodities,"[9] but it could not lower the rate of interest. But low interest rates and plenty of money were inseparable, because the growth of industry and trade attracted great abundance of precious metals and this lowered interest. Though he isolated the problem of interest from that of money, he knew that money played a great part in affecting the volume of industry and trade. If prices rose as the result of an increase in the quantity of money, industry would be stimulated. But at the same time Hume knew that the increase in the quantity of money was beneficial owing to the time-lag in the appearance of its effects. Changes in the prices of different goods are affected in turn and the increase of money will "quicken the diligence of every individual, before it increases the price of labour".[10] That is, Hume made a clear distinction between dynamic and static conditions. He knew that if the rise in price became general to all commodities, the fillip to industry would no more exist. He says "The augmentation (of money) may have some influence, by exciting industry; but after the prices are settled, suitable to the new abundance of gold and silver, it has no manner of influence."[11]

Hume distinguished three factors as determining the rate of interest. They were the demand of borrowers, amount of riches in the country and profits of

[8] Quoted in Cassel, *op. cit.*, p. 19.

[9] Fetter, "Interest Theory and Price Movement", *American Economic Review Supplement*, 1927, p. 63.

[10] Hume, "Political Discourses", quoted by Roll, *op. cit.*, p. 121.

[11] Quoted by Cassel, *op. cit.*, p. 20.

commerce. Thus high interest rates were the result of "a great demand for borrowing",[12] and "little riches to supply that demand".[13] These in turn were the results of a small amount of industry and commerce. The third determinant of the high rate of interest was "great profits arising from commerce".[14] He regarded that profits and interest were interdependent. "The low profits of merchandise induce the merchants to accept more willingly of a low interest."[15] Similarly a low rate of interest was the result of three opposite circumstances, namely, low demand, large riches to supply and low profits from commerce.

Hume only stated the problem of interest, and his explanation of the three factors governing the rate of interest was not complete; especially the relation between interest and profits was superficially treated by him, though his analysis of the demand for borrowing was penetrating, abounding with psychological factors. But his essay on interest was epoch-making, for, since his time, the abundance-of-money concept of interest was definitely displaced by the abundance-of-goods concept, though, of late, there is a definite tendency towards the former view.

Hitherto we have been concerned exclusively with English economists. The physiocrats of France, particularly Turgot, contributed a great deal towards the theory of interest.

Quesnay recommended the fixing of the rate of interest by governmental authority. The rate should correspond to the revenue drawn from a piece of land which is equal in value to the loan of money. According to him, the money-lender could not claim a higher rate

12, 13 & 14 Quoted by Fetter, *op. cit.*, p. 64.

15 Quoted by Roll, *op. cit.*, p. 22.

than this by arguing that he could earn a higher rate by investing his money in commerce and industry, since the revenue from tillage was the only legitimate way of increasing wealth. Profit from commerce was against natural order.

It was Turgot who displayed an acute insight into the nature of interest. He rejected the old idea that interest was the price paid for the use of money. He defined interest as "the price given for the use of a certain quantity of value during a certain time".[16] He was the first to emphasise the influence of time on the valuation of goods, that a difference in time meant a difference of value. He frequently used the word 'waiting' to describe what the advances enable workers of all kinds to do. So capital is value. This use of value for a certain time was treated by him as an independent factor of production. He analysed the demand and supply aspects of capital, especially the demand side. He also pointed out clearly to the competition of the various branches of production for the use of capital. And here he spoke first not of manufacturing and commerce, but the purchase of an estate of land. That is, he stated that capital could not be used in manufacturing and trade, if it did not yield the same rent as the capitalist can get for himself by buying land. The Austrian economist Böhm-Bawerk, unaware of the full significance of Turgot's theory of interest, dismissed it as "Fructification theory of interest". Böhm-Bawerk's criticism was as follows:—

Turgot explained that the cause of interest was the possibility of gaining rent from land; but this was reasoning in a circle. For Turgot explained the value

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[16] Cassel, *op. cit.*, p. 20.

of land as determined by the rate of interest on capital. But why is interest paid on capital? So Turgot explained interest, which was really the cause of the exchange between land and capital, as the result of this exchange. But, many critics have pointed out that Böhm-Bawerk did scant justice to Turgot's theory.

According to Fetter,[17] Turgot tried to explain the valuation of land independently, without referring to the current rate of interest on money loans, that this value of land could be determined by the demand and supply of buyers and sellers of lands. He conceived of an investment rate in land, determined by the proportion of the revenue of lands to the value for which they were exchanged. Of course, he was aware that different ways of employing capital were mutually related in their rates of return by the possibility of shifting investments. But this did not prevent Turgot from conceiving of a distinct factor in helping to find the value of land, independent of the contractual rate of interest determined in the money market. No doubt this view of capitalization was limited to the valuation of land, and could not be applied to the valuation of other 'capitals' such as houses, machinery, etc. That is why Fetter calls this theory as 'Limited Capitalization Theory'.[18]

For all his short-comings Turgot's contribution to interest theory is enormous. His concept of capital as a certain sum of value for a certain time has never been surpassed in clearness, and his conception of an investment rate in land is an original contribution to economic thought.

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[17] Fetter, *op. cit.*, pp. 65–7.

[18] *Op. cit.*, p. 65.

CHAPTER IV

THE CLASSICAL THEORY OF INTEREST

THE next stage in the historical development of the theory of interest comprises the work of the classical school of economists beginning with Adam Smith. By the 'classical economists', Marx meant Adam Smith, Ricardo and James Mill, and their predecessors. But Mr. J. M. Keynes includes in the 'classical school' economists like J. S. Mill, Marshall, Edgeworth and Prof. Pigou, because these have "adopted and perfected the theory of the Ricardian economics".[1] For our purposes; we may adopt Mr. Keynes's view.

Though fundamentally all the economists of the classical school mentioned above hold the same views on interest theory, we notice great refinements done to the body of the theory by individual economists with the progress of economic thought and the rise of rival schools of economic theory. We shall do well to begin with Adam Smith and Ricardo, the founders and the chief exponents of the classical school.

Adam Smith did not contribute anything of special importance to the theory of interest. "He stated the results already won in simple and clear language and gave them the whole weight of his authority."[2] Ricardo's contribution was to refine Smith's theory and remove certain inconsistencies in it. Adam Smith did not develop a scientific theory of functional distribution of wealth. He was primarily concerned with the

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[1] J. M. Keynes, *General Theory*, p. 3 (foot note).

[2] Cassel, *op. cit.*, p. 23.

production of wealth. Though he was the first to popularise the concept of 'distribution' of wealth in English economic writings, "Adam Smith's theory of distribution instead of being made one of the main subjects of the book, is inserted in the middle of the chapter on prices as a mere appendage or corollary of his doctrine of prices." The price of every commodity, Adam Smith stated, resolved itself into wages, rent and profits. Even Ricardo, who placed great emphasis on value and distribution, did not develop a functional theory of distribution, based on an analysis of the factors of production. Both Smith and Ricardo "regarded the problem of distribution not as one of pricing services furnished to production but as one of dividing the total income of the society into the shares of the three economic classes which they recognised", namely the landlords, the labourers, and the capitalist-employers. The share of the landlord was rent, and it was explained as a surplus, which did not enter the price of the final product. Wages were the share of the labourers. Profit was the share of the capitalist-employer.

Smith and Ricardo, evidently, did not distinguish clearly between the services of the capitalist and those of the entrepreneur. They treated the capitalist as a kind of entrepreneur and interest as a kind of profit rather than they treated the entrepreneur as a kind of capitalist. They spoke of 'profits of stock'. For profits to accrue, there must be stock or capital.

It would be a mistake to suppose that Adam Smith and Ricardo did not know the difference between business profits in general, and that part of them which is properly interest on capital. To them, the revenue derived from stock, by the person who manages

or employs it was profits. But they knew that gross profits contained wages of management, or reward for the function of 'inspection and direction', and insurance for risk, both of which had to be eliminated from gross profits to arrive at net or 'clear' profits on stock. That is, by profits they meant the return from investment of capital. They confined the word 'interest' to the price charged by the lender for the use of money. To Smith and Ricardo, interest on money was essentially a 'derivative revenue', derived from and depending for its magnitude on the 'profit' that could be made by the use of money. Interest was the compensation which the borrower paid to the lender for the profit he could make by the use of money. So they confined themselves mostly to the broader problem of profits. Also they did not carry out consistently the difference between gross profits and pure interest on capital. The result was that the problem of pure interest was not isolated, and the forces acting on it were not understood clearly.

Let us first examine the views of Smith and Ricardo on the nature of capital. By the time Adam Smith wrote the *Wealth of Nations* the word 'capital' was not widely used. But the word 'stock' was used. Then, the word 'stock' was being used in different senses. Stock meant an original sum of money invested in any business enterprise. The word also stood for the money value of the net assets of an enterprise. Gradually, 'stock' came to mean the machinery, tools and such other productive instruments. And for a long time the word capital was used to denote an interest-bearing sum of money. It was in this sense, that, Adam Smith used the word 'capital' in his *Lectures*. In the *Wealth of Nations*, Adam Smith used the word

'stock' or capital to mean that part of the wealth of an individual which was used not for his consumption, but which was used in further production to bring him money revenue or profit.) Thus Adam Smith's 'capital' included machinery, raw materials, buildings, food and clothing. Adam Smith's conception of capital is essentially an individualistic one. Food and clothing are not capital from the point of the community, but they are capital from the point of the individual since he can advance them to labourers in production and make a profit. Ricardo too held practically the same views on 'capital'. Hence the general conception of capital of Smith and Ricardo was that it was produced by labour and so was the embodiment of a certain quantity of labour, or it was the embodiment of the subsistence goods on which the labourers lived while performing that labour.)

Ricardo clearly indicated that capitalist production is essentially a roundabout or time-using process. He too held the view that all capital may ultimately be traced to labour. "In estimating the exchangeable value of stockings, for example, we shall find that their value depends on the total quantity of labour necessary to manufacture them and bring them to market. First, there is the labour necessary to cultivate the land on which the raw cotton is grown; secondly, the labour of conveying cotton to the country where the stockings are to be manufactured which includes a portion of the labour in building the ship in which it is conveyed, and which is charged in the freight of the goods; thirdly, the labour of the spinner and the weaver; fourthly, a portion of the labour of the engineer, smith and carpenter who erected the buildings and machinery by the help of which they are made; fifthly, the labour of

the retail dealer, and many others whom it is unnecessary to particularise."[3] Thus Ricardo correctly conceived of capital as two-dimensional, a labour dimension and a time dimension.

Smith and Ricardo explained the necessity for profits on stock by stating that there must be profits from stock, otherwise the capitalist would have no interest in employing his capital. And the profits should bear some proportion to the stock employed, otherwise the capitalist would have no inducement to employ a greater rather than a less amount of stock. If profits fell, the incentive to the accumulation of stock (saving) would decline. Accumulation of stock was the result of parsimony and parsimony would not be practised unless a reward was expected for this sacrifice. Hence we have the theory that interest is the reward for abstinence or saving.

In the writings of Smith and Ricardo are to be found the seeds of exploitation, productivity and abstinence theories of interest. In explaining the origin of profits, Smith had to abandon the labour theory of value. He explained profits as a deduction from the value of the product of labour. The labourers must share their product with the owners of stock. The labourers agree to profits, the deduction from the value produced by them, because they are necessitous; *i.e.*, they have no means of subsistence and no materials of production with them. This deduction, under the name of surplus value, became the central theme of Marxian analysis. Smith was the first to develop clearly the concept of surplus value and to stress the fact that it was bound up with capitalist production.

[3] Ricardo, *Principles of Political Economy and Taxation*, McCulloch's edition, p. 17.

Adam Smith also developed the theory that wages, profits and rent are three original sources of exchange value. According to this, the origin of profits is to be found in the fact that the employment of capital in production results in an increased value of the product over the labour value. Here there is no question of exploitation of labour. In this, we see the seeds of the productivity theory of interest.

Unlike Smith, Ricardo was more consistent. Unlike Smith, Ricardo did not limit the validity of the labour theory of value to pre-capitalist times. He showed that labour created value even in a capitalist society, for, as we saw, he held that tools and machines were only stored-up labour. But if stored-up labour did not belong to the labourers but belonged to the capitalist, then the total product of tools and current labour was divided into two shares, one of which was paid as wages to labourers and the other was the profits of the capitalist. According to this theory, 'profit' is defined as wages of indirect or stored-up labour. But there is a serious objection to this theory. The labour formative of capital has already been paid in the form of wages. Profits must therefore be an extra wage. Then the question is naturally raised as to why such mediate (stored-up) labour should be more highly paid than immediate labour. What Ricardo really meant must be that stored-up labour is more productive than immediate labour, and this difference in productivity constituted interest. Of course, Ricardo did not express all this in clear language.

The rate of profit, according to Adam Smith, depended upon the amount of stock existing in the community. An increase of stock employed in one trade tended to lower profits in that trade, owing to

the prevalence of perfect competition. And when there was an increase of stock in all trades, argued Smith, the same competition produced the same effect in all; that is to say, the rate of profits was lowered everywhere. Similarly a diminution in the quantity of stock raised the rate of profits by lowering wages and raising prices. Smith said nothing about the manner in which competition brought about these results.

Ricardo, while holding similar views went further. Realising that a simple theory of demand and supply was insufficient to explain the actual rate of profits, he attempted to find quantitative factors affecting profits. His theory of the rate of profits can be summed up in two propositions. The first is that the rate of profits depends upon the level of wages. The second is that the level of wages depends upon the yield from the marginal land.

In other words, profits and wages were determined by the return to the worst land in cultivation, *i.e.*, the return to the marginal or no-rent land. But wages were determined by the Iron Law. That is, they were practically fixed. So, profit was the residual element. Hence profits depended upon the productivity of the marginal land. As population grew, more and more unfavourable land would be cultivated. And a greater and greater proportion of the output at the margin would be absorbed by real wages, which could not fall below the subsistence level. Consequently profits, which was a residual element, would decrease. But profits could not reach zero, for before this stage, all accumulation will have been arrested, because with every fall in the rate of profits the motive for accumulation will diminish. Another factor which checked the

tendency of the rate of profits to reach zero was the frequent improvement effected in agricultural production.

There is a lot of misunderstanding regarding Ricardo's proposition that the rate of profits depends upon the height of wages. In the first place, by the 'height of wages' should be understood the wages-bill as a proportion of the joint final product of capital and labour. Profits = Total product − the wages bill. The ratio of this profit to the advances to labour constitutes the rate of profit. Hence it is obvious that the rate of profit and the height of wages are inversely related. That is, the rate of profits falls with a rise in the height of wages and *vice versa*. In the second place, when it is said that the rate of profits depends upon the height of wages, the *depends* may be interpreted either in a *formal* or in a *causal* sense. Ricardo really meant it in the formal sense. That is, a fall in the rate of profits was merely an accompanying circumstance of a rise in the height of wages, without necessarily being the result of the latter.[4]

In spite of the facts that he appears to be exclusively concerned with the return to land, and that he thought that population always obeyed the subsistence law of wages, Ricardo's theory of profits is really a marginal productivity theory of interest. And most of the elements of the theory of capital and interest in the writings of Böhm-Bawerk and Wicksell, concepts such as indirect production, period of production are already to be found in the works of Ricardo. Besides Ricardo held the view, which is sufficiently familiar to economists to-day, that a rise in wages will

[4] See Victor Edelberg, "The Ricardian Theory of Profits", *Economica*, 1933.

encourage capitalists to substitute machinery for labour and *vice versa*.

Smith and Ricardo felt the difficulty of speaking of an average rate of profits, since it was subject to great variations of time, place and type of business. So they suggested that the rate of loan-interest gave a clue to the actual rate of profits. That is, if the rate of loan-interest rose, it meant that profits had risen, and *vice versa*. That was so because interest on money was a derivative revenue, and its magnitude depended upon the rate of profits on stock. Their maxim was that "whenever a great deal can be made by the use of money, a great deal will be given for the use of it."[5] But Smith and Ricardo, following David Hume, rejected the view that the rate of interest depended upon the quantity of money, and they put forth the very arguments of Hume in this connection. The effect of an increase in the quantity of money was only to raise prices.

James Mill was too faithful a follower of Ricardo to say anything new on the nature of interest. He too held the view that capital was hoarded or accumulated labour and that profits were the wages of that labour.

By the time J. S. Mill wrote his *Principles*, Senior had developed the abstinence theory of interest. And Mill made use of this theory in explaining the phenomenon of interest. Mill admitted that "as the wages of the labourer are the remuneration of labour, so the profits of the capitalist are properly, according to Mr. Senior's well-chosen expression, the remuneration of abstinence."[6] Mill very ably analysed the various elements in gross profits, such as an 'indemnity

[5] Adam Smith, *Wealth of Nations*, vol. I, p. 338.

[6] J. S. Mill, *Principles of Political Economy*, Longman's edition, p. 245.

for risk,' and 'remuneration for the labour and skill required for superintendence'.[7] Both these elements had to be deducted from gross profits to obtain interest, or "the real remuneration for abstinence".[8] On the rate of profits, and on the relation between the rate of interest and the quantity of money Mill's views were identical with those of Smith and Ricardo.

In his time the theory of interest was diverted to the unfruitful controversy of the Wages Fund Theory. It was thought that the sum which can at any time be paid as wages was equal to the quantity of capital, which was identified with a store of consumable goods. Capital was to serve a "Subsistence Fund" to maintain labourers. The supply of capital was supposed to depend on the rate of interest; that every fall in the rate of interest would check accumulation. This view was borrowed from Smith and Ricardo, but never proved. The doctrine of the Wages Fund was rather a hindrance to the development of the theory of interest.

The next important economist of the classical school to whom we should turn our attention now is Alfred Marshall. In his theory of interest, Marshall was an eclectic, as in many other respects. Marshall developed a functional theory of distribution based on the four factors of production. Marshall's theory of value and distribution combined marginal utility (productivity) analysis with subjective real cost. The forces behind both supply and demand determine value. So the forces governing the rate of interest on capital were 'prospectiveness' on the supply side, and 'productiveness' on the demand side. Marshall abandoned

[7] Mill, *op. cit.*, p. 246.
[8] *Ibid.*, p. 248.

Senior's term 'abstinence', because it was too suggestive of an apologetic intention, and used the word 'waiting'. The supplier of capital has to postpone consumption. He has to save and then wait. So, on the supply side interest is the reward for the sacrifice of saving or waiting. The demand for capital depends upon its marginal productivity. And the rate of interest, in the words of Marshall "tends to an equilibrium level such that the demand for capital in that market at that rate of interest is equal to the aggregate stock forthcoming there at that rate."[9]

Hitherto we have considered the theories of the individual economists of the classical school. We have observed that their views on interest, though differing in detail, are fundamentally the same. So we shall now test the interest-theory of the classical school as a whole, especially in the light of the criticisms levelled against it by Mr. J. M. Keynes. Of course, one may raise the objection that the lumping of all the classical economists under one head means that the shortcomings of anyone economist are attributed to all. But this danger is not much so far as the theory of interest is concerned.

Let us first put down the main features of the classical theory of the rate of interest. In the classical theory there are two unknowns and two equations. The two unknowns are the volume of saving (= the volume of investment) and the rate of interest. First there is the demand equation. The demand for capital depends upon its marginal productivity. The marginal productivity of capital depends upon the amount of investment on capital outlay per unit of time, and so much

[9] *Principles*, Sixth edition, p. 534.

capital will be invested that its marginal productivity is equal to the rate of interest. Mr. Keynes too agrees with this view that the amount of investment depends upon the rate of interest, and it will be carried up to the point at which the marginal productivity (or what Mr. Keynes calls the 'marginal efficiency') of capital is equal to the rate of interest. Then there is the supply equation. On the supply side, interest is the reward for saving or abstaining from consumption. The supply of capital or the amount which individuals choose to save (which is equal to the amount of investment) depends upon the rate of interest. It is this equation which Mr. Keynes disputes. These two equations or curves of the classical theory are analogous to the demand and supply curves relating to a particular commodity. And the rate of interest is determined at the point of intersection of the demand and supply curves for saving. If the supply of saving is greater than the demand for saving for investment the rate of interest falls, and investment increases till equilibrium is reached between saving and investment. Similarly if the demand for saving is greater than the supply of saving, then the rate of interest rises, and investment diminishes until equilibrium between the two is restored once again.

The first attack of Mr. Keynes on the classical theory is that interest is not a reward for saving, for one can save without lending at interest, and one can get interest for lending money which he has not saved but which he has inherited. According to Mr. Keynes interest is the price for lending money or parting with liquidity. But it must be noted that saving is the necessary condition of earning interest, because without saving there will be nothing to lend and no liquidity to

part with. Interest is the reward for saving without liquidity. This proposition, however, is true only in the case of individuals and not banks who can create credit and lend money which is not the result of saving at all.

There is no difference of opinion between the classical economists and Mr. Keynes on the equality of saving and investment. Both hold the view that over a period of time saving and investment are necessarily equal. Since this equality between saving and investment appears suspicious to many, let us give a convincing proof of it.

"By investment is meant an addition to real capital, such as occurs when a new house or a new factory is built, a railway line constructed or a store of raw materials accumulated";[10] saving is the excess of income over expenditure on current consumption. In a society income is earned in two ways, either in producing consumption goods or in producing investment goods. That is, total income y is equal to value of consumption goods c *plus* value of investment goods i. Saving is equal to total income *minus* that part of the income spent on consumption goods. Since the value of consumption goods and the amount of income spent on consumption goods are necessarily equal, it follows that saving is always equal to investment. This may be expressed in three equations:

Income = consumption + investment.

i.e., Investment = income − consumption . . (1)

Saving = Income − consumption . . (2)

From (1) and (2) it follows that

Saving = Investment . . (3).

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[10] Joan Robinson, *Introduction to the Theory of Employment*, p. 7.

It must be clearly noted that the proposition that saving is equal to investment applies only to aggregate saving and investment, *i.e.*, for the community as a whole. In the case of an individual saving and investment need not be equal. The equality between saving and investment appears rather suspicious because of the fact that we are accustomed to look at saving from the point of view of the individual, and not from the point of view of society as a whole. When an individual saves more than before, it does not necessarily increase aggregate saving, because when one saves more (which is the same thing as his spending less on consumption) the income of those who sell consumption goods falls, by exactly the same amount as the increased saving. That is, total income has diminished by an amount equal to the increased saving. Hence aggregate saving remains the same as before. The fact is that when one saves more others save as much less as he has saved more.

It may be argued that hoarding may upset the equality of saving and investment. In the case of an individual, hoarding is the excess (of money holding) of his saving over investment. But for society as a whole there cannot be net hoarding, because when a man hoards, some other man dishoards exactly the same amount of money, so that the community's total stock of money has remained constant. Net hoarding in the sense of an increase in the total stock of money can only take place when the monetary authority issues more money. But this increase in the total stock of money does in no way upset the equality between saving and investment. For the new money must be spent either on consumption or on investment, and as usual we get the equality between saving and investment.

If then there is no difference of opinion between Mr. Keynes and the classical economists on the necessary equality between saving and investment, then where is the real difference between them? The real difference between them lies in this. According to the classical economists it is the rate of interest which brings about the equality between saving and investment. If saving is in excess of investment, the rate of interest falls and investment is stimulated, so that equality between them is restored. On the other hand, Mr. Keynes holds the view that it is the level of incomes rather than the rate of interest that ensures this equality.

According to Mr. Keynes, there is no independent curve for the supply of savings. He admits that there is an independent demand curve for savings. But not so in the case of supply. Saving depends upon the level of employment and incomes. The level of incomes depends upon the rate of investment and the propensity to consume. The rate of investment (*i.e.*, the demand schedule for saving) depends upon the rate of interest. Hence the supply schedule of savings is the same as the curve of the rate of investment or the demand schedule for savings. That means the rate of interest is not determined at all.

Let us see how equality is ensured between saving and investment in Mr. Keynes's system. Let us suppose that investment increases. Then the incomes of people increase. As income increases, part of the increase is spent on consumption and the rest saved. Given the rate of investment, the level of incomes is determined by the propensity to consume (which simultaneously determines the propensity to save). The higher the propensity to consume the higher the

level of incomes. And in the end aggregate saving is equal to aggregate investment. Thus an increase in aggregate investment increases aggregate saving by exactly the same amount.

But an increase in the propensity to save does not necessarily promote investment. An increase in the propensity to save diminishes the income of the consumption-good traders, who in turn curtail consumption, and this leads to a further fall in incomes. With the fall in incomes the amount which individuals want to save is cut down, and income for the community as a whole is reduced to the level at which the actual rate of saving is no greater than the rate of investment. Thus we come to the inevitable conclusion that the supply schedule of saving is not an independent one, but that it is entirely dependent upon the schedule of investment. "The initiative lies with the entrepreneurs, not with the savers. The savers, as a group, are helpless in the hands of the entrepreneurs, though anyone individually is free to save as much as he likes."[11]

Then why is it that the classical economists retain an independent curve for the supply of saving? The reason for this is that they assumed a constant level of income for the community as a whole. In that case, it is true that the rate of interest must lie at that point where the demand curve for capital corresponding to different rates of interest cuts the curve of the amounts saved at corresponding rates of interest. It is on the same assumption of a constant level of income that they held that saving was a function of the rate of interest, that aggregate saving would increase with a rise in the

[11] Joan Robinson, *op. cit.*, p. 13.

rate of interest, and would fall with a fall in the rate of interest. Thus the classical economists did not take into consideration changes in the level of income, or more correctly, they considered incomes to be constant corresponding to 'full' employment.

It is illegitimate to assume that the level of income in a community is constant. The assumption of 'full' employment is unreal. The level of income is not constant and it varies with the rate of investment decided upon by entrepreneurs. Therefore we must treat the level of income also as one of the unknowns in the determination of the rate of interest.

Secondly, as Prof. Gustav Cassel has clearly pointed out, the amounts saved by individuals out of a given income is largely insensitive to changes in the rate of interest. With a rise in the rate of interest, some may save more, or the same, or less than they did before. The motives behind an act of saving are complex. The proportion of its income which a community saves depends upon the size of its income, the distribution of its income, desire for security and power and psychological states of preference as between the present and future. Hence net saving is likely to be very little affected by changes in rate of interest.

How, then, can it be maintained that an act of individual saving leads to an increase in aggregate saving also? The answer of the classical economists is this. They held that every act of saving on the part of the individuals led to a corresponding and simultaneous act of investment. There is an important objection against this view. There is no automatic mechanism by which any increase in saving leads to a corresponding increase in the amount of investment. The classical

argument is that every increase in saving relative to investment would bring down the rate of interest and thus stimulate investment. The classical theory attributed rubber-like elasticity to the economic system. The rate of interest no doubt may fall. But how can the rate of interest be brought down in the absence of the intervention of some factor like the monetary authority? Moreover the increased saving need not stimulate investment, if the prospective yield of investment is not improved. Very often a diminution in the propensity to consume depresses expectations regarding the prospective yield, and thus has an adverse effect on investment. Then there is another most important consideration to which the classical theory has paid practically no attention at all, namely, that when once the decision to save is taken, there is the further decision to be taken as to the form in which the saving is to be held. The entire saving of the individual or a part of it may be invested, loaned, or it may be hoarded, *i.e.*, the saving may be held in the form of idle cash. The last possibility is very important in the modern world, and it is one of the main obstacles in the way of an increase in investment. But the classical economists assumed that in a civilized community with an organised investment market, savers would not hold their savings in the form of idle cash for any length of time, but that they would lend or invest it irrespective of the market rate of interest. This is a very unreal assumption.

Many classical economists confused the rate of interest with the marginal productivity of capital. The rate of interest is not determined by the marginal productivity of capital. It is true that in equilibrium the rate of interest and the marginal productivity of

capital are equal, for if the rate of interest is less than the marginal productivity of capital, it pays the entrepreneur to increase the scale of investment until the two are equal. But it is the rate of interest that determines the marginal productivity of capital. For, marginal productivity of capital depends upon the scale of investment; and the scale of investment depends upon the rate of interest. It would therefore be arguing in a circle to suggest that the rate of interest is determined by the marginal productivity of capital.

It must not be inferred from the above criticisms of the classical theory that the propensity to save, and the demand for savings for investment have no influence on the rate of interest. They do affect the rate of interest but their influence is indirect. Thus an increase in the rate of saving, *cet. par.*, lowers the rate of interest. Again, an anticipated rise in the profitability of capital increases the current demand for investible funds and thus increases the current rate of interest. Mr. Keynes does not deny these results. This must be so, for saving, investment, incomes and the rate of interest are interdependent variables in the situation, and they mutually determine one another. But this kind of mutual determinateness can be said of everything in the world. There are certain factors which are, in our opinion, the most important ones and which are the key to all the variables. Hence we treat these as the determining factors. Otherwise it would be impossible to make causal statements at all. That is why Mr. Keynes holds the view that the demand and supply schedules of saving are determinates, and not determinants of the rate of interest. They do not affect the rate of interest directly. According to him the two factors determining the rate of interest are the

state of liquidity-preference of the savers and the quantity of money in the community. Later, we will deal with this positive thesis of Mr. Keynes.

This leads us to another significant shortcoming of the classical theory of interest. The classical economists failed to recognise that the quantity of money had a direct effect on the rate of interest. Rather, they explicitly stated that the rate of interest had nothing to do with the quantity of money existing. They thought that the rate of interest belonged more to the realm of 'real' or 'pure' economics than to the realm of monetary economics. Though they used 'interest' synonymously as 'the price of capital' and 'price of money', they considered the former (natural interest) as the primary one, and the latter (loan interest) was only a derivative from the former. This is not at all true. In the actual world the quantity of money directly influences the rate of interest. And it is the loan interest that is really the significant one.

The classical economists were too much preoccupied with the 'real' economics of an economy which is essentially monetary. They distinguished between influences from the side of goods and influences from the side of money. But money had no significant influence on the economic mechanism because money was only a 'veil' which concealed the deeper and more fundamental relationships of the economy. "The whole classical theory was a theory of relative prices of a barter economy in a state of equilibrium. For the classical economists analysing the nature and mechanism of value, this value must have appeared to be independent from the accidental price in money. Money was only the 'veil' to be removed. The central and fundamental price theory was therefore isolated from the

money theory."[12] The quantity of money had no influence on relative prices and the quantities of goods produced. This is a direct consequence of the classical assumption of 'full' employment. An increase in the quantity of money therefore increased only prices. This meant a strict interpretation of the Quantity Theory of Money, that $MV = PT$. V and T were supposed to be fixed, and hence P varied directly with M. To explain the transformation of relative prices into absolute prices, the Quantity Theory of Money was introduced as an additional chapter, not really made an integral part of the system. It was thought by the classical economists that the results of equilibrium theory in a barter economy were the same as in a monetary economy. "The economic analysis referred, therefore, to a barter economy, and the differences due to the monetary factor were added afterwards as a secondary correction."[13] Thus while dealing with the theory of value they held one theory of interest, which ran in terms of abstinence and marginal productivity of capital. But they held quite another theory when dealing with the theory of money. For, though they denied that the quantity of money had anything to do with the determination of the rate of interest, it was supposed by them that an increase in the quantity of money had a tendency to bring down the rate of interest, in the short period. Yet no explanation was offered for it.

The source of this mistake of the classical economists was that they took into consideration only the first two functions of money, namely 'unit of account' and 'medium of exchange'. They neglected

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12 P. N. Rosenstein-Rodan, "The Co-ordination of the General Theories of Money and Price", *Economica*, August 1936, p. 257.

13 *Ibid.*, p. 258.

the third and the most important function of money, namely, the 'store of value'. This neglect on their part was not accidental. It was deliberate. The classical economists were concerned with long-period or static equilibrium, and they ruled out all uncertainty regarding the future. "At any moment the facts and expectations were assumed to be given in a definite and calculable form; and risks, of which, though admitted, not much notice was taken, were supposed to be capable of an exact actuarial compunction. The calculus of probability, though the mention of it was kept in the background, was supposed to be capable of reducing uncertainty to the same calculable status as that of certainty itself."[14] That is why the classical economists neglected the holding of inactive balances, *i.e.*, the hoarding of money. They were obviously wrong in this. The importance of money lies partly in its function as a store of value. In the absence of uncertainty regarding the future, there is no need for money as a medium of exchange. The distinction between money and assets vanishes.

In addition to the assumption of the absence of uncertainty, the classical economists upheld Say's Law that supply creates its own demand, and that general over-production is impossible. Hence the classical theory offered no adequate explanation of the trade cycle. It only explained the forces conducive to the equilibrium of the economic system. Of the later classical economists Marshall modified the Ricardian analysis of long-term equilibrium by "grafting on to this the marginal principle and the principle of substitution, together with some discussion of the passage

[14] J. M. Keynes, "The General Theory of Employment", *Quarterly Journal of Economics*, February 1937, p. 212.

from one period of equilibrium to another."[15] But in essentials Marshall's analysis remained the same as that of Ricardo. His analysis too was based on the assumption that the amounts of factors of production in use were given, and the problem to be solved was the way in which they would be used and their relative rewards.

It may seem that this whole chapter is a long tirade on the classical economists. It is not so. It is impossible to belittle the contribution of the classical economists to the theory of capital and interest. As we have noted, the Ricardian theory of capital and interest is very similar to the Böhm-Bawerkian theory of capital and interest. The classical system is logically most consistent. Our object in these pages is to point out the shortcomings and omissions of its theory. The classical theory was deficient on points of formulation. It attached much importance to the influence from the side of goods and rather little importance from the side of money.

For one thing, the classical economists, particularly Smith and Ricardo, were justified in most of their assumptions. They were living in a world which was fairly static and in which violent changes were rare. And it must be said to the credit of Marshall that he anticipated many modern developments in the theory of money and interest. He knew that all was not well with the traditional theory. He incorporated the traditional views in his theory under certain special assumptions regarding their validity. Marshall was explicitly aware of the monetary nature of the rate of interest. Thus he writes "Interest, in the strict sense

[15] J. M. Keynes, *op. cit.*, p. 213.

of the term, is the payment, which anyone receives during a given period, in return for a loan: whether to a private person, or to a Government, *e.g.*, when buying Consols; or to business undertakings, *e.g.*, when buying the debentures of a railway."[16] Marshall knew well that to determine the rate of interest from the marginal productivity of capital is to be involved in circular argument.[17] Marshall clearly knew that uncertainty regarding the future, especially changes in the value of money, could create disturbances in the economic system. Like Mr. Keynes, Marshall attached great importance to the influence of expectations on the current rate of interest. But the weakness of Marshall was that he did not incorporate these fine ideas into his system as an integral part of it. "He was a centre of unity, of acquiescence, of quiescence."[18] He ignored the effects of dynamic changes by assuming the existence of monetary stability, "that money has the same purchasing power when it is borrowed and when it is returned".[19] The most important of the differences between the setting in which the present-day economists work and that in which the classical economists worked has been beautifully expressed by Prof. Pigou in these words: "Economists then had grown up in, and their whole experience was confined to, a world which, as regards politics and economics alike, was reasonably stable. There were, of course, local political disturbances. There were the ups and downs of the so-called trade cycle, fairly moderate in amplitude. There were

[16] *Money, Credit and Commerce*, p. 73.

[17] *Principles*, Sixth edition, pp. 519–20.

[18] Pigou, "March of Time", being the Presidential Address to the Royal Economic Society, 1939, printed in *Economic Journal*, June 1939, p. 220.

[19] Marshall, *Principles*, pp. 593–4.

also large basic changes going on due to the impact of American and, later, Antipodean agriculture upon the structure of our economy. But the basic changes were gradual and slow-working. There were no catastrophes. How different is the experience of economists to-day! The War, with its aftermath of ruin; the period of unbalanced Budgets and astronomical inflations; the slow readjustment; the terrible relapse of the great depression and the political tensions that accompanied it! This fundamental difference of experience is, I think, largely accountable for the difference in the way in which the old generation of economists and the new approach their problems. Inevitably now the short run presents itself with far greater urgency relatively to the long run than it did then. The economists from, say, 1890 to 1910 did not, of course, ignore problems of transition or the great evils of fluctuating employment. But, relatively to the underlying forces by which production and distribution are governed, these things took second place. For the same reason, I think, the influences that monetary reactions exert upon what one may loosely call the real situation were subordinated. It was natural for Marshall, as things then were, to attack the problem of foreign trade by way of 'bales of goods', and to bring in its monetary aspects at a later stage. For, to put the point over-sharply, the part played by money is dominant in the short run, but secondary for long-run problems. In a period when our minds are attuned to sudden and violent changes, a different view-point is natural. In calm weather it is proper to reckon the course of a ship without much regard for the waves. But in a storm the waves may be everything. The problems of transition are the urgent problems. For,

if they are not solved, what happens is not transition, but catostrophe; the long run never comes.) I will not labour further what is obvious. The moral is clear. If the difference in emphasis and outlook between post-war and pre-war economists is a natural, indeed an inevitable, consequence of their different environments, neither outlook can properly be called more right than the other. The two are not competitive: they are complementary."[20]

[20] Pigou, *op. cit.*, pp. 217-8.

CHAPTER V

THE ABSTINENCE THEORY OF INTEREST

ADAM SMITH and Ricardo did not offer a satisfactory solution of the phenomenon of interest, which, as we have already noticed, they called profit. They pronounced labour to be the only source of value. Logically, then, there was no place for profit. But they were aware of its existence. So they called 'profit' a 'surplus' and explained it on the basis of the labour theory of value. The successors of Ricardo like James Mill, McCulloch and Torrens were faced with the dilemma of explaining profit while preserving the labour theory of value. They did not know how to make profits a part of the value of commodities. Therefore either they evaded the explanation of the so-called 'surplus' or provided an inadequate solution of it. Gradually it was realised that the labour theory of value or the simple demand and supply analysis could not offer a satisfactory explanation of the existence of profit, and so serious attempts were made to explain it. These attempts fall into two broad branches: on the one hand there were economists who attempted to explain profit in terms of some species of 'real cost', analogous to labour, for which profit was an equivalent and not a surplus value; on the other hand, there were others who sought to explain profit in terms of the advantages to the borrower or the owner of capital, such as the productivity of capital or the use of capital. The former was an analysis of the problem from the side of supply, while the latter was an analysis from the side of demand. But it is

necessary to bear in mind that an economist who emphasised one aspect of the problem was not entirely ignorant of the other aspect. It only means that, to him, that aspect which he emphasised, was relatively more important than the other.

Let us begin with the supply side. Here the most important economist we have to consider is Nassau William Senior with whom is associated the 'abstinence' theory of interest. Senior began by rejecting Ricardo's idea that labour embodied in a commodity was the source and measure of its value. He put the causes of value as utility and relative scarcity. Senior attempted a solution of the Ricardian and post-Ricardian dilemma of explaining 'profit' while preserving the labour theory of value. According to him, homogeneity between labour cost and capital cost could be worked out through his discovery of abstinence pain as the condition to which the existence of capital is subjected. Thereby labour and abstinence were conceived to be reducible to a common denomination of pain. This also admitted the productivity of capital.

On this basis, Senior analysed the 'instruments of production' into three groups, namely, 'Labour', 'Natural Agents' and 'Abstinence'.[1] The first two were 'Primary Productive Powers', but they required the concurrence of a third 'productive principle', namely, abstinence, "to give to them complete efficiency". By 'abstinence' Senior meant "the conduct of a person who either abstains from the unproductive use of what he can command, or designedly prefers the production of remote to that of immediate results."[2] Senior substituted the term 'abstinence' for capital, because capital, as

[1] Senior, *Outlines of the Science of Political Economy*, p. 58.
[2] *Op. cit.*, p. 58.

it had been defined then, itself was the result of labour, natural agents and abstinence. By the word 'abstinence', Senior wished to express that agent, distinct from labour and the agency of nature, the concurrence of which is necessary to the existence of capital, and which stands in the same relation to profit as Labour does to Wages".[3]

From this we see that Senior definitely stressed the productivity of capital, in addition to his main thesis, that interest is the reward for the abstinence of the capitalist. We are now primarily concerned with his main thesis. Senior explained why abstinence was scarce, in these words. "To abstain from the enjoyment which is in our power, or to seek distant rather than immediate results, are among the most painful exertions of the human will ..... of all the means by which man can be raised in the scale of being, abstinence, as it is perhaps the most effective, is the slowest in its increase, and the least generally diffused."[4]

This is essentially a pain-cost theory of price. According to this, profit is no longer a surplus, but an element of cost. But the mistake which Senior committed and which later economists avoided, was that he did not mention that profit is determined by the price which must be offered for the marginal abstinence. That is, though a certain quantity of abstinence may be obtained for no price or for very little price, a higher price must be paid to all abstinence in order to obtain sufficient quantity of abstinence to meet the demand. This he failed to do, and so it became an easy task for Lassalle to ridicule the conception of abstinence thus: "The profit of capital is the 'wage of abstinence'.

[3] Senior, *op. cit.*, p. 59.
[4] *Ibid.*, p. 60.

Happy, even priceless expression! The ascetic millionaires of Europe! Like Indian penitents or pillar saints they stand: on one leg, each on his column, with straining arm and pendulous body and pallid looks, holding a plate towards the people to collect the wages of their abstinence. In their midst, towering up above all his fellows, as head penitent and ascetic, the Baron Rothschild! This is the condition of society! How could I ever so much misunderstand it!"[5]

Though Senior too developed a real-cost theory of profit, yet he departed from Ricardian theory in one significant respect, namely, that Senior's real-cost was made subjective. Senior realised how the attempt to find an objective basis of real-cost in terms of the things abstained from could have no significance as a cost, unless some pain was involved to the owner in parting with these things. So the concept of 'surplus' was dropped and 'abstinence' was to be the subjective equivalent of profit.

But here sprang up a new difficulty. There was no limit to such a subjective cost, like abstinence, short of including in it the sale or hire of every sort of property. If abstinence was to be allowed to all those who possessed inherited capital, why should it not be allowed to the landlord who let his property for rent or hire, *i.e.*, all rent becomes profit. Senior, who was aware of this difficulty, hastened to exclude all capital, which was inherited or a gift, from his definition. But this only meant that abstinence could not explain all profits. As Cannan has remarked, Senior's theory ended by "reckoning as rent the greater part of what every political economist has termed profit".[6]

[5] Quoted by Böhm-Bawerk in *Capital and Interest*, p. 276.

[6] *Theories of Production and Distribution*, p. 198.

Another defect of the abstinence theory as propounded by Senior and his followers was that they did not use the theory to develop a quantitative explanation of the rate of interest. According to Senior, abstinence sets a minimum level of 'profit', but this is indeterminate. In that case this theory reduces itself to the statement that some interest is a necessary inducement to saving, a fact which had already been recognised by Smith and Ricardo.

For all his shortcomings, this much must be said to his credit that Senior was the first economist to bring to prominence the importance of time in the employment of capital. In his writings many find seeds of the time-preference theory of interest, which was later developed by the Austrian school of economists. In his analysis of the part played by capital goods in production we see the beginning of the Austrian theory of roundabout production, and his discussion of 'the average period of advance of capital' reveal the concept of a 'period of production'. But these were notions which Senior failed to develop systematically.

Better than the word 'abstinence' is one suggested by Macavane, namely the word 'waiting'. It was adopted by Marshall and others since then. The reason for Marshall's abandonment of the word 'abstinence' was that the word implied 'abstemiousness', or a diminution in aggregate consumption. He used the word 'waiting' as equivalent to 'postponement of enjoyment' or as applying to the simple fact "that a person abstained from consuming anything which he had the power of consuming, with the purpose of increasing his resources in the future."[7] Though Marshall

[7] *Principles*, Sixth edition, p. 233.

discarded the word 'abstinence', in essentials, his word 'waiting' retained the character of subjective real cost which Senior had propounded.

With the advent of the concept 'waiting', interest has been defined as the price of 'waiting', 'waiting' being considered as an "independent and elementary factor of production". Investment is said to constitute the demand for 'waiting' and saving is said to constitute the supply of 'waiting'. And interest is the price which equates at the margin the demand for 'waiting' and supply of 'waiting'. The demand for 'waiting' is analysed in terms of the marginal productivity of capital and the supply of 'waiting' in terms of the marginal disutility and sacrifice of 'waiting'. This is practically the same doctrine of interest as that which we came across in the last chapter, namely, that interest is the price which equilibrates the demand for saving and the supply of saving. In so far as the supply of waiting is identified with saving, most of the criticisms which we levelled against that theory of 'saving' apply *in toto* to the theory of 'waiting'.

There is another variant of this theory of 'waiting'. Economists like Prof. Cassel and Mr. Henderson regard it useless to find the cause of interest in the marginal disutility or sacrifice involved in the supply of waiting. According to them a price is charged for waiting (the price being interest) just to restrict the demand for waiting to the level of the available supply. Their argument is that in the absence of a price for waiting, the demand for waiting would be so enormous as to exceed the limit set by the availability of the supply. According to them, the rate of interest does the function of directing investment only to those channels which are most fruitful. In the words of

Mr. Henderson, "It (the rate of interest) separates the sheep from the goats. It serves as a screen, by means of which capital projects are sifted, and through which only those are allowed to pass which will benefit the future in a high degree. For this essential purpose, it is hard to imagine how a better instrument could be devised."[8]

This theory is correct so far as it goes. The function of price is certainly to restrict the demand for a good in relation to its supply. But this kind of demand-and-supply analysis of the interest problem is not very illuminating. It has been rejected, and rightly too, by Ricardo, Marx and Böhm-Bawerk. It does not analyse thoroughly the forces behind the limitation of the supply of 'waiting'.

In view of its tremendous importance in problems of capital and interest, let us analyse at length, the nature and services of 'waiting'[9] in production.

In the first place, 'waiting' is considered as "an independent and elementary factor of production".[10] The argument runs thus: all productive processes take time to accomplish. There is an interval of time between production and consumption. For instance, a farmer must plough the soil and sow seed months before he can reap the harvest. That means it is not sufficient that the farmer and his labourers should work, but it is also essential that they should wait for some-time to get the reward for their efforts. 'Waiting' is also involved in manufacturing industry. With the advent of the Industrial Revolution and the introduction

[8] *Supply and Demand*, p. 130.

[9] It may be noted that 'waiting' is a quantity of two dimensions, *viz.*, quantity of value and time. Therefore Measure of waiting = Quantity × Time.

[10] Cassel, *Nature and Necessity of Interest*, p. 67.

of machinery for purposes of production, productive processes are becoming more and more roundabout. Instead of directly producing final consumption goods, we first manufacture tools and machines, most of them very complicated, and then with the aid of these we manufacture final consumption goods.

The reason why we adopt this kind of indirect production is that we hope to make production more efficient. "We expect a given amount of labour and natural resources to yield more utility if some of it is devoted to the construction of instruments and other forms of capital equipment than if the labour is applied directly to the land without their aid."[11] This increased efficiency of production is only an empirical fact and cannot be proved theoretically. But of this later. What we are primarily concerned with at present is the fact that this kind of indirect or roundabout production involves waiting to those who apply the original productive agents to production before they can reap the rewards. 'Waiting' is also involved in the consumption of durable consumption goods such as houses, whose use is spread over a number of years. Therefore, we may conclude that all production and consumption of durable things demands 'waiting'.

But in the interval of time during which the farmer, or the manufacturer has to 'wait', he must consume. He must pay wages to the labourers employed by him so that they too may consume. For these purposes he needs purchasing power, which represents command over goods in general. If he has not sufficient purchasing power, he must borrow from those who have. That is, in an exchange economy 'waiting' can be

[11] L. M. Fraser, *Economic Thought and Language*, p. 235.

transferred from one person to another. When an entrepreneur takes a loan to construct a factory and start manufacturing, what he does in reality is to get the lender of the loan to do the waiting for him. By the loan, the entrepreneur acquires a temporary control over wealth.

So 'waiting' represents one of the essential conditions of efficient production. Therefore, it is regarded by economists as an independent factor of production distinct from both land and labour, and it is often given the name of 'capital', and the payment for it is interest. This concept of 'capital' which is associated with the function of 'waiting' is distinct from the concept of 'capital' which refers to capital goods, *i.e.*, tools and machines which are produced means of production. But the latter concept of capital is not very illuminating. Capital goods are all multiform and heterogeneous. And they are essentially derivative, in the sense that they are the product of past labour and land, and not original productive elements. But the concept 'waiting' on the other hand, is the essential reality underlying the phenomena of capital and interest.

But in what sense is 'waiting' a factor of production? 'Waiting' is not a factor of production in a technical sense. It is not an active participant in the productive process. But it is a factor of production in the economic sense, namely, that 'waiting' is an indispensable condition of the productive process. For little production could take place without it, though it is not a part of the productive process nor an element in it. Prof. Pigou therefore calls 'waiting' a 'source' of a factor of production. But in economics, a factor of production must be a commodity, which is either supplied by the entrepreneur himself or borrowed by

him from some one else. And we have already seen that what is supplied by the entrepreneur himself or borrowed by him is not 'waiting', which appears meaningless, but purchasing power or 'control over resources'. And it is this 'control over resources' which constitutes an independent factor of production, distinct from labour and land, and it is given the name 'capital'. People are willing to lend the use of some part of their wealth or income and wait, because they expect an income from what they have lent in the form of interest.

In a monetary economy such as the one we are living in, the lending of 'control over resources' is invariably effected by means of a quantity of a medium of exchange, namely money. The lending of the resources in this way is very advantageous to both the lender and the entrepreneur, because money represents the control over resources in the most liquid form, and it is general purchasing power. In this sense, capital becomes equivalent to a sum of money, and interest the price of the use of money. But it must not be assumed that money is indispensable for the lending of the control over resources. That is to say, interest is not peculiar to a monetary economy. It can exist in a non-monetary economy too, though it may be called by a different term, namely rent. But only in a monetary economy the determination of its rate and its significance in the economic mechanism give rise to interesting and complicated problems, for a monetary economy is invariably an economy in which there is a highly developed credit system.

Moreover 'waiting' interpreted in terms of money or 'control over resources' in a liquid form helps us to understand better the relationship between land and

capital on the one hand and rent and interest on the other. Now 'waiting' is not connected with capital alone. Waiting is involved when a land-lord rents out his land or factory building to the entrepreneur in return for a rent. This transaction is in the nature of a loan. But what the landlord supplies is usually called land and not capital. The distinction between land and capital rests on whether what is loaned is liquid or not. Land as a factor of production is usually associated with specific pieces of wealth, whereas capital is associated with wealth in general. It means then that the distinction between land and capital is practically useless in a society where there is no recognised medium of exchange. In such an economy all loans must be made in concrete goods. However, it is possible that even in a barter economy there may be some relatively liquid resources, consisting mostly of non-specific goods, commanding a wide market. But the fundamental distinction between a monetary and barter economy is that in the former there is one commodity (money) which is used primarily and even exclusively as a means of buying other forms of wealth and as a store of liquid purchasing power. Here purchasing power becomes an independent entity. Neglect of this basis of distinction between land and capital caused many puzzles to economists like Senior and Marshall in their explanation of the interest phenomenon.

Hitherto we have only examined the several implications of the concept 'waiting'. But we have not yet discussed the main issue why a price is paid for 'waiting' in the form of interest. To do this we must go behind the supply of and the demand for 'waiting', and study the nature of the forces at work.

The theory which explains the payment of interest

in terms of subjective real cost, such as abstinence pain or disutility involved in the supply of waiting, is erroneous and untenable. 'Waiting' can only be a subjective real cost if it involves abstemiousness on the part of the suppliers of 'waiting', *i.e.*, the savers. But most of the 'waiting' is supplied by relatively rich people to whom 'waiting' does in no way mean abstemiousness. This capacity of the rich to save itself is a result of inequality of wealth and incomes. The ultimate incidence of 'waiting' falls upon the community as a whole, and especially upon its poorer members, who receive no interest, and not upon the relatively rich capitalists who receive interest. Moreover, the supply of 'waiting' does not vary directly with changes in the rate of interest. The psychology of saving is both complex and obscure. And even if some sacrifice is entailed in the case of a few savers, it is too vague to be measured. There is no necessary connection between money costs and real costs. Therefore it is difficult to dogmatise that the prevailing rate of interest is a measure of the sacrifice involved in 'waiting' even in the case of the 'marginal waiting'. Moreover in an economy where there is a highly developed credit system, most of the 'waiting' in the sense of 'purchasing power' or money is supplied by credit institutions which thereby make no real sacrifice. The mere empirical fact of 'waiting' which is necessary for the charging of interest does not therefore explain any real sacrifice at all. The concept of disutility or abstinence is, therefore, too narrow or too wide to have any significance at all.

There is another theory which is very similar in many respects to the abstinence theory of interest and which offers a psychological explanation of the phenomenon of interest. It is the time-preference or the agio

theory which explains interest in terms of the psychological preference for present goods over deferred or future goods. Economists like Böhm-Bawerk and Fisher hold the view that 'waiting' and time-preference are different things. They object to 'waiting' being considered as a separate cost in addition to the sacrifice involved in the renunciation of alternative enjoyments. To them 'waiting' is not an independent cost, but it actually measures the one sacrifice already made. And these regard interest as a 'surplus'. Other economists like Marshall and Fetter feel that the distinction between waiting and time-preference is fallacious, a matter of psychological subtlety. We shall take up this question for discussion when we deal with the time-preference theory.

Yet another important theory which explains the necessity of interest as a price for the supply of 'waiting', is the liquidity-preference theory of Mr. Keynes. As we shall see later, it offers a fairly satisfactory explanation of interest from the supply side.

Interest is also explained in terms of opportunity cost. The supplier of 'waiting' demands a price for 'waiting' because of the fact that he has given up the chances of making a gain by employing his capital himself in business. This explanation of interest comes under what is known as the productivity theory of interest.

The conclusion we arrive at in this chapter is that the theory which explains the necessity of interest in terms of the demand and supply of 'waiting' is only superficial, and in the last resort it has to rely on other final explanations such as the time-preference, liquidity-preference and productivity theories. In the following pages we shall attempt an examination of these theories.

CHAPTER VI

THE PRODUCTIVITY THEORY OF INTEREST

THERE has been an important school of thought which has held the view that 'capital' produces its own interest. Economists of this school regard 'productivity' as a property inherent in 'capital', and explain that this 'productivity' of capital is the cause of interest. It is assumed by these economists that this 'productivity' explains not merely the amount or price-sum yielded by a group of capital goods, but also the rate per cent. of yield computed on the valuation of the principal or capital value. This explanation of the phenomenon of interest has been termed the 'productivity theory of interest'. It is to the critical genius of Böhm-Bawerk that we owe a thorough analysis of the 'productivity' theory of interest.

The 'productivity' theory of interest has to explain clearly two things, namely, (1) the meaning of the phrase 'Productivity of capital'; (2) the nature of the theoretic task assigned by this theory to the 'productivity' of capital.

'Productivity' of capital can be interpreted in four ways.

(1) "Capital has the capacity of serving towards the production of goods."[1]

(2) "Capital has the power of serving towards the production of more goods than could be produced without it."[2]

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1 & 2 Böhm-Bawerk, *Capital and Interest*, p. 114.

These two interpretations lay stress on the physical productivity of capital. But in economics we are primarily concerned with the productivity of value. So there are two more interpretations explaining the productive power of capital in terms of value.

(3) "Capital has the power of producing more value than could be produced without it."[3]

(4) "Capital has the power of producing more value than it has in itself,"[4] *i.e.*, there is a surplus of value over and above the value of the capital consumed in production. It is this view which is in common usage.

Now what is the theoretic task assigned to the productive power of capital? Obviously, the productivity theories attempt to explain interest by the productive power of capital. These theories confine themselves to the explanation of what we have called 'natural interest', and treat 'loan interest' as essentially derivative. Now what the 'productivity' theories have to explain is that the productive power of capital is not merely the necessary but also the sufficient condition for the emergence of surplus value.

By capital the productivity theories mean capital goods or produced means of production or stored-up labour and land. All the productivity theories of interest start with the physical productivity of capital. We know that, as a matter of fact, capital is necessary for all production and in its absence the product will be more or less negligible. Capitalistic production is becoming the rule, and the result has been an enormous growth in the quantity of goods produced. From this physical productivity of capital it is not difficult to prove that capital also produces value. It is true that the goods

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3 & 4 Böhm-Bawerk, *Capital and Interest*, p. 114.

produced with the assistance of capital have value, not because they are produced, but because they are demanded for satisfying wants. So capital derives its value from the value of its products. But this is meaningless, unless we modify the statement by adding that the supply of capital itself is in some degree limited or inelastic. We may therefore accept the proposition that capital produces value.

But from this it is wrong to jump to the conclusion that capital produces surplus value. It is reasonable that a capital good should, during its life-time, earn a value equal to itself, *i.e.*, its replacement cost. But why should it earn or produce a value greater than that? The fact that capital is used in production does not explain interest.

The existence of interest or surplus value is explained in another way by stating that capital has the power of producing more or better goods than could be produced without it, and by proving that the more or better goods should be of more value than the value of capital consumed in their production. We may, without any dispute for the present, take for granted the first part of the above proposition, namely, that capital has the power of producing more or better goods than could be produced without it. The great productivity of goods of the capitalistic form of production is an admitted fact of experience and it cannot be proved *a priori*. Therefore it may be taken almost as a rule that the total product is increased by the employment of capital by a greater quantity of product than corresponds to the capital used up in production. This excess of product is said to constitute interest. And in this connection the marginal analysis is made use of. Wicksell explains interest as follows: "Capital is saved-up labour and

saved-up land. Interest is the difference between the marginal productivity of saved-up labour and land and current labour and land.[5] Suppose we take it for granted that the indirect use of land and labour is more productive of goods than the direct use of them; does it always prove the existence of interest? In other words, is the superior productivity of capital not merely the necessary but also the sufficient condition for the emergence of interest? Why should not, for instance, the value of capital rise till it becomes equal to the value of its product, and interest disappear? Or, why should not competition either reduce the value of the product to the value of the capital, or why should it not force the owners of capital to accept only the replacement charges of capital? It is a well-known phenomenon that with the advent of capitalistic production, prices of goods have fallen enormously owing to the superior productivity of this process. Why should not this tendency go further, so that the return from capital is no more than its replacement charges?

It is therefore theoretically difficult to prove the existence of interest by the superior physical productivity of capital goods. The whole difficulty lies in the transition of physical productivity into value productivity. But the fact remains that the productivity theorists have proved the existence of interest. They are able to do so because they assume the existence of stationary conditions, especially the condition that the exchange value of goods and services remains constant over a period of years. This assumption answers the objection against the productivity theory of interest. The constancy of prices means that the increased quantity of

[5] *Lectures on Political Economy*, vol. I, p. 154.

goods produced by capital neither reduces the value of the goods nor raises the value of capital, so that a surplus value (interest) of the product of capital over the value of capital is always present. But, in practice, economic conditions are rarely stationary. The productivity theory ignores the dynamic changes that are recurrent in a monetary economy. It runs too much in 'real' terms, assigning only a subordinate role to money and expectations. This is one of the most important defects of the productivity theory of interest. It is a known fact that an increased productivity of goods often results in a fall in the price of those goods. Sometimes the fall in price may be so great as to make the actual rate of interest earned negative.

But how is it that a positive rate of interest does exist? What happens in the real world is that though the employment of capital results in a fall in price of its product, this fall in price does not continue to the extent of extinguishing all interest, because of the fact that the demand for capital is for ever greater than the supply of it. There is practically no limit to the demand for capital for production and for durable consumption. On the other hand, the supply of capital cannot increase indefinitely because of the scarcity of human resources. The production of capital goods involves the foregoing of the opportunities of manufacturing and enjoying consumption goods at present, and so there is a definite limit to our capacity to produce capital goods. Hence the supply of capital is always relatively scarce to the demand for it. Interest is thus a rent paid for the use of capital on account of its scarcity. Capital would not be deemed scarce if it were not productive, nor would it be deemed productive if it were not scarce.

But the productivity theory of interest is incomplete as a final explanation of the existence of interest. It is too much preoccupied with the artificial goods ('produced means of production') concept of capital. Capital, in this sense, is reckoned to be one of the factors of production in the same way as land and labour are considered to be factors of production. Thus the productivity theory attempts to construct a homogeneous theory of distribution, without paying much attention to the distinctions between factors of production. For instance, it is practically overlooked that in the case of capital, unlike that of land or labour, it is necessary to set apart, out of its earnings, a sum for replacement of capital. This fact is of the greatest importance to the theory of interest since it is difficult to prove as to why the earnings of capital should exceed its replacement charges. If capital were everlasting like land, it would be productive in the sense land is productive. To link the origin of interest solely with capital goods is to restrict illogically the broader problem of interest. Interest arises not merely in the field of production but also in the field of consumption. The productivity theory obscures the importance of time as a general factor in the use of goods of every kind. Demand for borrowing comes not merely for productive purposes but also for consumption of durable goods, as well as for acquiring present wealth of consumption in anticipation of future wealth. Thus every productivity theorist must hold a dual theory, or, rather, two different theories, one to cover interest on indirect goods and the other to cover interest on consumption goods. It is no doubt true that in the modern world the most important source of demand for borrowing comes from production. But this circumstance should not

blind us to the fact that interest is a general phenomenon, and that it arises whenever resources are transferred from one person to another for a period of time, irrespective of the fact whether these resources are utilised for further production or for consumption.

There is another objection against the productivity theory of interest. Marx pointed out that it is illicit to impute to the owner of productive goods the 'productivity' of the things he owned. But this objection has no significance in an individualistic economy based on private property, where it is only the owner of productive wealth that receives the product of his wealth. Hitherto, we are proceeding on the assumption of the existence of private property. Granted this, the merits and demerits of interest-taking are essentially those of private property.

Thus we see how difficult it is to prove theoretically the surplus value-creating power of capital. The attempt involves us in a maze of assumptions, complications and confusions, in spite of which there is no guarantee that we can conclusively prove the existence of surplus-value. It is therefore desirable to redefine productivity in an entirely different way. 'Productivity' of capital should simply be taken to mean that there are advantages to the borrower for the time-control of the resources he has borrowed, on account of which he is disposed to pay a premium over and above the resources he has borrowed. In a monetary economy lending and borrowing of capital is done in the form of money. Therefore, let us confine ourselves to this money-capital. The reason why the borrower is prepared to pay a premium in the form of interest for the money he has borrowed is the fact that he has a bright chance of making a gain with the time-control of the money he has borrowed. He may obtain this pecuniary

gain in various ways. He may invest his money in indirect goods and appropriate for himself the increased productivity of the indirect processes of production. He may invest his money in a commercial enterprise and make gain by the constant fluctuations of the price of commodities, or it may be that he hopes to gain by speculating on the stock exchange. Of these, no doubt the most important source of gain is investment in productive enterprise.

Therefore, without worrying ourselves about a metaphysical discussion of the relations of cause and effect, we may suggest that, for economic purposes, the fact that a surplus value does follow the employment of capital amounts to exactly the same thing as though the capital were, in an unequivocal sense, the cause of the surplus value. It is immaterial to the borrower whether the surplus value is the result of the employment of capital or is purely incidental to it. So long as the acquisition of this surplus value is conditioned upon the possession or control of capital interest will be paid. So capital, it may be admitted, is productive, and interest is the payment for this productivity, or simply, interest is its product. This productivity of capital is by far the most important cause of interest. In its absence, the only source of interest would be the loans made for consumption. The situation would be exactly the same as in a mediæval society where there were few opportunities for investment, and where loans were made largely for consumption. And in such a society the taking of interest would be subject to severe moral condemnation. However, even in such a society, interest is very necessary, and it has the important economic function of putting a check on the extravagance of consumption. For, in the absence of interest,

men would not practise economy in the use of loanable funds. They would simply borrow to increase their consumption far beyond their means. They would repay a loan by means of a new loan.) In fact, the demand for loans would so much exceed the supply, that either a price for loans (interest) would have to be charged or the rationing of loans to the most deserving would have to be done. And surely, the former step would be adopted.

Hitherto, we have only discussed the question how far productivity of capital is the *cause* of interest. Now we must study how far this productivity is a determinant of the *rate of interest*. The peculiarity of the rate of interest is that it is a ratio between two exchange values, between the value of the services of capital and that of capital itself. It is this fact of the measurement of capital in terms of its exchange value that disturbs the theoretical correspondence between capital and the other factors of production. Land and labour are measured each in terms of its own technical unit, namely, working days or months and acre per annum. But capital is measured by a unit that is extraneous to itself, namely, exchange value. And this mode of measurement has this advantage, namely, that it makes all capital homogeneous, and also secures the homogeneity of interest as well as its source.)

The productivity theory of interest, or the more accepted version of it, namely, the marginal productivity theory of interest, fails to explain the rate of interest. The marginal productivity of a capital asset explains only the rents paid on capital assets. This rent is merely a sum.) To calculate the rate of interest, we must know the value of capital asset itself. The value of capital asset depends upon the value of its product

or services. Given the value of the product of capital, to arrive at the value of capital, there must already be a rate of interest previously determined. Thus if there is a capital asset earning a net income of Rs. 400 every year, the market value of the capital asset depends upon the prevailing rate of interest on money loans. Thus, if the rate is 10 per cent., then the value of the capital-asset is Rs. 4,000; if the rate is 5 per cent., then the value is Rs. 8,000. This mode of arriving at the value of capital is known as the process of 'Capitalization'. It is clear, therefore, that the attempt to explain the rate of interest on a money loan through the productivity of the borrowed capital involves us in a circular argument. For this explanation in trying to find the rate of interest already assumes the existence of that rate. It takes for granted the very thing it has to determine.

As Mr. Keynes has clearly pointed out, the marginal productivity or efficiency (as he puts it) of capital and the rate of interest are entirely different things. The marginal productivity of capital depends upon the scale of current investment, which in turn depends upon the rate of interest. If the rate of interest to be paid on borrowed money is lower than the marginal productivity of capital, investment will be increased, until there is a tendency for the two to be almost the same. It will be arguing in a circle to suggest that the rate of interest is determined by the marginal productivity of capital.

Moreover, as Mr. Keynes points out, we must not confine 'marginal productivity' of capital to the "increment of value obtainable by using an additional quantity of capital in the existing situation"[6] only. We must

[6] Keynes, *General Theory*, p. 138.

take into account the prospective yield of the capital-asset over the whole period of its life. Marginal productivity therefore depends upon the state of expectations regarding the future prices, costs of production, tastes, inventions and technique. Hence Mr. Keynes defines marginal efficiency of capital as being "equal to that rate of discount which would make the present value of the series of annuities given by the returns expected from the capital-asset during its life just equal to its supply price".[7]

It is only under the impossible conditions of ideally perfect competition, where omniscience prevailed, where time and space were annihilated, that the marginal productivity of capital and the rate of interest would be the same. And the prospective yield of the capital-asset would be the same during the entire life of the asset. Incidentally, it is, as Mr. Keynes has pointed out, a state of 'full' employment. It is a world of static equilibrium of Ricardo and J. B. Clark. In such a world, if there were a divergence between the two, investments would shift until the two coincided. But under real circumstances, they can never be the same. There is divergence between the two, which constitutes profit accruing to the entrepreneur. That is to say, the yield from investments does invariably contain an element of profit, so that it is impossible to know the magnitude of the true return on capital. The real world is a dynamic one, full of changes in population, tastes, growth of capital, inventions and in the prices of goods and productive services.

Moreover in the actual world changes in the quantity of money play a decisive part in determining

[7] Keynes, *General Theory*, p. 135.

the rate of interest. To-day, the banking system has enormous powers of creating money and it can directly control the rate of interest. Thus changes in the quantity of money coupled with the state of expectations regarding the future play a more vital part than the changes in productivity of capital in the actual determination of the rate of interest. The productivity theory, which is essentially a static theory, safely neglects the importance of money and credit.

Therefore, in the actual world, marginal productivity or efficiency of capital, while offering a *cause* for the payment of interest, does not determine the *rate* of interest. Of course, it cannot be denied that changes in the productivity of capital have some influence on the rate of interest. If there is an increase in the marginal productivity of capital owing to a new invention or a sudden rise in demand, the demand for loanable funds increases. If the supply of funds is not responsive, the rate of interest goes up. But if the monetary authorities quickly respond to the increase in the demand for funds by an expansion of credit, the rate of interest does not at all arise. Hence, the influence of the productivity of capital on the rate of interest is indirect, and when it acts, it acts mainly through the monetary sphere. So, for all practical and theoretical purposes, it is better we keep the marginal productivity of capital and the rate of interest separate and distinct. By the 'rate of interest' we shall simply mean the price paid for the use of money lent. From earliest times, economists have used interest in a two-fold sense, namely, 'natural' interest and 'loan' interest. The former is used to denote the marginal productivity of capital. 'Loan' interest is the price paid for the use of money and it is treated as a subsidiary phenomenon,

incidental to, and depending for its magnitude upon the former. But in recent years, interest is primarily regarded as a money premium paid for the use of money lent for a specified period of time. Needless to say this is a change of view in the right direction and a most welcome one, for it removes all ambiguity regarding the rate of interest.

CHAPTER VII

THE EXPLOITATION THEORY OF INTEREST

THE unsatisfactory way in which the problem of interest or 'surplus value' was treated by the classical economists led to a contemporaneous development of a school of thought which regarded all property incomes as exploitation of labour. This was the Socialist School, the founders and most important members of which are Rodbertus and Karl Marx. The theories of these two men regarding the explanation of 'surplus value' are similar in many respects. But Marx's explanation is more comprehensive and critical. Hence in the following pages we shall confine ourselves to Marx, as the typical exponent of the Socialist School.

The exploitation theory of interest was an inevitable consequence of the labour theory of value. The acceptance of the labour theory of value of Adam Smith and Ricardo (who may be regarded as the involuntary godfathers of the exploitation theory) and the spread of capitalist production with its inevitable gulf between capital and labour prepared the way for the appearance of the exploitation theory.

As we have noticed earlier, Marx rejects the abstinence and productivity theories of interest. To him, interest is not a reward for saving or abstinence. The simple act of saving in the form of money would exclude the possibility of its expansion as capital; while saving in the form of the hoarding of commodities "will be sheer tomfoolery".[1] The abstinence theory is illogical in another sense, because "it has never occurred

[1] Marx, *Capital*, vol. I, p. 599.

to the vulgar economist to make the single reflection that every action may be viewed as abstinence from its opposite. Eating is abstinence from fasting, walking is abstinence from standing still, working abstinence from idling, idling abstinence from working, etc."[2] Similarly productivity cannot be, according to Marx, an explanation of 'surplus value' because productivity is not an inherent property of capital. Moreover, it is illicit to impute to the owner the productivity of the things he owns. To Marx the only explanation of 'surplus value' lies in the class structure of the existing society. Society is divided into two classes, the owners of property and the propertyless. The propertyless are at the mercy of the property-owners, and they are subject to exploitation.

To understand Marx's theory of surplus value, we must first know his theory of value. There is very little that is original or new in Marx's theory of value. He simply restates the classical labour theory of value, as expounded by Smith and Ricardo. Marx's main thesis is that the value of commodities depends exclusively upon the amount of labour involved in their production. This labour is not the labour of any particular worker, but an abstract labour, analogous to the conception of horsepower in mechanics. The intrusion of 'capital' as a factor of production need not upset the labour theory of value, for after all, all capital goods are nothing but stored-up labour and stored-up land (which is a free gift of nature and costs nothing). All capital is ultimately the product of labour. There is no need to dispute this proposition. It contains a large element of truth.

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[2] Marx, *Capital*, vol. I, p. 608.

The essential problem for Marx is the explanation of 'surplus value'. The 'surplus value' of Marx is not merely interest, but it includes rent and profit. It is the sum of non-labour or property incomes. To explain the origin of 'surplus value' Marx takes two very important ingredients of the classical theory. One is the proposition that labour is the source and measure of value. The other is that wages of labour tend always to subsistence level. Out of these two propositions Marx explains his doctrine of 'surplus value'. Thus, Marx takes over these two doctrines from the classical theory, but he draws entirely different conclusions from them.

Marx analyses the emergence of surplus value thus: Labour alone is creative of value. The labourer produces more than is necessary for his subsistence. The labourer is made to work for a longer time than is necessary to maintain himself. But the more important reasons for the production by labour of a value in excess of its cost of production are the benefits of co-operation and division of labour. But the labourer, on the other hand, is paid only enough to enable him to subsist and reproduce his kind. The rest of the value produced by the labourer, or 'surplus value' as Marx called it, is appropriated by the capitalist, because he has bought labour power for a subsistence wage and set it to work. This 'surplus value' is the source of rent, interest and profits and this is clearly the exploitation of labour, and so, it is robbery. The labourer is compelled to accept only subsistence wages from the capitalist because he lacks the means of production and the means of consumption. Production takes time. In order to realise the value of his product, the labourer has to wait for some

period of time. But during this period, he must live. So he needs consumption goods. Since it is only the capitalist that commands the consumption goods, the labourer has to depend upon the capitalist who has obtained a strategic position.

So the essential feature of capitalistic production is that property owners advance their assets in the form of money with the sole view of getting back the money with a premium or surplus. Marx's formula for describing the capitalistic production is M–C–M′, where M′ is greater than M. It may also be stated thus—

$$M \rightarrow C \begin{cases} \frac{m}{L} \ldots\ldots, p \ldots\ldots C' \text{ or } \begin{cases} \Delta C \rightarrow M \begin{cases} \frac{M}{\Delta M} \rightarrow M' \end{cases} \end{cases} \end{cases}$$ [3]

That is, capitalist production consists of three stages. (*a*) M → C. Money capital M is transformed into elements of production C. One part of M, namely *c* or 'constant capital' is invested in materials of production *m*; another part of M, namely *v* or 'variable capital' is invested in labour power as wages. (*b*) *p*. This is the activity of production or the creation of new utilities by the application of labour power. It is in this process that C grows into C′ (*i.e.*, C′ is greater than C). (*c*) C′→M′. The newly created goods are again transformed into their money form; *i.e.*, the finished goods are sold for money. M′ is obviously greater than M, C′ is greater than C.[4] The first and the third stages belong to the field of circulation or exchange and the second to the field of production. According to Marx, *s* or the increment in *m* (*i.e.*, M′ — M) or 'surplus value', though it is realised in the

[3] Fan-Hung, "Keynes and Marx, on the Theory of Capital Accumulation, Money and Interest", *Review of Economic Studies*, Oct. 1939, p. 28.

[4] This assumes a constant level of prices.

field of exchange, it is actually created in the field of production. It does not arise in the field of circulation, *i.e.*, by a process of buying cheap and selling dear, because by this process one loses what the other gains. Therefore "for the (economic) system as a whole S is a function of the expenditure of current labour power, at any given ratio of productivity to wages".[5] In other words it is only the variable capital invested in labour power that produces 'surplus value'. Marx calls the ratio s/v the rate of surplus value, and this expresses the degree of exploitation of labour by capital. But the capitalist should invest his money in constant capital as well. He therefore calculates the increment of value on his total capital. It is the ratio $\frac{s}{c+v}$, or what Marx calls the Rate of Profit.

The 'surplus value' of Marx contains interest, rent and profit. But its most important element is of course interest. Marx's explanation of surplus value is really an explanation of what we have called 'natural' interest or productivity of capital. Marx's theory too may be regarded as a productivity theory of interest, because he is aware that capitalist production is more productive than simple production. Of course Marx is wrong in stating that it is only the variable capital that produces 'surplus value'. Fixed capital too—in fact primarily—produces 'surplus value'. But the difference between Marx and other productivity theorists is that Marx claims the 'surplus value' as wholly belonging to labour and labour alone. Marx is not satisfied with the answer that capital aids labour in production, and, therefore, the owner of capital is

[5] Fan-Hung, *op. cit.*, p. 28.

entitled to the 'surplus value'. For, Marx will carry the argument back and point out that capital goods themselves were originally produced by labour and therefore even the product of capital should go to labour. The proposition that the origin of all incomes from capital goods may ultimately be traced to past labour incorporated in them is in the main correct. But the fundamental defect in the argument of Marx and his followers is that they would have the labourer *now* receive the entire *future* value of his product. This is only possible when the labourer is prepared to wait for the realisation of the full value of his product. All production involves waiting. It is this waiting which is most fundamental to the phenomena of capital and interest. That is to say, capital is a quantity of two dimensions, a labour dimension and a time dimension. But the labourer has got to live during the period of waiting. Since he lacks command over resources, he transfers his waiting to the capitalist and accepts from him now a value lower than the full realised value of his product. The capitalist thus gets the surplus value for waiting. But Marx is entirely correct in rejecting the view that this waiting on the part of the capitalist is a sacrifice. He is also correct in his assertion that the appropriation of the surplus by the capitalist is the result of the class-structure of society. In fact it is this that is the cornerstone of Marx's theory of 'surplus value'. Many critics seem to be of the opinion that Marx is ignorant of the fact that capital is two-dimensional, and that he emphasises only the labour-dimension to the exclusive neglect of the time-dimension. It is hard to imagine that Marx is ignorant of this elementary fact. Marx's contention is that the appropriation of the surplus value by the capitalist is the

result of the institution of private property, and is therefore subject to the prevalence of a particular system of economic relations. It is not eternal just as the individualist society is not eternal.

The Marxian theory of 'surplus value' is in essentials an attack on the present mode of distribution of wealth among the several classes of people. Under the guise of the theory of the so-called functional distribution of wealth, we have come to tolerate gross inequality of wealth, incomes and opportunities in the community. This inequality leads to further inequality. Though we may reckon any number of 'factors of production', there is only one 'factor' which enjoys the incomes of all 'factors'. This 'factor' is the human being. Thus, Marx does not deny the existence of 'surplus value'. All that he claims is that this 'surplus value' should be shared not by a few but by the whole community.

All along we have assumed the prevalence of the institution of private property and freedom of enterprise. Granted this, interest is necessary and inevitable. We ought to be in wide sympathy with Marx and his followers for the social injustice resulting from inequality of wealth and incomes. But "as to the ethical challenge which they (exploitation theories) present, it goes without saying that in competitive society every income is based on economic power. Whether or when or how far property income is defensible on grounds of abstract right or of social expediency is a question to be answered by the ethical or political philosopher rather than by the economist. Interest is merely a form of payment for the use of real wealth transferred from one person to another. Hence no special objection could be raised against it; its merits and demerits are those

of private property and of a social order based on ownership."[6]

It must be noted that Marx does not construct a theory of interest out of his theory of surplus value. It must be said to his credit that Marx anticipates many modern views on money and the rate of interest. In fact, the views of Marx and Mr. J. M. Keynes on capital accumulation and the rate of interest are said to be almost identical. Marx's theory of 'surplus value' is intended only to explain the productivity or profitability of capital. He conceives the rate of interest as essentially a money-rate. We shall deal with this part of Marx's theory in a later chapter.

[6] Knight, *op. cit.*, p. 255.

CHAPTER VIII

THE AUSTRIAN THEORY OF INTEREST

I

TOWARDS the latter part of the nineteenth century economics underwent a profound change by the advent of the Austrian School of economists, the most important members of this school being, Menger, Wieser and Böhm-Bawerk, on the continent. Jevons in England had very much in common with this school of thought. The importance of this school lay in its subjective approach to economics. The emphasis was shifted from supply and cost to demand and (marginal) utility as the determinants of exchange value. In the present chapter we are primarily concerned with the contribution of the Austrian School to the theory of capital and interest. On the continent, the most important contribution to the theory of capital and interest was made by Böhm-Bawerk, and in England, by Jevons. Jevons' theory was more or less the same as that put forth by Böhm-Bawerk. But Böhm-Bawerk's theory is more widely known and discussed, since it is expressed in non-mathematical language, unlike that of Jevons. Hence we shall content ourselves with examining Böhm-Bawerk's theory of interest.

Böhm-Bawerk was drawn into discussion on the theory of interest for two main reasons. The first and the more important reason was his eagerness to destroy the influence of Marx, who, with his followers, preached that all property-income was robbery. The

other was his desire to adopt a subjective approach to problems of capital and interest.

The first part of his work was *Capital and Interest*, in which he critically examined the various earlier theories of interest such as the Productivity, Abstinence and Exploitation theories. In criticising these he was unjust to many economists. The chief reason why he rejected the earlier theories of interest was that they dealt inadequately or not at all with the time-element in the phenomena of production and value.

The second part of his work was the *Positive Theory of Capital* in which he set forth his own views on capital and interest. This book has exerted a profound influence on later discussions of capital and interest, and has given rise to endless controversy.

The major part of the Positive Theory is concerned with a description of the capitalistic system of production. According to Böhm-Bawerk, the 'capitalistic process of production' is the primary concept, and 'capital' itself is the secondary concept. The essential feature of the capitalistic structure of production (as distinct from the capitalistic organisation of society) is that it is a time-using process. It is the adoption of wisely chosen roundabout methods of production. As civilization advances, we rarely produce consumption goods directly. On the other hand, we first make tools and machines, and then with the aid of these we manufacture final consumption goods. That is to say, we apply a given amount of labour and natural resources to remote ends, such as the construction of tools and machinery rather than apply the labour directly to land. We adopt roundabout methods of production because of their superior efficiency in production. As Böhm-Bawerk says, "With an equal expenditure of primary

productive powers (that is to say, labour and valuable natural powers) more or better goods can be produced by a wisely chosen capitalist process than could be by direct unassisted production."[1] To measure the degree of roundaboutness Böhm-Bawerk conceives of a period of production. The period of production is conceived as the average time between the expenditure of the uses of land and labour and their turning out of the finished consumption good. Böhm-Bawerk asserts that after a time every increase in the length of the period of production results in an absolute increase of product, but only at a diminishing rate. But, Böhm-Bawerk realises that the great disadvantage of capitalistic production is its sacrifice of time.

Böhm-Bawerk defines 'capital' as nothing but the complex of intermediate products or products destined for further production. That is, capital is no longer an independent factor of production. The only economic factors of production are labour and land. Capital is simply stored-up land and labour. In this analysis, there is no distinction between fixed and circulating capital.

Thus, the great contributions of Böhm-Bawerk to the theory of capital are his conception of the capitalistic production as a time-consuming process, and his view of capital as nothing but intermediate goods. But his concept of the 'period of production' has given rise to acute controversy regarding its relevance and usefulness. We shall return to this subject towards the end of this chapter.

Then Böhm-Bawerk proceeds to the analysis of the causes for the existence of interest. His theory of

[1] Böhm-Bawerk, *Positive Theory of Capital*, Smart's translation, p. 82.

interest is generally known as the 'Agio' or the 'Time-Preference' theory. What he proclaims as a single theory of interest, in reality consists of two different theories. Böhm-Bawerk first considers the problem of interest in its widest aspect. Interest is regarded by him, in the first instance, as an exchange phenomenon. It is not entirely the result of production and distribution. Böhm-Bawerk finds the cause of interest in the fact that human beings prefer present goods to future goods of like kind and number. "Present goods are, as a rule, worth more than future goods of like kind and number. This proposition is the kernel and centre of the interest theory which I have to present."[2] Let us take the simplest case of interest as it appears in the loan for consumption. A person borrows Rs. 100 at present and promises to return Rs. 105 a year hence. Here there is an exchange of present money for future money. Rs. 105 is returned a year hence because it is the equivalent in value to the present Rs. 100 lent. In other words, the surplus value of Rs. 5 of the sum returned over the sum borrowed is only apparent. This premium or *agio* of Rs. 5 on present money is interest. In other words, interest is the complementary part of the principal lent. In this sense, a loan without interest is equivalent to a sale below market price.

Böhm-Bawerk puts forth three grounds for the human preference of present goods to future goods of the same kind and number. They are (1) "Differences in want and provision for want".[3] This is true of those people who are in immediate distress, and of people whose economic prospects for the future are bright, but who lack resources at present. These two sets of

[2] Böhm-Bawerk, *Positive Theory of Capital*, Smart's translation, p. 237.
[3] *Ibid.*, p. 251.

people value a given amount of present wealth much more than they do the same wealth in the future. Böhm-Bawerk goes further and asserts that even those who are much better provided in the present than they hope to be in the future, value present goods either at the same figure as the future or a little higher since, in most cases, it is possible to preserve goods till the future.

(2) The second ground is the perspective under-estimate of the future. This under-estimation is said to be due to: (*a*) Want of imagination, (*b*) Defect of will, (*c*) Uncertainty of life, and above all to the fact that future goods are simply future. That is, just as objects appear smaller if they are at a distance in space, so too they appear smaller at a distance of time.

(3) The third ground is the technical superiority of present goods over future goods. Present goods could be used for indirect production in order to obtain an increased product in the future.

These three grounds so operate that the marginal utility of present goods is greater than the marginal utility of the same goods in the future. The first two grounds emphasise the under-valuation of future goods for psychological reasons; the third ground emphasises under-valuation for technical reasons based on productivity. The first two grounds are cumulative and the third alternative. That is, in a society in which there is no organic production and distribution, the first two grounds are sufficient to explain the phenomenon of interest. But in a society where there is organic production the third ground becomes all important and it helps the measurement of interest in terms of time. In other words, interest will be determined by the marginal productivity of roundabout

production. But even here, the origin of interest is essentially subjective. The third ground operates only on the demand side. Hence this ground alone cannot determine the rate of interest. It is necessary that one of the other two grounds must be operative. But why the third ground is the most important in the theory of interest is the fact that demand for saving is very elastic, while the supply is relatively inelastic. Of course this argument applies with greater force to a stationary economy where the influence of changes in the quantity of money is neglected.

Let us now see how, according to Böhm-Bawerk, interest accrues subjectively. Means of production are really future goods. Their value is therefore less than the value of present goods. But in course of time these future goods, that is, the means of production, ripen into present goods with the full value of present goods. Interest is the difference in value between the formerly future and now present goods. In the same way, the rent or hire from durable goods can be explained.

Thus in the actual world all the three factors co-operate in making, to the overwhelming majority of men, the marginal utility of present goods higher than that of the future goods. Böhm-Bawerk has clearly emphasised the significance of time in the spheres of consumption and production. The significance of time in the field of consumption is that future goods are permanently discounted in value, and in the field of production the possession of goods at present can be expended on roundabout productive processes to obtain increased and better product. As a result of these two influences, the competitive market places a premium or an *agio* on present goods as against future goods. The

first factor influences the supply side; the second influences the demand side. The first stresses why interest should be paid and the second how interest can be paid. And hence Böhm-Bawerk concludes that interest is not exploitation but that it is a natural phenomenon and an economic necessity, and that interest would be present even in a socialist state. And Böhm-Bawerk feels that he has finally refuted Marx's explanation of surplus value.

But, unfortunately, the fundamental thesis of Böhm-Bawerk is wrong. As we observed earlier, since the publication of Böhm-Bawerk's books discussion has centred round the question whether the view of a non-technical psychological preference for present goods or what is called by the names *agio* or time-preference theory is different in principle from the theory of abstinence. Our answer to this question is that there is very little difference between the time-preference or the *agio* theory and the theory of abstinence or waiting. Though Böhm-Bawerk holds that any one of the three grounds he has mentioned is sufficient to explain the existence of interest, yet the subjective factors are the most important in explaining interest as an enduring phenomenon. Thus, for instance, the third ground, namely, the technical superiority of present goods, cannot explain the existence of interest. It is as weak an explanation as any other of the productivity theories which Böhm-Bawerk severely condemned. If roundabout processes are more productive, it does not explain the fact why the roundabout processes are scarce and are not adopted on an infinite scale. According to the Austrians, it is only the subjective factors which really create the scarcity of means in relation to ends and without them value cannot arise.

The decisive factor operating on the supply of capital, according to Böhm-Bawerk, is the subjective underestimation of the future. The supplier of capital sacrifices present wealth for future wealth of relatively lower marginal utility and receives interest. In what way is this different from the notion that interest is the reward or compensation for the pain of abstinence of the capitalist? It may be that the *agio* theory conceives of interest as a part of the principal lent, while the abstinence theory regards interest as a premium over and above the principal lent. But this distinction is useless for practical purposes. Hence the distinction between the *agio* theory and the abstinence theory of interest is fallacious, a matter of words or of psychological subtlety. Since we have refuted the abstinence theory, the *agio* theory too stands condemned.

It is impossible to accept the existence of time-preference (preference for present goods or wealth as against the future) as a *universal* phenomenon. It is no doubt true that persons who are in immediate distress and those who start careers, in short all borrowers at the moment they borrow, set a higher value on present wealth than they do on the future wealth. But how can the same be said of the lender? With the advance of civilization, we tend to value the future more than the present. That is to say, instead of discounting the future, very often we discount the present at a rapid rate. There are numerous motives, moral and social, for our looking beyond our lives, and these motives really explain the creation or the supply of capital. We have an interest in our *post-mortem* reputation. That is why we spend huge amounts of money on such things as the building of pyramids, founding of Universities. We have personal affection for our relatives,

and we save and invest our resources for their benefit. And we have various ideal interests in our life. (As Prof. Knight and Mr. Bertrand Russel emphasise, most of our activities in the acquisition of wealth may ultimately be traced to our desire for personal prestige and social power.)

The cardinal error of Böhm-Bawerk is that he attempts the comparison of the value of commodities of entirely different periods of time. As Wicksell puts it, "In Böhm-Bawerk's opinion, the difference in value between present and future goods which comprises this *agio*, originates, like all other exchange values, in their different marginal utilities. But at an earlier stage, Böhm-Bawerk himself had defined marginal utility as 'the significance of the least significant of the concrete needs or partial needs which are satisfied by the available supplies of the kind in question', and we may add, in full agreement with the whole trend of his reasoning, 'during a given consumption period'. But if we seek to apply this directly to present and future goods, the difficulty clearly arises that both the supply (of future goods) and the period of consumption are quite indeterminate."[4]

But there is some truth in the first ground of Böhm-Bawerk. This has been well developed by Irving Fisher and Frank Fetter, who are the principal followers of Böhm-Bawerk's *agio* theory. The essence of it is that there are some people who are better provided now than they hope to be in the future, while there are many who hope to be better provided in the future than at present. The individual in each group is anxious to distribute his expenditure on consumption as evenly as possible

[4] Wicksell, *Lectures on Political Economy*, vol. I, p. 169.

over time. Naturally, if these two sets of people meet in the market, exchange of present for future wealth takes place. Now in a barter economy, it is possible that the lender is prepared to accept less quantity of goods in the future than what he has lent at present. That is, interest may be negative. But in a monetary economy the lender will demand the repayment of at least the principal lent, because money involves no or very little carrying costs. But the presence of people who are anxious to borrow and pay a premium above the amount of loan induces the lender to charge interest; and the lender undergoes no sacrifice. This kind of borrowing for evening out incomes over time is very common. But the great defect of this theory is that it pays too much attention to loans for consumption and neglects the demand for loans for production, which is of the greatest importance in the modern industrial world.

In spite of the above arguments, it is a fact that the generality of men *as consumers* prefer the present to the future. But it is impossible to accept the subjective undervaluation of the future as a legitimate factor in the *supply of capital,* for reasons mentioned above. Moreover in the modern world most of the lending is done by banks which have no time-preference for the present. If there is an *agio* or interest, it is not entirely due to human nature. It is facilitated by a particular social framework, and by such factors as class divisions, distribution of income. This particular social framework is historically determined and cannot be eternal. Hence there is no such thing as a natural right to an income from capital in the shape of interest.

Böhm-Bawerk's third ground for the existence of interest, namely, the technical superiority of present

goods, has given rise to endless criticism and controversy. For one thing, critics are right when they point out that this third ground is nothing other than a reasonably correct presentation of the marginal productivity theory of interest, which he severely condemned in his book, *Capital and Interest*. Though he interprets even the third ground in terms of subjective preference, clearly it is an objective and technical fact. It is tantamount to admitting that capital is productive. In other words, Böhm-Bawerk's theory is essentially a productivity theory of interest. In so far as that is so, all the criticisms we have levelled against that theory hold good in the case of Böhm-Bawerk's theory.

After stating the three grounds for the existence of interest, Böhm-Bawerk deals at length with the determination of the rate of interest. Of course, here he is mainly concerned with the principal form of interest, namely, that which arises in production, or what he calls 'Natural' interest. In this context, he makes an elaborate excursion into the relation between wages and interest, and puts forth a theory which is similar in many respects to the classical Wages Fund doctrine. The most important factors affecting the rate of interest are, according to Böhm-Bawerk, three, namely, (1) The amount of the National Subsistence Fund, (2) The number of producers or labourers to be provided out of the same, (3) The position of the scale of surplus returns or the degree of productivity connected with the increasing extension of the capitalist process of production. Wages and interests vary inversely. For, an increase in the subsistence fund increases wages while the rate of interest is lowered. It comes about thus. The value of labour (*i.e.*, wages) depends upon the anticipated product of labour, which

in turn depends upon the length of the productive process. That is to say, wages are not fixed at any particular point from which we can start. Therefore, it is best to start with a given quantity of subsistence fund which will buy up the whole of the available labour. Now if this subsistence fund increases relatively to population, it will seek for employment. According to Böhm-Bawerk, this increased subsistence fund will not raise wages, since the productivity of labour has not increased. The increased fund will be employed in extending the period of production. Now every increase in the period of production results in an absolute increase in the product but at a diminishing rate. Now the rate of interest is determined by the marginal productivity of capital, which diminishes as the production period is lengthened. Hence when there is an increase of subsistence fund, the rate of interest will fall. But the absolute increase in the product will be shared by labour, that is, it will increase the level of wages. Conversely, if population increases relatively to the subsistence fund, opposite results will follow; that is, wages fall and the rate of interest rises, since the period of production is curtailed and consequently the marginal productivity of capital rises. Hence a fall in the rate of interest or a rise in wages is symptomatic of an extension of the period of production.

In spite of its many weak points (especially those connected with the concept of the period of production) this theory offers a fairly satisfactory explanation of the distribution of wealth between capital and labour. It is a known fact that as a country grows wealthier the rate of interest falls while wages rise. But this theory is very abstract, and one of its most important

assumptions is the existence of perfect competition and static conditions. However, the theory explains how the increased productivity of capital is not enjoyed exclusively by capital itself, but how it is shared between capital and labour.

Böhm-Bawerk is aware that his subsistence fund is in many respects similar to the Wages Fund of the classical economists. He therefore hastens to point out the difference between his theory and that of the classical economists. By subsistence fund Böhm-Bawerk means not simply food and the common necessaries of life, but all that goes to the maintenance of the workers, whatever their standard of life is. It is the entire wealth of the community. It consists of products at all stages of maturity. It thus includes the means of production too. Hence capital is synonymous with wealth in general. But here is some apparent inconsistency. Earlier, Böhm-Bawerk means by capital essentially capital goods. How is this definition consistent with the definition of capital as wealth in general? The cause for this apparent inconsistency is that 'capital goods' is a social concept and capital in the sense of wealth is a private or individual concept. Böhm-Bawerk clearly points out that capital goods do not produce interest. Interest arises in the exchange of present private wealth for future private wealth. That is, interest arises not in the sphere of production but in the sphere of exchange.

Another inconsistency of Böhm-Bawerk is that in his theory of the relation between wages and interest, he practically abandons the *agio* doctrine, and puts forth a productivity theory.

Our final estimate of Böhm-Bawerk's work is that after almost a thousand pages of prolix argumentation

he gives a none too clear but reasonably correct statement of the productivity theory, with an admixture of the wages-fund doctrine. His is really a marginal productivity theory of interest, emphasising the significance of the time element in production. And it is this theory which is most widely accepted by Böhm-Bawerk's Austrian followers. The *agio* theory is no longer the accepted doctrine of the Austrian School.

Böhm-Bawerk's theory gave rise to two schools of thought. The one school represented mainly by Professors Frank Fetter and Irving Fisher of America adheres to the time-preference theory, though Fisher in his *Theory of Interest* attaches importance to the investment opportunity principle in the interest problem. The other school represented by Knut Wicksell and Prof. Hayek entirely rejects this time-preference theory and stresses the productive element of capital. All that Wicksell has done is to modify and complete Böhm-Bawerk's marginal productivity theory. The fundamental ideas of Wicksell's theory—the idea that interest is the difference between the marginal productivity of direct and indirect uses of the factors of production and his view that when there is an increase in capital different existing capital investments are not increased proportionately, but that relatively longer investments predominate, and that through this an increase in wages and the prices of the original services due to the increase of capital is counteracted—constitute an important contribution to the theory of capital and interest. His most important contribution is his theory concerning the relationship between the rate of interest and the price-level. Wicksell was one of the first to recognise the monetary character of the rate of interest. We shall study this part of his work in another section of this essay.

II

After this general survey of the Austrian theory of interest, we shall return now to the very important and most controversial part of the Austrian theory, namely, the concept of the 'period of production' or the 'period of investment', originally expounded by Böhm-Bawerk and developed by, among others, Wicksell and Prof. Hayek.

We shall do well to discuss first the central feature of the Austrian theory that roundabout processes are more productive than direct processes. As a general statement this is correct and consistent with facts. But there is nothing inherently economical in roundabout methods; only the most economical methods often happen to be roundabout. Many short processes too are efficient. Moreover the ultimate quantity of value will not increase, even if their physical productivity is increasing, as the processes become more and more roundabout. It would yield to entrepreneurs a smaller profit than otherwise. With a given amount of labour and capital there is a definite limit to the length of the productive process that could be used to advantage. For, a longer process involves more waiting than a shorter one. Waiting is disagreeable, because of the postponement of consumption to a later date. We cannot increase the period of production indefinitely because of the scarcity of present resources, on account of which consumption cannot be postponed beyond a certain point. "Given the optimum amount of roundaboutness, we shall, of course, select the most efficient roundabout processes which we can find up to the required aggregate. But the optimum amount itself should be such as to provide at the appropriate dates for that part of consumers' demand which it is desired to

defer. In optimum conditions, that is to say, production should be so organized as to produce in the most efficient manner, compatible with delivery at the dates at which consumers' demand is expected to become effective. It is no use to produce for delivery; except in so far as the prospect of a larger meal, so to speak, induces the consumer to anticipate or postpone the hour of dinner. If, after hearing full particulars of the meals, he can get by fixing dinner at different hours, the consumer is expected to decide in favour of eight o'clock, it is the business of the cook to provide the best dinner he can for service at that hour, irrespective of whether 7–30 or 8 o'clock or 8–30 is the hour which would suit him best if time counted for nothing, one way or the other, and his only task was to produce the absolutely best dinner".[5] (Moreover another important factor which shortens the roundaboutness is the presence of interest costs on the capital invested. Because interest has to be paid on capital, therefore roundabout processes which involve much locking up of capital are not undertaken unless they yield more than the rate of interest to be paid. Thus it is not certain that more roundabout processes are more efficient than less roundabout ones.

On the general and clear concept of the roundabout production Böhm-Bawerk builds the very obscure concept of the 'period of production'. This concept forms an important ingredient in the capital and trade cycle theories of the Austrian economists. It has been modified and adopted by economists like Wicksell and Prof. Hayek. Böhm-Bawerk is by no means the originator of this concept. It may be traced to the

[5] Keynes, *General Theory*, pp. 215–6.

Physiocrats, to Ricardo, to Senior and above all to Jevons, who was the first to elaborate the idea.

"The period of production is the average lapse of time intervening between the activities of the original factors of production and the fruition of their product by consumers."[6] In calculating the period of production we must not take the absolute period of time lapsed into consideration. For example, if the production of a commodity requires in all 100 days' labour, and of these hundred one day was expended 10 years before the completion of the commodity, one day 9 years before, and others respectively 8, 7, 6, 5 .... 1 before, while the remaining 90 days were expended immediately before the completion, the average production period of the commodity is

$$\frac{\Sigma 10\times 1, 9\times 1, 8\times 1 \cdots\cdots 3\times 1, 2\times 1, 90\times 0}{100} = \frac{55}{100} = \frac{11}{20} = \cdot 55 \text{ years.}$$

"The purpose of the Austrian or 'time period' theory of capital was", in the words of Mr. N. Kaldor, "to show that 'capital' is a distinct factor of production, which can be measured in homogeneous units, both in the production of particular goods and in the economic system as a whole; that the price of this factor is the rate of interest; that both capital and interest can thus be brought into the framework of production and distribution theory on the same plane as 'labour' and 'land'. It rested on two premises. First, the assumption that it is possible to make a 'valid' general distinction between capital goods and other productive resources. Second, the attempted demonstration that, with the aid of the concept of the investment period the heterogeneous mass of capital goods can be reduced,

[6] R. G. Hawtrey, *Capital and Employment*, p. 11.

to homogeneity, and thus 'capital' can be treated as a quantity *per se*".[7] Capital becomes measurable in terms of time. The critics of the Austrian theory reject both these premises. They declare that the concept of the production-period is neither relevant nor useful in the analysis of economic problems, especially the dynamic problem of the trade cycle.

The critics of the Austrian theory deny that any general distinction can be drawn between capital goods and other productive instruments. In other words, it is impossible to distinguish between original and produced means of production, or between permanent and non-permanent resources. In one sense permanent resources never exist. Every productive resource including labour requires maintenance. In another sense, all resources are permanent, if they are maintained for ever. The point is that it is impossible to draw any distinction between permanent and non-permanent resources. Similarly the distinction between original and produced factors is invalid because in the real world resources are produced with the help of the services of all kinds of resources, original as well as produced, and it is not true as the Austrian theory implies that 'produced' factors are produced exclusively with the aid of original factors. This circumstance, as we shall see, destroys the concept of the period of production.

Secondly, there is no real distinction between expenditures involved in maintaining resources and those involved in replacing them. Hence capital must be regarded as permanently maintained rather than periodically replaced.

[7] "On the Theory of Capital: A Rejoinder to Prof. Knight", *Econometrica*, 1938, p. 163.

On behalf of the Austrian theory it is contended that though there may be no distinction between permanent and non-permanent resources or between original and produced resources, there is still a distinction between what Mr. Kaldor calls 'augmentable' and 'non-augmentable' resources. On this basis we have to distinguish capital resources from non-capital resources. The significance of this distinction is that it explains interest as a distributive share, determined by the marginal productivity of capital, and that it also explains the relation between wages and interest. It is a known fact that an increase in the quantity of capital leads to a fall in the rate of interest. That is, capital too is subject to the law of diminishing returns. This law assumes the existence of a fixed factor with reference to which the law of diminishing returns operates. Thus the distinction between capital and non-capital resources is useful, though fundamentally there may be no difference between them. The fact that all living beings have the same characteristics is no reason why we should not distinguish between them as belonging to separate and distinct groups. The same holds true in the case of the distinction between capital and non-capital resources.

The notion of a factor of production and the orthodox classification of the factors of production no doubt bristle with difficulties and are highly unsatisfactory. Within each factor class, there must be a high degree of internal substitutability and a low degree of external substitutability. It is very doubtful if the orthodox classification satisfies this criterion, and very often the opposite is the case. The orthodox classification is unsatisfactory on technical grounds. To-day capital is identified with 'waiting', and there is the new

factor 'enterprise'. These two are not technical factors of production. The orthodox classification cannot be defended on distributional grounds too. It is not a perfect scheme to explain the classification of incomes in society. There is no identical relationship of a factor to its income in the case of all the four factor classes. Moreover it utterly fails to explain the economic cleavage and conflict among the income-receivers of society.

Hence we must either formulate an alternative scheme of factor-classification, or, if we cannot do this, we must totally abandon the notion of a factor-class and talk in terms of mere factor units. But unfortunately it is well-nigh impossible to present an alternative classification. On grounds of substitutability the factor classes will be so many as to lose all significance. There is also a great variety of non-competing groups. Moreover any factor-classification may have no permanent validity since economic conditions change very frequently. And we cannot abandon the notion of a factor class, for in spite of its many drawbacks, it has a certain usefulness. It is a useful tool in analysing and exposing economic phenomena, especially that of the division of incomes in society. The orthodox classification has survived in economic theory for two reasons. First, the conservatism of economists which makes them loath to abandon it; secondly, the four-fold classification has an æsthetic value.

We shall therefore admit the distinction between capital goods and non-capital goods. Granted this, we shall see whether the concept of the production-period has any meaning and how far it is relevant.

In the first place, the fact that capital goods are produced with the aid of capital as well as non-capital

goods, and not merely by non-capital goods, invalidates the concept of the period of production. If the services of capital goods aid the production of other capital goods in endless succession, the period of production becomes infinite. Hence the concept is meaningless when applied to a single investment, that is, in the production of one consumption good. The concept has no significance even for the productive system as a whole for certain dynamic reasons to be discussed below.

Secondly, as pointed out above, there is no distinction between maintenance and replacement expenditures on capital. Part of the output of capital goes to co-operate in its own replacement. Hence "Capital must be treated as perpetually maintained rather than periodically worn out and reproduced except where one's interest is in the life-history of some particular unit, taking the rest of the system as given".[8] In replacement too there is the co-operation between capital and non-capital resources. Hence the production-period becomes indeterminate.

Economists who talk of the average period of production do not make it clear whether they conceive of the period of production *ex-post* or *ex-ante*.[9] That is, the average production-period may look to the past or future. If it refers to the past, it is the time lapsing between the beginning and end of the processes by which the present output of consumption goods has been produced. This is *ex-post*. If it refers to the future, it is the average period lapsing between the

[8] Knight, "On the Theory of Capital: In Reply to Mr. Kaldor", *Econometrica*, 1938, p. 68.

[9] Detailed explanation of *ex-ante* and *ex-post* concepts will be given in Chapter IX.

application of present labour and the completion of its final product. This is *ex-ante*. Obviously it is in the *ex-ante* sense that the concept of the period of production is relevant to the theory of interest. (Of course in a world of stationary equilibrium the distinction between the *ex-post* and *ex-ante* magnitudes is not important.) An increase in the *ex-ante* or anticipated period always will be followed by an increase in the *ex-post* or completed period of production. (But the real world is dynamic. Hence anticipations will not always be realised.) There may be no correspondence between the *ex-ante* period of production and the *ex-post* period. In fact they may move in opposite ways.) At the beginning of a depression, the *ex-ante* period may be short, but the completed period of production may be actually longer.

Because of the fact that the economic world is dynamic, the measurement of the investment period presents numerous difficulties. There is no one period of production for all branches of industry.) The ratio of total capital value to annual maintenance and replacement cost gives some measure of the investment period. (But this presupposes the existence of a definite rate of interest, and the prevalence of perfect foresight and other stationary conditions. (The period varies with changes in the rate of interest. The period depends upon the level of employment, that is, upon the particular phase of the trade cycle.)

(Again, it is difficult to measure the functional relationship between the quantity of capital and the period of production.) The quantity or value of capital embodied in any productive instrument is the aggregate net present worth of the value of all the services which it will render in the future years. (To determine

this value, we must have all the data regarding the future. We must know clearly the future history of the investment. We must know beforehand the prevailing rate of interest and the level of prices. Again, two capital assets of different periods of production may have the same present worth on account of their different rates of yield or on account of different quantities of resources tied up per unit of time.

The Austrian theory is wrong in asserting that the sole function of the rate of interest is to diminish or to lengthen the average period of production. It is argued by the Austrian economists that a fall (or rise) in the rate of interest leads to a lengthening (or shortening) of the period of production. An increase or decrease in the quantity of capital is said to have similar effects. This may be true in certain cases, but it is not universal. A lowering of the rate of interest might increase the total volume of production without any lengthening of the average period of production. Capital is a quantity of two dimensions, namely, the quantity or value of resources tied up in it, and time during which they are tied up, which is the period of production. The error of the Austrian theory is that it stresses the time-dimension at the expense of the quantity-dimension. A lowering of the rate of interest means that investments whose expected yield was lower than the previous rate of interest now become worthwhile undertaking. But the new investments need not imply a longer production-process.

The Austrian theory does not pay attention to the influence of inventions, which, in many cases, shorten the average production-period. Inventions also make some of the investments obsolete, and thus falsify anticipations.

The concept of the period of production has been widely made use of in the analysis of the trade cycle by the monetary overinvestment theorists like Professors Hayek, Mises and Röpke. These economists argue that an expansion of credit initiated by, say, lowering the money-rate of interest relatively to the 'natural' or 'equilibrium' rate leads to a maldistribution of resources and a distortion in the capitalistic structure of production. With a lower rate of interest resources will be devoted more and more to the production of intermediate goods, and the vertical structure of production will be elongated farther than it can be permanently maintained. A greater amount of capital will be used per unit of output of consumption goods. This will alter the relative supply of consumption and production goods. The supply of consumption goods will become scarcer in relation to demand, while the contrary will happen in the case of production goods. The prices of the former rise and those of the latter fall. The result will be a slump in the production goods industry, and this will spread to the entire industrial field. But this explanation is defective in paying too much attention to the time-dimension of capital. As Prof. Knight says, "One might cross out such expressions as 'increased roundaboutness' or 'lengthening of the production-period' and substitute 'increase in the amount of capital' or 'further investment' (*Ceteris paribus*) without seriously affecting the argument"[10] of the Austrian theory.

Enough has been said to show that the concept of the period of production is beset with many difficulties. The concept is not entirely meaningless, but the

[10] Knight, *op. cit.*, p. 64.

difficulties relate to the measurability of the period. The concept is tenable only under the assumption of perfect foresight and other static conditions, which are far removed from reality. Yet the concept is not entirely worthless, since an understanding of economic phenomena in a stationary state goes a long way in helping one to understand dynamic changes of economic phenomena. If it is possible to give an index to the degree of roundaboutness, it can be demonstrated that an increase in capital associated with a lower rate of interest leads to the adoption of more roundabout processes. But "there can be no doubt that for an analysis of dynamic problems—and especially of the *par excellence* dynamic problem of the trade cycle the investment-period concept could hardly be of any use."[11]

[11] Kaldor, "Annual Survey of Economic Theory: The Recent Controversy on the Theory of Capital", *Econometrica*, 1937, p. 233.

CHAPTER IX

THE MONETARY THEORIES OF INTEREST

In an earlier chapter we have made reference to the fact that the theory of interest has given rise to two distinct schools of thought, namely, the 'real capital' (or 'pure') and the monetary theories of the rate of interest. Hitherto we have examined the 'real capital' theories, according to which the rate of interest is determined by the marginal productivity of capital in a technological sense and by psychological factors like abstinence or time-preference. These theories attach little significance to money in the determination of the rate of interest. They are too much occupied with 'real' economics. But the monetary theories of interest regard 'interest' as essentially a monetary problem. The monetary theories are less concerned with the cause of the existence of interest than with the determination of the rate of interest. We have already seen how productivity of capital is the most important cause of the existence of interest. But productivity does not explain the rate of interest. The monetary theories regard the rate of interest as essentially a money-rate and its determination purely a monetary phenomenon.

In the chapter on the classical theory of interest, we have dealt at length with the shortcomings of the 'real' approach to the problems of economics, especially that of the rate of interest. A brief recapitulation of

them will help us to understand better the monetary approach.

For a very long time, until practically the end of the nineteenth century, economists were too much occupied with the 'real' economics of an economy that is essentially monetary. They held the view that there was very little connection between what is usually taught as Monetary Theory and the General Theory of Prices (or Value). Money was only a 'veil' which hid the true relationships of the economy. The quantity of money had no influence on relative prices and the quantities of goods produced. Relative prices were governed by demand and supply. In this connection marginal utility, marginal cost, elasticity of substitution and similar concepts played an important part. The traditional theorists made use of monetary theory only to explain the transition from relative prices to absolute prices. For this purpose they constructed the Quantity Theory of Money, and made use of concepts like "Velocity of Circulation", "Exchange Value of Money" and "Inflation". But there was absolutely no relation between these concepts and the earlier concepts of marginal utility and elasticity of substitution, which were entirely absent in Monetary Theory. It is a false assumption that the quantity of money has no influence on relative prices, and the quantities of goods produced and exchanged. If, as the traditional theory assumed it to be, spending power at the disposal of the spenders is created by the process of production of other commodities, incomes are determined by the value of marginal net products, and the quantity of money has no effect on relative prices, and general disequilibrium cannot arise. But if it is possible to vary the spending power of individuals by the creation of credit by banks

or by the issue of fresh notes by the state or its agent, the Central Bank, there is now created some spending power which is not the result of the production of any commodities at all. The new incomes create an additional demand for goods, and this by affecting relative prices gives a stimulus to production of commodities. The classical economists could not correctly understand the effects of changes in the supply of money. They were too much occupied with the idea of 'Value of Money' or changes in the general price-level.

Again, there was very little connection between the rate of interest as determined by 'real' factors like the marginal productivity of capital, and the rate of interest presented in treatises on money and banking. There was no unity of approach even within the Monetary Theory itself. 'The exchange value of money' was defined as the reciprocal of the general price-level. The term 'price of money' was used to designate the rate of interest on short-term loans. There was no attempt to co-ordinate these several views at all.

The classical economists were mainly concerned with static equilibrium. They ruled out all uncertainty and expectations from their analysis. That is why they took into account only the first two functions of money, namely, the medium of exchange and the standard of value, and neglected the third and most important function, namely, that of the store of value. The function of money as a store of value obviously refers to intertemporal contracts, and naturally the timeless static theory of the classical economists could not make this an integral part of their analysis.

The classical economists did not develop a theory of output as a whole. They were mainly concerned with

the analysis of particular equilibrium. They did not pay attention to the repercussions of changes in the supply of and demand for one commodity on the price system as a whole.

The classical economists accepted Say's dictum (the enunciation of which owes much to James Mill) that supply creates its own demand. So general over-production was impossible. Say's Law of Markets may be expressed as follows. Exchange is a two-sided process. Hence, it is to be viewed as a series of transactions between two sets of producers, each of them bartering its product against the others. Thus Ricardo said, "No man produces but with a view to consume or sell, and he never sells but with an intention to purchase some other commodity, which may be immediately useful to him, or which may contribute to future production. By producing, then, he necessarily becomes either the consumer of his own goods, or the purchaser and consumer of the goods of some other person."[1] All individual supplies and demands are equal, and consequently aggregate supply and demand are equal. There may be a disparity between the demand for and supply of particular commodities, but this disparity would soon be corrected by appropriate changes in the price of that commodity. But general over-production was impossible. In other words, Say's Law means that aggregate costs of production are always spent in purchasing the aggregate product, *i.e.*, aggregate demand price and aggregate supply are always equal. Incidentally Say's Law is equivalent to the assumption of 'full' employment. Production will be expanded until the supply price is equal to the demand price.

[1] *Principles of Political Economy and Taxation*, p. 174.

But supply cannot be increased beyond the point at which the supply of output as a whole has become quite inelastic. Competition would increase production up to this point. (It follows from Say's Law that every individual spends his income on consumption, and that whatever he saves he immediately invests the whole of it.) That is why the classical economists held the view that every act of individual saving led to a corresponding increase in the aggregate saving of the community. The whole economic system was supposed to be self-adjusting. (For the same reasons, the classical economists held that capital accumulation could never be in excess of the use to which it could be put.)

(The classical theory was thus wrong in neglecting the aggregate demand function. The propensity to consume is an independent variable, and it determines, in conjunction with the amount of investment the level of aggregate incomes. Corresponding to a given amount of investment the level of income and thus the amount of employment is higher the greater is the propensity to consume out of a given income. Thus a low propensity to consume is very often a formidable obstacle to the attainment of 'full' employment by the community.)

(These were some of the shortcomings of the 'real' approach to economic theory. The traditional economists thus created a false division between the Theory of Value and Distribution and the Theory of Money. Economists like Marshall were aware that the monetary factor could create disturbances in the economy. They, therefore, overcame the difficulty by assuming the existence of monetary stability. But this is an unreal assumption. The actual world is dynamic, full of uncertainties. It is precisely because of the existence of

uncertainties that money becomes important as a store of value. Hence static equilibrium and money are incompatible, for in such an economy there is no difference between money and debts. Because of its static character, the traditional analysis could not explain the occurrence of such dynamic phenomena like the trade cycle and unemployment. Now we must trace the history of the attempt to co-ordinate the theories of value and money. Many earlier economists like Bentham, Thornton, Malthus and Marx criticised many postulates of the classical theory, especially Say's Law that supply creates its own demand. In the writings of these economists are to be found many modern ideas on capital, money and interest. But these attempts were not systematically co-ordinated.

There were two circumstances which paved the way for the co-ordination of the theory of value and the theory of money, namely the cash-balance analysis and the capital analysis. Both these took the time-factor into consideration and built a dynamic theory attaching due importance to the role of expectations and uncertainties in the determination of current prices, output and employment.

The cash-balance analysis explained the demand for money as an integral part of economic theory. What monetary theory had not explained so far was why people desire to hold a part of their wealth in the form of idle money (which earns no income at all) rather than invest it in income-bearing assets. Traditional theory was pre-occupied with the notion of value of money. The explanation of the demand for cash-balance, *i.e.*, the desire to hold wealth in the form of money is *par excellence* the monetary problem. The first important economist to explain the desire for

cash-holdings was Leon Walras. Since then greater and greater attention is being paid by economists to this problem.

In explaining the demand for cash-balances, economists for the first time made use of the marginal utility analysis in the sphere of monetary theory. It was realised that money too possessed marginal utility like any other commodity. Now marginal utility is nothing but a choice between alternatives. The desire to hold money is an alternative to holding assets. The holder of wealth is always anxious to obtain the best advantage from the possession of wealth. So he distributes his wealth between the holding of money and the holding of assets in such a proportion as to equalise their marginal utilities. So the desire to hold money is dependent upon other economic variables such as the prices of assets, state of expectations regarding the future.

The most important single cause for the demand for money or cash-balances is the presence of uncertainty regarding the course of future prices of assets and commodities. Our knowledge of the future events is imperfect. Our expectations regarding the future are invariably surrounded by a penumbra of doubt. As Mr. Keynes puts it, "Our desire to hold money as a store of wealth is a barometer of the degree of our distrust of our own calculations concerning the future. ..... The possession of actual money lulls our disquietude."[2] Money is a very safe means of exchange and it has future saleability. That is, it possesses high liquidity. The possession of money involves negligible carrying costs. Apart from the motive of

[2] "The General Theory of Employment", *Quarterly Journal of Economics*, Feb. 1937, p. 216.

security there is the speculative motive which creates a large demand for cash holdings. People may desire to hold money with the expectation of a fall in the prices of goods and securities. Hence, *cet. par.*, the demand for money varies directly with the degree of uncertainty.[3]

There are a few other reasons for the keeping of idle cash. Generally, investments for relatively short periods are not made because of such costs as brokerage and stamp duties. These costs are relatively large in comparison with the yield expected from such investments. Also a lot of trouble is involved in such short-period investments.

The importance of the holding of cash-balances lies in the fact that the relative preferences of individuals to hold money or securities determine the price-level of investment goods. Thus an unduly high preference to hold money may create a slump in investment-goods industries, and this slump may (and often will) spread to the other industries. The cash-balance approach brings together the theories of money and price. At the same time it indicates the incompatibility of money and static equilibrium.

Knut Wicksell may be said to be the first economist to make real progress in the unification of the theories of value and money. This task was (and is) pursued

[3] However, as Mr. Lachmann has pointed out (in *Economica*, Aug. 1937), there are two exceptions to this statement. The first is that when the future of the currency is in danger or when there is a flight from the currency, the demand for money diminishes and people exchange cash for illiquid goods like articles of consumption, clothing, jewellery and furniture. Secondly, people may desire to hold cash because they are certain that prices will fall in the near future. The first exception is an abnormal situation and the second is unusual. Hence they do not diminish the importance of uncertainty in determining the demand for cash-balances.

by his critics like Davidson and Cassel and followers like Hayek, Lindhal, Myrdal, Ohlin, Mises, Keynes, Robertson and Hawtrey.

Wicksell abandons Say's Law of Markets and attempts to construct a theory of output as a whole. He develops the thesis that just as a change in the price of a single commodity is due to a change in the relation between the supply of and demand for it, the same must be true in the case of a change in the general commodity price-level. Thus, a rise in the general price-level means that the demand for all commodities taken together has risen relatively to their supply. This thesis is explained by Wicksell through an analysis of saving and investment. According to him the four elements of equilibrium are (*a*) demand for consumption goods, (*b*) production of consumption goods, (*c*) saving, and (*d*) investment in real capital. The amount of consumption goods produced is directly governed by the amount of income people spend on consumption; but the amount of investment is not directly governed by that part of income which people save. The key governing this equilibrium is the rate of interest. In analysing the conditions of equilibrium Wicksell brings in the theory of money and credit. In the actual world money and credit play an important part in determining the volume of output and employment. Wicksell holds the view that an increase in the quantity of money, while raising the general price-level also increases production, especially the production of capital goods. This happens for two reasons. In the first instance, the demand for all commodities increases, and immediately prices rise. So the entrepreneurs earn greater profits. Also the money rate of interest falls owing to the increase in the quantity of money. Hence

production of all goods, and in particular that of capital goods, increases.

Another very important contribution of Wicksell is his theory of the relation between the rate of interest and the general price-level. According to Wicksell, the condition of equilibrium is that the 'normal' rate of interest and the money or market rate of interest should be equal. Wicksell's 'normal' rate is supposed to do three functions. In the first place, it is the marginal yield on real capital determined by the round-about process of production. Secondly, it is the rate which equates the supply of and demand for savings. Thirdly, it is the rate which stabilises the general price-level. We shall discuss later whether these three conditions of equilibrium are identical. What we should emphasise here is that, according to Wicksell, any divergence between the 'normal' and money rates of interest would lead to a cumulative process of production and prices. Thus, if the money rate of interest was kept lower than the 'normal' rate for a sufficient length of time, a cumulative expansionist process would set in, and the general price-level would rise until such time that the two rates become identical. Similarly, if the money rate were kept above the 'normal' rate, then a continual downward pressure would be exerted on prices and production.

Thus Wicksell attempted to co-ordinate 'real' economics and monetary economics. But his efforts were not completely successful. For, while his theory of money was dynamic, his theory of value was essentially static. He assumed constant prices and perfect foresight. Complete co-ordination between the theories of money and price is possible only when both the theories are dynamic. Wicksell was a strong

adherent of the view that, to begin with, the essen problems of production and consumption should be kept separate from the purely monetary problem. He attached equal importance to the 'real' as well as the monetary aspects of the economy. That is why he refused to accept the view that the trade cycle is essentially a monetary phenomenon.

So far we have only stressed the tremendous importance of money in the modern economy, and we have pleaded for the co-ordination of the theories of value and money. Let us study in greater detail the impact of this on the theory of interest.

In the earlier chapters, we have rejected the 'real' theories of interest on the ground that they do not explain how the rate of interest is determined. Now we shall examine whether the monetary theories offer a satisfactory solution of the interest problem. We have already made out a case for regarding interest as a money-premium over money lent. Here we shall dwell at length on the monetary approach.

The monetary approach to the theory of interest has produced two rival theories. One is the 'Loanable Fund' theory, and the other is the 'cash-balance' or 'liquidity preference' theory. The difference of opinion between the two theories rests on this: "Is the rate of interest determined by the supply of and demand for loanable funds (or credit or claims)? Or, is it determined by the supply of and demand for money itself?" The former view is held by Prof. Bertil Ohlin and his group of Swedish economists, and by Professors Robertson and Hicks, and many others. The latter view is held by Mr. J. M. Keynes and his followers. Most of the writers of the 'Loanable Fund' theory believe that Mr. Keynes's theory is on the whole the

same as theirs, whereas Mr. Keynes holds the view that the two theories are "radically opposed to one another."[4]

Both the schools of thought have many things in common. Both of them aim at constructing a theory of output as a whole. Their analysis runs mainly in monetary terms instead of in 'real' terms. Both the schools reject the view of the classical economists that the rate of interest is "determined by the condition that it equalises the supply of and the demand for savings, or, in other words, equalises savings and investment".[5]

But it should not be presumed that both the schools hold that saving is always equal to investment. According to the 'Loanable Fund' theories there can be a difference between saving and investment, and in this connection they make use of a period analysis. On the contrary Mr. Keynes maintains that saving and investment are always equal. But, as we will point out, there is no real difference of opinion between the two views.

The 'Loanable Fund' theory of interest represents the first step in the transition from the classical theory to the modern theory. Economists of this school recognise that hoarding, dishoarding and changes in the amount of money have something to do with the supply of credit and the rate of interest. They base their theory of interest on a thorough analysis of the concepts of saving and investment. Unlike Mr. Keynes, they do not maintain that saving is always equal to

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[4] J. M. Keynes, "Alternative Theories of the Rate of Interest", *Economic Journal*, 1937, p. 241.

[5] Bertil Ohlin, "Some Notes on the Stockholm Theory of Savings and Investment: II", *Economic Journal*, 1937, p. 221.

investment. They admit both the possibilities of saving being equal to investment, and saving and investment being unequal. In this connection they adopt a period analysis. Here we have two slightly different versions of it. One is the version developed by Prof. Robertson, and the other is the *ex-post* and *ex-ante* analysis of the Swedish economists. Mr. Hawtrey too develops a similar scheme. Since these schemes of analysis are practically the same, it is enough if we study any one of them. We shall take the analysis of the Swedish school into consideration.

The Swedish economists look upon economic variables like income, saving and investment in a double sense, namely, *ex-post* and *ex-ante*. *Ex-post* refers to the past, and *ex-ante* refers to the future. Looking back over a period of time that has just elapsed, it is possible to measure correctly what income, saving and investment are. This is an *ex-post* account of the magnitudes. It is a retrospective or a book-keeping view. The *ex-post* account gives us a direct knowledge of the actual conditions at present, such as the supply of capital goods and commodity stocks, and the nature of existing contracts. An *ex-post* knowledge influences expectations regarding the future course of events. The Swedish school too holds the view that, *ex-post*, saving and investment are equal.

Now we must study the course of expectations regarding the future period, because in the actual business world, these expectations play an important role in determining current prices and production. This type of forward-looking analysis is called *ex-ante*. The entrepreneur has certain expectations regarding the future events, such as prices, costs and rates of interest. In addition to these expectations, he possesses

certain knowledge regarding his productive capacity, contracts, etc. On the basis of these he constructs certain plans regarding his investments during the next period, and carries them out. These plans are based on the expected rate of profits and the rate of interest. Similarly, the production of consumers' goods is planned, taking into account the consumers' plans and preferences. In the same way consumers also plan during the coming period to spend so much on consumption and to save so much. Their plans too depend upon their expected incomes, prices of consumption goods, and future needs. Taking all these into consideration for the economy as a whole, we get the *ex-ante* or planned magnitudes of income, consumption, saving and investment. These *ex-ante* magnitudes refer to schedules. For example, the schedule of *ex-ante* saving shows the amounts that people choose to save at different hypothetical rates of interest.

According to the Swedish school, it ought not to be assumed that planned saving and planned investment should be equal. But at the end of the planned period, *i.e., ex-post,* they are equal. The way in which this equality comes about is "that the inequality of planned saving and planned investment sets in motion a process which makes realised income differ from expected income, realised savings from planned savings, and realised new investment differ from the corresponding plan. These differences we can call *Unexpected* income, *Unexpected* new investment and *Unintentional* savings."[6] And it must be noted that an expansionist process is possible "even if planned savings and planned investment should happen to be equal. The only thing

[6] Bertil Ohlin, "Some Notes on the Stockholm Theory of Saving and Investment: I", *Economic Journal,* 1937, pp. 64–5.

then required is that expected incomes grow, and that consequently consumers increase their purchases."[7]

The length of the period chosen varies with different economists. For instance, Prof. Robertson's 'day' is such that during this period the money income received cannot be spent within the same period. Prof. Ohlin's period is so chosen that no alteration will be made in the plan by the entrepreneur till the beginning of the next period.

This analysis of saving and investment leads us to the 'Loanable Fund' theory of interest. This theory too rejects the view that the rate of interest is determined by the condition that it brings about the equality between saving and investment. "There is no such market for savings and no price for savings,"[8] though there is a supply curve for savings and a demand curve for savings.

According to this school, "the rate of interest is simply the price of credit, and it is therefore governed by the supply of and demand for credit"[9] or claims or loans. There is a demand curve or schedule for credit, and also a supply curve for credit, and the rate of interest is determined at the point of intersection of these two curves. These two curves are, of course, *ex-ante* concepts, and refer to a period of time. The demand curve for loanable funds has close affinity with the curve of marginal productivity of capital. This curve normally slopes downward from the left to the right, indicating that as the rate of interest falls, more funds will be demanded by entrepreneurs for investment. The supply of loanable funds comes from three

[7] Bertil Ohlin, "Some Notes on the Stockholm Theory of Saving and Investment: I", *Economic Journal*, 1937, p. 66.

[8] Bertil Ohlin, "Alternative Theories of the Rate of Interest", *Economic Journal*, 1937, p. 424.

[9] Bertil Ohlin, "Some Notes .... etc.", p. 221.

sources, namely, amortisation quotas, new savings and 'inflation' which includes not only newly created bank money but also dishoarding of cash. Generally the supply curve of loanable funds rises upwards from left to right. Of course, it is difficult to state precisely the elasticity of this curve. Sometimes it is elastic and at other times it is inelastic. That is why, very often an increase in demand for funds results not in an increase in supply but in a rise in the rate of interest. We may note that normally the amount saved from current income is largely insensitive to changes in the rate of interest, at least in the short period. But the supply of funds created by 'inflation' is elastic.

It is necessary to emphasise that the supply and demand curves for loanable funds are related to the curves of *ex-ante* saving and investment. But the two pairs of curves are not identical. For instance, the supply of loans may be greater or less than planned savings, according as the quantity of the cash-holdings of the savers is diminished or increased. Similarly, the demand for loans may not be equal to planned investment, for the entrepreneurs may vary their cash-holdings. In short, all that is saved need not be lent, and all that is lent need not be invested. Thus, this theory too attaches great importance to the desire for cash-holdings.

The 'Loanable Fund' theory may be expressed most precisely in Mr. Lerner's words. "The rate of interest is the price that equates the supply of 'credit', or saving plus net increase in the amount of money in a period, to the demand for 'credit', or investment plus net hoarding in the period."[10]

10 "Alternative Formulations of the Theory of Interest", *Economic Journal*, 1938, p. 213.

Now we shall describe Mr. Keynes's theory. As we have already seen, he holds that irrespective of any rate of interest, saving and investment are always equal. Of course, this must be *ex-post*. In fact, the classical theory too held that saving was always equal to investment. In stating the equality of saving and investment Keynes is "returning to old-fashioned orthodoxy".[11] The novelty in Mr. Keynes's theory lies in his contention that it is not the rate of interest but the level of incomes which ensures the equality between saving and investment. If the rate of interest is not determined by the demand for and supply of saving, then how is it determined at all? Perhaps it is determined by the marginal productivity of capital. But Mr. Keynes rejects this view as it leads to circular reasoning.

Mr. Keynes offers a solution. The fault of the traditional theory was that it did not pay attention to the point, "in what form is the unconsumed part of income going to be held?". Will it be held in the form of money or in the form of securities or debts? Mr. Keynes pays most attention to this point. In doing so, he draws his inspiration from the Mercantilists. According to Mr. Keynes, interest is simply the premium obtainable on current cash over deferred cash. It is not the price or reward for saving or 'not spending', but it is the payment for lending money; it is the reward for 'not hoarding' or the reward for parting with 'liquidity' for a specified period. "It is a measure of the unwillingness of those who possess money to part with their liquid control over it ..... It is the 'price' which equilibrates the desire to hold

[11] Keynes, "Alternative Theories, etc.", *Economic Journal*, 1937, p. 249.

wealth in the form of cash with the available quantity of cash."[12] But as Professors Robertson and Viner have pointed out, this definition of interest does not exclude the previous definition. Without saving there can be no liquidity to surrender. Hence interest is the return for saving without liquidity. That is to say, it is a reward both for not-spending and for not-hoarding. However, it is a different matter in the case of banks which lend money which is not, often, the result of saving at all.

The monetary theories of interest are less concerned with the origin of interest than with the forces determining the level of and the fluctuations in the rate of interest. The only cause for the payment of interest is the opportunity of making a gain with the use of money borrowed.

According to Mr. Keynes, the independent variables determining the rate of interest are two, namely, liquidity-preference and the quantity of money. In this context money may be taken as co-extensive with bank-deposits. Hence the total quantity of money is a heterogeneous mixture of cash and bank-deposits of various kinds. Thus the quantity of money is a known term depending upon banking policy. It constitutes the supply of money.

Liquidity-preference is nothing but the demand for money. The schedule of liquidity-preference shows the amounts of money an individual will desire to hold at different rates of interest. Mr. Keynes holds that the liquidity-preference curve slopes downward from left to right. That is, the rate of interest falls as the quantity of money is increased. The rate of interest

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[12] Keynes, *General Theory*, p. 167.

is determined at that level where the demand for money is equal to the supply of money. The same might be expressed in a different way. The supply of money depends upon the liquidity-preference of the banks. The demand for money depends upon the liquidity-preference of the public. Hence we may say that the rate of interest is determined by the interplay of the terms on which the public desires to become more or less liquid and those on which the banking system is ready to become more or less illiquid.

Mr. Keynes enumerates three motives for liquidity-preference:

(1) *The transactions-motive.*—A certain amount of cash is always necessary for personal and business exchanges. There is always a time-lag between the receipt and the disposal of income by the public. In the case of entrepreneurs, the amount of money required for transactions purposes consists of two parts. One is the active business deposits to meet costs during the time-lag between the receipts of their sale, and the payment by them of wages and other costs. Another source of demand for money is due to the time-lag between the inception and the execution of entrepreneurial decisions. This is the financial deposits or what Mr. Keynes calls 'finance'. Entrepreneurs accumulate cash-balances for outlays in the future. This need for cash is the result of the *ex-ante* character of investment decisions. This temporary demand for money is quite distinct from the demand for active balances which will arise when the investment is actually being executed. Between the two kinds of deposits for transaction purposes, the active business deposits are larger in volume. Financial deposits are relatively small in volume, but have a very high velocity.

That is why Mr. Keynes regards 'finance' as a revolving fund. Hence the total quantity of money required for transactions purposes depends upon the level of business activity, the level of money income, and the volume of 'planned' investment.

(2) *The precautionary motive.*—Cash is needed "to provide for contingencies requiring sudden expenditure and for unforeseen opportunities of advantageous purchases, and also to hold an asset of which the value is fixed in terms of money".[13] The first part of this sentence is vague; but the second contains the truth. Money is the commodity which possesses debt-discharging quality.

(3) *The speculative-motive.*—This is by far the most important motive for liquidity-preference. The reason for this motive is the existence of a special kind of uncertainty—uncertainty regarding the future course of rates of interest, which, according to Mr. Keynes, "is the sole intelligible explanation of the type of liquidity-preference"[14] mentioned here. "If the rates of interest ruling at all future times could be foreseen with certainty, all future rates of interest could be inferred from the *present* rates of interest for debts of different maturities, which would be adjusted to the knowledge of the future rates."[15] It is on account of the element of uncertainty that speculators desire cash-holdings with "the object of securing profit from knowing better than the market what the future will bring forth"[16] and also with the object of avoiding

[13] Keynes, *General Theory*, p. 196.
[14] *Ibid.*, p. 201.
[15] *Ibid.*, p. 168.
[16] *Ibid.*, p. 170.

capital-loss. Liquidity-preference due to the speculative motive is a highly psychological phenomenon.

Thus the total demand for money (M) is made up of two parts. One part of it (M_1) consists of the amount required to satisfy the transactions and precautionary motives. This is the active money. The liquidity-function of M_1 varies with the general business activity and the level of money income, but it is very insensitive to changes in the rate of interest. The second part (M_2) is the amount required to satisfy the speculative-motive. It is the inactive or idle or hoarded money. The liquidity-preference for M_2 may be called 'liquidity-preference proper'. Mr. Keynes does not clearly distinguish between liquidity-preference in the wider sense of the total demand for money ($M_1 + M_2$) and 'liquidity-preference proper'. Sometimes he uses it in the wider sense and sometimes in the narrower one. But his main emphasis is on the 'liquidity-preference proper'.

The liquidity-preference curve proper is very sensitive to changes in the rate of interest and expectations regarding the future course of the rates. M_2 is negatively correlated with the rate of interest, and M_2 has a greater negative correlation with the rate of interest than has M, the total quantity of money. It is because of the high degree of sensitiveness of M_2 to the rate of interest that monetary management can influence economic activity either through 'open market operations' or by discount-rate policy.

Mr. Keynes attaches very great importance to liquidity-preference as a determinant of the volume of investment and employment. The schedule of liquidity-preference might often negate the efforts of the monetary authority to increase the rate of investment.

Thus, an increase in the quantity of money may not cause the rate of interest to fall (and thus stimulate investment), for it may so happen that the increase in the quantity of money might create a high degree of uncertainty regarding the future and thus strengthen the liquidity-preference of the investing public. Conversely, liquidity-preference may be the author of recovery. Certainty and optimism regarding the future, by lowering liquidity-preference may encourage investment, especially long-term investment.) The success of any policy of monetary management depends upon the existence of a variety of opinion regarding what is uncertain in the future. In other words, the success of capitalism itself depends on the policy of divide and rule.

So much for Mr. Keynes's theory of interest just at present. In his theory the quantity of cash and the state of long-term expectations occupy a central place. It is this feature that gives a sense of realism to his theory of interest.

Now that we have stated the two theories of the monetary approach, let us examine the criticisms levelled against each other. This will enable us to judge whether the theories are fundamentally different or practically the same.

Mr. Keynes believes that the 'Loanable Fund' theory is precisely the same as the classical theory of interest. He argues that the net supply of credit is nothing but the quantity of saving, and the net demand for credit is the same as the quantity of net investment. Mr. Keynes therefore regards the 'Loanable Fund' theory as implying that the rate of interest is determined by the condition that it equates the demand for saving to the supply of saving. But this criticism of

Mr. Keynes is not correct because he does not distinguish clearly between the *ex-post* and the *ex-ante* phenomena. Saving and investment are equal *ex-post* but not *ex-ante*. The *ex-post* equality between saving and investment "does not prove that the price of credit cannot be determined by the condition that in a free market supply and demand at this price is made equal".[17] Prof. Ohlin gives an instance to prove this. If in an authoritarian state the rate of interest is fixed below the rate of interest that would prevail in a free market, then *ex-post* saving and investment are no doubt equal, but the quantity of credit demanded is greater than the quantity offered, and rationing has to be resorted to. The equality of saving and investment is consistent with any rate of interest. But, "not so with credit. Given a certain willingness to grant and to take credit on the part of individuals, firms and banks, only one interest level is possible in a free market. The truth is that the price of 3 per cent. bonds—and thus the long-term rate of interest—is fixed on the bond market by the demand and supply curves in the same way as the price of eggs or strawberries on a village market".[18]

Mr. Keynes forgets that the 'Loanable Fund' theorists have made it clear that the curves relating to the demand for and supply of credit, and the curves relating to savings and investment are distinct. This is because of the importance of hoarding or the desire for holding cash. Moreover, the desire to vary cash holdings due to liquidity-preference is manifested in the supply and demand of credit, for it is only in the

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[17] Bertil Ohlin, "Alternative Theories of the Rate of Interest", *Economic Journal*, 1937, p. 423.

[18] *Ibid.*, p. 424.

market for credit that the exchange of claims and cash takes place.) The point is well expressed by Prof. Hicks: "For any short period, the difference between the value of the things an individual acquires (including money) must, apart from gifts, equal the change in his net debt—his borrowing and lending. The same will apply to a firm. If, therefore, the demand for every commodity and factor equals the supply, and if the demand for money equals the supply of money, it follows by mere arithmetic that the demand for loans must equal the supply of loans (when these latter are interpreted in a properly inclusive way)."[19]

Another point of controversy is how a rise in investment demand for funds (owing to a rise in the marginal efficiency of capital) affects the rate of interest. According to the 'Loanable Fund' theory, this would, *cet. par.*, raise the rate of interest. Mr. Keynes apparently seems to deny that such an increase in demand raises the rate of interest. He writes: "The schedule of the marginal efficiency of capital may be said to govern the terms on which loanable funds are demanded for the purpose of new investment; whilst the rate of interest governs the terms on which funds are being currently supplied."[20] This will be valid only if one of the two following assumptions is fulfilled, namely, that the liquidity-preference curve is perfectly elastic, the curve representing a horizontal line. For in that case, every increase in money will have no effect on the rate of interest; or that the monetary authority not only

[19] "Mr. Keynes's Theory of Employment", *Economic Journal*, 1936, p. 296.

[20] *General Theory*, p. 165.

possesses the power but also uses it to keep down the rate of interest to some level in face of an increased demand for funds. But Mr. Keynes does not believe in both the assumptions. He says that the liquidity-preference curve slopes downwards from left to right. He also denies the ability of the monetary authority to control the rate of interest thoroughly. In reality, Mr. Keynes admits that the "increased demand for money resulting from an increase in activity has a backwash which tends to raise the rate of interest; and this is indeed, a significant element in my theory of why booms carry within them seeds of their own destruction. But this is, essentially, a part of the liquidity theory of interest, and not of the orthodox theory".[21] It is thus: The entrepreneur may need more cash in anticipation of an increase in his future expenditure. Secondly, the additional money he has borrowed may all be spent on transactions, and this means that the quantity of money available for speculative purposes is diminished. So in either case the liquidity-preference has risen, and hence the rate of interest rises.

Moreover, there is another important factor which, owing to the rise in the marginal efficiency of capital, increases the demand for money. This is 'finance' of which we have already spoken. The discovery of 'finance' is an amendment of Mr. Keynes's theory.

It must be noted that the rate of interest rises only if the supply of money is not increased either by banks or by dishoarding by the public at the current rate of interest. Usually the supply of money in the short period is inelastic and this will lead to a rise in

[21] Keynes, "The General Theory of Employment", *Quarterly Journal of Economics*, February 1937, p. 210.

the rate of interest. But if the supply of money is actually increased, the rate of interest will not go up. In this case the increased supply of money by the banks would mean, according to Mr. Keynes, that the banks are willing to become more illiquid. This would cancel the effect of the rise in the liquidity-preference of the public. Dishoarding by a part of the public would mean the same.

Thus Mr. Keynes does not deny the fact that a rise in the marginal efficiency of capital has a tendency to raise the rate of interest. But this is far from admitting, as Prof. Robertson holds, that the rate of interest is actually determined by the marginal productivity of capital. In the first place, it is not the current marginal productivity (as the classical theory implied), but it is the rise in the anticipated marginal productivity or what Mr. Keynes calls the marginal efficiency of capital that raises the rate of interest. Moreover, the classical theory did not explain the causal route through which the rate of interest is affected. Mr. Keynes furnishes the answer to this. The rate of interest rises owing to the increase in the liquidity-preference of the entrepreneurs. And the rate of interest does not always rise. It is only when the monetary authority does not respond quickly to the increased demand for credit that the rate rises. If the monetary authority is very responsive, then there will be no rise at all in the rate of interest.

The second important point we have to consider is the inter-relation between saving, liquidity-preference and the rate of interest. Let us study the effect of a rise in the propensity to save (a fall in the propensity to consume) on the rate of interest and the

amount of investment. This subject has been the topic of a long controversy between Mr. Keynes and Prof. Robertson. The outcome of this controversy is that both are agreed that the rate of interest varies inversely with the propensity to save. But their explanations of this consequence are different. The classical theory, as we have seen, assumed a constant level of aggregate income. An increase in the propensity to save, they argued, increases the aggregate quantity of saving in relation to aggregate investment. They made the further assumption that the increased saving would always be invested. Hence the quantity of saving is greater than the amount of investment. So the rate of interest falls and aggregate investment is increased. The 'Loanable Fund' theory would explain the same by saying that the rate of interest falls owing to an increase in the supply of credit relative to the demand for it. Mr. Keynes does not accept this explanation. If, as the classical and the 'Loanable Fund' theorists hold, an increase in saving were always invested and the total money income remained constant, the rate of interest need not fall. For with the same income, liquidity-preference, or the demand for money as well as the supply of money have remained the same. That means the rate of interest too remains at the same level. Even if the increased saving is hoarded, instead of being spent on investment, the rate of interest remains the same. An increase in the quantity of saving diminishes aggregate incomes and thus diminishes the demand for money for active balances (M_1), while the demand for money for speculative purposes (M_2) increases by the same amount. Again, the total demand for money as well as the total supply

remain the same, so that the rate of interest too remains at the old level.

Mr. Keynes's explanation of the fall in the rate of interest is this. An increase in the propensity to save, which is not itself hoarding, diminishes aggregate income, and at the same time reduces the marginal efficiency of capital. Aggregate employment and income fall. That means the demand for active balances is lowered. That is, total demand for money falls. But the total quantity of money, which constitutes the supply of money, remains constant. Hence the rate of interest falls. So Mr. Keynes's conditions for the fall in the rate of interest are: (*i*) a fall in aggregate income and employment; (*ii*) the aggregate quantity of money must remain the same. As to the effect on investment, Mr. Keynes would not admit that the increased saving stimulates investment.

Thus, though there is agreement of opinion between Mr. Keynes and his opponents regarding the effect of a change in the propensity to save on the rate of interest, Mr. Keynes's theory is more satisfactory in that it indicates the causal route through which changes in the propensity to save affect the rate of interest.

Yet another important point we have to discuss here is the effect of an increase in the quantity of money on the rate of interest. The classical economists held that the primary effect of the increase in the quantity of money was to raise prices and not lower the rate of interest. This is a direct result of their assumption of 'full' employment. But Mr. Keynes holds that the primary effect of the increase in the quantity of money is to lower the rate of interest, the rise of prices being an ultimate consequence of

a change in the rate of interest. Mr. Keynes argues that the increase in the quantity of money will increase effective demand and employment. He therefore restates the quantity theory of money as follows: "So long as there is unemployment, *employment* will change in the same proportion as the quantity of money; and when there is full employment, *prices* will change in the same proportion as the quantity of money."[22] But he does not deny that in addition to the increase in employment the quantity of money will partly raise prices too.

According to Mr. Keynes, the increase in effective demand is brought about through the fall in the rate of interest. For, liquidity-preference remaining the same, an increase in the quantity of money must lower the rate of interest. At the lower rate of interest more money is held for transactions purposes, since the fall in the rate of interest increases investment and effective demand. More idle money too will be held because of the lower cost of holding money. Equilibrium will be established between the demand for and supply of money at the lower rate of interest. Mr. Keynes is aware of the fact that the actual increase in effective demand and employment due to an increase in the quantity of money depends upon such factors like the marginal efficiency of capital, homogeneity of productive resources, elasticity of supply of factors of production and the level of wages.

Mr. Keynes does not hold that the increase in the quantity of money always leads to a fall in the rate of interest. If the increase in the quantity of money causes uncertainty regarding the future level of prices

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[22] Keynes, *General Theory*, p. 296.

and interest-rates, liquidity-preference due to the security-motive rises and the rate of interest is not lowered at all. The volume of investment does not increase. The rate of interest loses its power as a regulator of investment. As Mr. Keynes says, "If, however, we are tempted to assert that money is the drink which stimulates the system to activity, we must remind ourselves that there may be several slips between the cup and the lip".[23] The 'Loanable Fund' theory would not probably deny all these repercussions of changes in the quantity of money.

Incidentally we might discuss another point. If every increase in the quantity of money brings down the rate of interest, is there no limit to the fall in the rate? Cannot the rate of interest reach the zero level? Mr. Keynes admits that there is a limit to the fall. If the rate of interest is 2 per cent. or below that the elasticity of demand for money becomes almost infinite. This is because of two reasons. In the first place, such a rate is considered to be lower than the 'safe' rate. In the second place, the earning of interest by parting with liquidity is not much. That is why Mr. Keynes regards the rate of interest as a highly conventional phenomenon, because it depends upon what the community thinks to be the 'safe' rate. Apart from this limit to the fall in the rate of interest, there are certain other reasons why the rate of interest cannot fall very low. In the first place, there are costs of banking. In the second place, a risk-premium has always to be paid for the loan of money. At very low rates of interest the demand for loans becomes infinite, especially for the buying of durable consumption

[23] *General Theory*, p. 173.

devoted to satisfying the whims of the rich people while the elementary needs of poor people go unsatisfied.

At present, we need not concern ourselves with the problem of distribution of the national income in a socialist society. Since property-incomes are absent in such an economy, and since the members of such an economy are entitled to an equal benefit from the productive activity, the national incomes will be more evenly distributed among the members, and there will be very little inequality of wealth and incomes. Hence we shall concentrate our attention on the problem of allocation of productive resources.

In the absence of a central planning authority, capitalism solves the problem of the allocation of resources between the several industries and occupations through the mechanism of a price system established by the forces of competitive and semi-competitive conditions. Price is the index of the supply and demand conditions. Equilibrium between demand and supply of a single good is brought about by appropriate changes in the prices of those goods. Similarly the allocation of resources between several industries is done by the level of relative prices. And the allocation of productive resources between the manufacture of consumption goods and the manufacture of capital goods is determined by the rate of interest. The amount of investment depends upon the marginal efficiency of capital in relation to the rate of interest. That is, the rate of interest has a second important function. It determines the distribution of resources between the several capital-good industries. It helps the entrepreneur to undertake those industries which are most profitable with the current rate of interest.

A socialist state too should solve the problem of the allocation of productive resources. If the socialist economy has to achieve the maximum efficiency in production, it must have a mechanism of pricing, which is the indicator of the conditions of demand and supply. At present, we shall be content with studying the factors that determine the allocation of resources between the manufacture of present and future (capital) goods in a socialist economy.

In the first place, the planning authority in the socialist state has to determine how much of the aggregate productive resources wielded by the community will be reserved for capital maintenance and net investment. In a socialist community the amount of investment is determined not by individual choice but by the state. The state can cover the costs of investment in two ways. The state might collect it in the form of taxes and loans, or, instead of making a money levy on the public, the state might allow the public to spend all their incomes, and mark the prices of the goods sold to them in such a way that it can raise whatever sum it needs for purposes of capital maintenance and net investment. Doctoring of prices is the better method. In a socialist community, the amount of net investment is not determined, unlike under capitalism, by the voluntary forces of supply and demand operating through the rate of interest. Thus in a socialist society (like Russia in 1918) where the initial capital equipment of the society is very little, the state will devote a far greater proportion of its productive resources to the building of capital equipment than it would be the case under capitalism. The present sacrifice to be made by the community for the increased future satisfaction is decided by the state.

Now that the total volume of investment is decided upon by the state, should interest be included as cost in the price of the final consumption goods produced? If the socialist community has attained absolute stationary equilibrium, that is, if it possesses all the capital equipment it requires and accumulates no new capital, and the only costs of capital are the costs of maintenance, there is no need to include interest in the cost of goods. Prices of goods will be identical with labour costs.

But, in reality, conditions are not stationary. Capital equipment can never reach the saturation point. The supply of capital will for ever fall short of the demand for it. There is no limit to the want of people for capital goods. Increase in population, inventions and new wants of people always open up new channels of investment. That means there will always be a certain net accumulation of capital. In this case, interest would have to be included as one of the elements in the price of goods. The presence of interest as an element of cost would mean that only a part of the total output is distributed by the state in the form of consumption goods. If interest were not treated as an element of cost, then goods and services embodying large quantities of capital would be relatively cheaper, and it would be impossible for the state to meet the demand by the public for such goods and services. Hence it is absolutely necessary that interest should be included in the price of goods and services embodying capital. Since there is no capital market and no market rate of interest, the actual rate of interest will be fixed by the state and it depends upon the quantity and variety of the capital equipment that it already possesses, and the state of demand for further

equipment by the community. As the capital equipment of the community increases the state might gradually lower the rate of interest. We shall discuss the actual determination of this rate below.

A socialist community should make use of the device of a rate of interest for another important reason. When once the aggregate amount of investment is decided upon, there is the further decision to be taken as to the allocation of resources between the various investment industries. In a capitalist society, this allocation is solved by the marginal efficiency of capital relative to the rate of interest. In a socialist society too there must be some such device if productive efficiency is to be maximised.

Now in a socialist society there are many kinds of capital equipment, which do not yield a stream of output, but which are essential for civilized life. In this class of equipment fall roads, hospitals, schools and colleges, playgrounds and parks. The investment of resources in these is not governed by the rate of interest at all. And naturally a socialist society will make abundant provision for such investments.

Apart from such types of maintenance and investment, there is a very wide range of investment over which the rate of interest plays a decisive part in the task of allocation. It is not necessary that a rate of interest should be present if the allocation is to be done. The allocation may be done arbitrarily—by guesswork or by luck. But this kind of allocation will involve a maldistribution and hence a waste of resources. As Prof. Von Hayek says, "We should expect to find over-development of some industries at a cost which was not justified by the importance of their increased output, and to see unchecked the

ambition of the engineer to apply the latest developments made elsewhere, without considering whether they were economically suited in the situation."[3] To put the same thing in Mr. Henderson's words: The rate of interest "separates the sheep from the goats. It serves as a screen, by means of which capital projects are sifted, and through which only those are allowed to pass which will benefit the future in a high degree."[4]

The calculation of the rate of interest in a socialist community does not present any great obstacle, if, as we have assumed, there is a free consumers' market for finished goods. Now each capital undertaking in the economy should draw alternative plans of the scale of investment at hypothetical rates of interest. At each rate of interest, the amount of investment decided upon by the undertaking depends upon the schedule of marginal efficiency of capital in that undertaking. Investment will be carried up to the point at which the marginal efficiency of capital and the rate of interest are equal. This marginal efficiency or expected yield is directly dependent upon consumers' choice, *i.e.*, upon the prices they are willing to pay for the final product of the capital undertaking. With the help of mathematical and statistical technique it is possible to calculate the marginal efficiencies of each capital undertaking. This procedure gives the planning authority an idea of the demand for capital in each undertaking at hypothetical rates of interest. The sum of these individual demands for capital is the aggregate demand for capital for the whole community. Of course, the productive plans of each undertaking have to be submitted for the

[3] *Collectivist Economic Planning*, p. 204.
[4] *Op. cit.*, p. 130.

approval of the Central Planning Authority, which may alter the plans in any manner it thinks necessary. As Prof. Von Hayek points out the Central Planning Authority is not merely a super-lender. It has a direct and an ultimate responsibility for the mistakes committed by the various individual productive undertakings.

There are two ways of fixing the amount of investment and the rate of interest. First, the Central Planning Authority may fix the total amount of capital to be invested. Then the actual rate of interest will be determined by the schedule of the marginal efficiency of capital. Or, the planning authority may fix the rate of interest, and thus determine the aggregate amount of capital demanded. The rate of interest would be determined at the level where the demand for and the supply of capital would be equated.

Though this rate of interest is arrived at by taking into consideration, as far as possible, consumers' preferences, it has a large element of arbitrariness about it, since a capital market is absent in a socialist economy. The rate of interest may be either too low or too high. The correct or equilibrium rate cannot be determined at one stroke. The equilibrium rate of interest will be arrived at by a series of adjustments. Of course, the success of the planning authority in fixing the correct accounting rate of interest depends upon the rapidity with which prospects and expectations undergo change. But we may reasonably expect a large element of stability in a socialist society, owing to a more or less equal distribution of wealth and the absence of profit-making. There will be temporal variations in the rate of interest fixed by the state. As the capital equipment and the incomes of the

community increase, the community can afford to make a greater provision for future. Thus the rate of interest can be lowered. One of the reasons for relatively low interest-rates in a socialist economy is the presence of low liquidity-preference.

There is no reason to believe that in the absence of a free market for capital, the amount of capital maintenance and net investment would not reach the optimum level. In fact, there is reason to believe that in this respect the record of the socialist society would be a much better one than that of a capitalist community. In a capitalist society, investment is much dependent upon the profit-motive. The expected rate of profits plays a greater part in determining aggregate investment than the rate of interest does. Secondly, in a capitalist society private individuals often fail to distribute their resources equally between present and future provision for satisfaction. That is, their preferences are very often non-rational. In a socialist economy, the planning authority will distribute productive resources between present and future in such a way as to maximise economic welfare.

So far we have dealt only with *the* rate of interest. But in a socialist economy too there are two rates of interest, the long-term and the short-term. The provision of long-term and short-term capital will be made through a Central Bank. In addition to the provision of long-term and short-term capital, the state has also to provide capital for durable consumption. In a socialist society the state will provide in greater abundance amenities like dwelling houses, furniture, motor cars and radios. The state may provide these on the basis of hire or hire-purchase.

We have now finished our enquiry of the

importance of the rate of interest in a socialist economy. We have discovered that the rate of interest does exist in a socialist society both as an element in the cost of production and as an instrument for the economic utilisation of productive resources. That is to say, in a socialist economy too it fulfils precisely the functions it does in a capitalist society. That is why many economists hold the view that the fundamental character of the economic problem and economic laws remain the same in spite of changes in social and economic institutions. For instance, Mr. Henderson points to "the existence in the economic world of an order more profound and more permanent than any of our social schemes, and equally applicable to them all."[8]

[8] *Op. cit.*, p. 11.

CHAPTER XI

THE REAL NATURE OF CAPITAL AND INTEREST

We have now finished the detailed survey of the various theories of interest. We have criticised each theory in detail and pointed out its merits as well as its shortcomings. But at the end of this long survey we cannot help feeling that most of the theories of the nature of interest are ultimately less divergent than appears at first sight. In this chapter we shall attempt to co-ordinate the important truths we have discovered in the several theories.

We must begin with an analysis of the nature of capital, for interest is regarded as the earnings of capital or the payment made for the use of capital. 'Capital' may be regarded as a factor of production in any one of three ways. It may be an active agent in the productive process. In this sense it stands for tools, machinery and raw materials. These are 'intermediate goods' or 'produced means of production'.

'Capital' may also be used to denote purchasing power or 'control over resources'. In this sense, capital as a factor of production has come to be associated with the function of 'waiting'. In an earlier chapter we have dwelt at length on the nature and services of 'waiting'. All production and the consumption of durable goods demand 'waiting'. In an exchange economy this 'waiting' can be transferred from one person to another, by means of a loan of liquid purchasing power or 'control over resources'.

Capital becomes identical with a certain sum of value for a certain period of time. In a monetary economy value is expressed in terms of money. That is, the transfer of value or 'control over resources' is effected by means of a quantity of money. So in the second sense, capital stands for a 'sum of money'.

Capital, in the third sense, denotes 'capital claims'. It is a source of a particular kind of income. When a person lends a sum of money to another, he receives in turn a premium over the money lent. This premium is interest. Or the same person may invest his money in the shares of an industrial corporation and earn dividend on the shares. These shares constitute capital, because they are the source of an income to the owner.

Though some quantitative and causal relationship does exist between these three senses of capital, they are distinct. A person may lend money to an entrepreneur by buying the debentures issued by that entrepreneur against a fixed rate of interest. The entrepreneur may invest the purchasing power in machines, raw materials and factory building. In this case, there is a very close causal and quantitative correspondence between capital purchasing power, capital claim and capital equipment. But in the actual world, the correspondence between the three senses of capital is not complete. All those in possession of capital purchasing power do not part with it by lending to entrepreneurs. They may spend it on durable consumption goods. The borrower of capital purchasing power may not invest it on capital equipment. He may not be an entrepreneur at all. He may spend it on consumption goods. It may be that he expects a larger income in the future than at present. Hence

he may desire to live temporarily above his income. And even if entrepreneurs borrow capital purchasing power, they may not utilise it for capital equipment. So there may be capital purchasing power without capital claims or capital equipment. Again, there may be capital claims without there being any corresponding capital equipment.

Of the three senses of capital, that of capital equipment is of the least importance to the theory of interest. Capital, in this sense, is purely a technical factor of production. Capital goods are multiform and heterogeneous. They include instruments of production of various kinds, raw materials and semi-manufactured goods. Moreover they are essentially derivative, in the sense that they are the product of past labour and land, and not original productive elements.

Of far greater importance to the theory of interest are the concepts of capital claims and capital purchasing power. We shall study the nature of these concepts and the relationships between the two. A capital claim arises in various forms. It arises when concrete material goods are leased in return for a fixed payment in kind or cash for the use of these goods. But this kind of claim is not usually regarded as capital, and the payment made for the use of concrete goods is regarded as 'rent' and not as 'interest'. But the distinction between 'rent' and 'interest' is not fundamental. Both are alike in several respects. In both a principal thing is lent to be returned together with a payment for the time-control of the thing lent. With both the relation is one of an exchange between the contractual object of the present and the contractual object of the future. The chief difference between the two is that

while rent is expressed in *real* terms as a *sum*, 'interest' is expressed in *value* terms as a *rate*. The distinction between 'land' and 'capital' rests on the fact that a loan is regarded as a capital claim and the payment from that claim is regarded as 'interest' if the loan is liquid and represents not concrete pieces of property, but 'wealth in general' or 'control over resources' or 'general purchasing power'. In a monetary economy all loans are made in the form of money. Productive property is not rented for various reasons. Most kinds of rentable goods can be produced under conditions and at a cost more or less accurately known. So it is not necessary to hire concrete pieces of productive property. It is enough if a loan is taken in the form of money. Secondly, loans are made in the form of money to carry as far as possible the specialization of the entrepreneur function. Many people who are in possession of spare purchasing power are ignorant of the best way of investing it. The institution of lending money at interest relieves owners of wealth from this burden. The entrepreneurs take upon themselves the responsibility of investing the resources borrowed to the best advantage. So in a monetary economy a capital claim arises when a person parts with a sum of money for a period of time in return for a regular net income.

In a monetary economy, a capital claim arises in two ways. A person in possession of money and desirous of investing it, may do so in two ways. In the first place, he may invest his money in a capital-asset. That is, he may buy shares of an industrial corporation and derive income in the shape of dividend —he becomes an owner of the industrial concern. This kind of investment is of the greatest importance in the

modern world. Ever since the industrial revolution roundabout production is becoming more and more important. Industry is being carried on a gigantic scale. The joint-stock company form of business organisation with limited liability and the presence of organised markets in securities have given a great impetus to investment in business undertakings. The net income from this kind of investment is known as 'natural' interest.

A capital claim can also arise in a second way. The same person, instead of buying the shares of a company may lend his money against a fixed payment of interest to another individual, or a bank or a municipality, or to a government. He now exchanges his cash for a debt. It is immaterial to the lender as to what use the borrower will put the money borrowed. The borrower may spend the money for consumption, particularly that of durable goods. The borrowing of money for this purpose is becoming increasingly important. The borrower, if he is an entrepreneur, may invest the money in a business undertaking. This is precisely the thing done when industrial concerns borrow money by the issue of debentures. Governments borrow for all sorts of purposes—to provide relief to the poor and unemployed, to undertake public works or to wage a war. People also desire to borrow money to strengthen their cash-holdings, because of uncertainties regarding the future. They may indulge in speculative activity on the stock exchange with the object of making a gain. These forms of direct lending of money are becoming as important a kind of investment as that of buying industrial securities. The payment made for loans of this kind is 'contractual' or 'loan' interest.

Thus, the holding of capital purchasing power (or money), the holding of capital-assets or the holding of debts are alternative forms of holding wealth. The way in which an individual distributes his wealth among these three forms, depends upon the relative advantages and disadvantages of each type of holding the wealth. The fundamental distinguishing feature between capital purchasing power and capital claims is the degree of liquidity that each possesses. Money has hundred per cent. liquidity, while capital claims are relatively illiquid.

So far we have discussed the several senses in which 'capital' is used. For our purposes, we have preferred to use 'capital' in the sense of capital purchasing power. In the modern world it is capital purchasing power that is primarily demanded, whether for production or for consumption, or for simply holding wealth in liquid form. So the loaning of resources is invariably done by means of money. But in this chapter we have not yet answered the question as to why an income in the form of either 'natural' interest or 'loan' interest accrues to the owner of a capital-claim. An answer to this question is to be found in the preceding chapters. All that we shall do here is to piece together the conclusions we have already arrived at.

First, why does 'natural' interest exist? We have answered this question fully in the chapter on the productivity theory of interest. When resources are invested in capital goods for purposes of production, these capital goods earn a net income because they are productive and they are scarce. The supply of capital goods is always scarce in relation to the demand for them. The demand for capital goods is insatiable.

But the supply of capital cannot increase indefinitely, because of the scarcity of economic resources. The more of capital goods we produce, the less of consumption goods do we produce for the present. If we want more capital goods, we must be prepared to have a smaller amount of consumption goods for the present. Thus there is a definite limit beyond which we cannot curtail present consumption. That is to say, there is a definite limit beyond which the supply of capital goods cannot be increased. How much of capital goods we produce and how much of consumption goods we produce during any period of time depends upon our relative preferences for present as against future consumption. The amount of investment or capital-production we decide upon depends upon the urgency of our present wants and the marginal productivity of the capital goods we produce. If we expect the marginal productivity of capital to be very high, we do not mind foregoing a little more of present consumption in order to enjoy a greater and finer product in the future. If the marginal productivity of capital appears to be very low, we do not care to postpone present consumption beyond the point we are doing at present. Thus the productivity of a capital good is nothing but the rent of scarcity paid for the use of capital. And it may be noted that we measure the productivity of capital, not in physical units, but in value units. The marginal productivity of a capital good is nothing but the value we attach to the marginal product obtained with the aid of the capital good in the course of its life-time.

There is absolutely no necessity to enter the industrial world to prove the existence of interest. Interest is a universal phenomenon. It does exist even

in a society where opportunities for investment are absent. In such a society there will always be demand for loans for purposes of consumption. There are people who expect to get higher incomes in the future than they do at present. Hence they desire to borrow to increase present consumption beyond the level of their present incomes. There are many people who pay no attention to their future, but who want to spend money extravagantly, far above their present or future incomes. At the same time, there are persons who are better provided in the present than they hope to be in the future. These are prepared to lend their present resources to be returned in the future. The first group of persons is prepared to pay a premium in the form of interest for the loan it takes. The second group can certainly lend with advantage. The interest which is paid on money loans in such a community is 'loan' or 'contractual' interest.

In addition to the demand for money for purposes of production and consumption, money is also demanded for commercial and speculative purposes, with the object of making a profit. The people who are engaged in such activities are prepared to pay interest on the money they borrow.

Thus there are various sorts of people who want to borrow money and who are prepared to pay interest. This only explains the demand side. What are the forces operating on the supply side of capital? We have definitely rejected the view that the supplier of capital undergoes a sacrifice such as abstinence. Interest is not a reward for saving; even if there were no interest people would save. In a society in which opportunities for investment are absent, the lender of money makes no sacrifice at all. But even in

such a society a positive rate of interest is necessary, just to restrict the demand for loans. In the absence of a positive rate of interest the demand for loans would be infinite. At zero rate of interest there will be too many borrowers and very few lenders. The same happens in a society where there are opportunities for investment. At zero rate of interest the demand for capital goods and durable consumption goods becomes insatiable. Zero rate of interest is possible only when the community's stock of capital equipment has reached a saturation point, and the marginal productivity of capital is nil, and when the incomes of people are constant over time, and nobody wants to borrow any money to increase present consumption. This is an imaginary and an impossible state of affairs. So a positive rate of interest is always necessary.

In an industrial society, there are always opportunities for employing money-capital gainfully. Money capital may be used for investment in a business undertaking to obtain a perpetual income. Or money capital may be utilised for speculative purposes. So that in a progressive society the most important reason for the payment of interest on a money loan is the productivity of money-capital. By productivity of capital, we mean, that there are advantages to the borrower from the time-control of the resources he has borrowed.

We have also come to the conclusion that a rate of interest is necessary even in a socialist community. In the preceding chapter we analysed the nature and services of the rate of interest in such a community. Interest would not exist as a class-income, but it would be an enduring phenomenon as an element of cost.

We have clearly demonstrated the necessity of 'natural' interest as well as 'loan' interest. Many economists have thought that these two forms of interest are identical, and that the 'loan' rate of interest is derived from, and is dependent upon, the 'natural' rate of interest. We have already criticised this view and it is unnecessary for us to dwell on it at length once again. 'Natural' interest is nothing but the marginal productivity or the marginal efficiency of a capital-asset. The marginal productivity of capital depends upon the scale of investment, and the scale of investment depends upon the current rate of interest. So we cannot determine the rate of interest from the marginal productivity of capital. Marginal productivity of capital explains only the rents earned by capital-assets. This rent is only a *sum* and not a *rate*. To know the purchase value of a capital-asset we must already have a pre-determined rate of interest on a money loan. 'Natural' interest and 'loan' interest cannot be equal, for there is always an antagonism between industrial-capitalists and money-capitalists. If the two rates of interest are equal, then industrial-capitalists have no inducement to borrow at all. Moreover, in the modern world the banking system can create any amount of money and maintain the rate of interest at any level it desires. It can create money which is not at all the result of saving. It is only under the impossible conditions of perfect competition and stationary equilibrium that 'natural' and 'loan' rates of interest are equal. In the actual world the 'natural' or 'pure' interest is only a fiction. The concept of 'natural' interest is not very helpful in the determination of the rate of interest. Hence we ought to give up the phrase 'natural interest' and simply use

instead the phrase 'marginal efficiency of capital'. We should reserve the word 'interest' exclusively to mean the money-premium paid on the money-sum lent. Thus the rate of interest is essentially a money rate and its determination primarily a monetary phenomenon. If there is no money in a community, there will be no unique rate of interest at all.

The question naturally arises as to why it is the money-rate of interest that is of the greatest importance in the economic world. The answer to this is to be found in the fact that money possesses certain characteristics which make the money-rate of interest the most significant one.

People aim at obtaining the best advantage from the possession of wealth. This will set up a tendency for capital-assets to exchange, in equilibrium, at values proportionate to their marginal efficiencies in terms of a common unit (money). It is usually the greatest of the own-rates of interest that determines how far the production of any new capital-asset will be carried. In other words, the marginal efficiency of any capital-asset, if it is to be newly produced, must be equivalent to the greatest of the own-rates of interest. And we can show that it is the money-rate of interest (*i.e.*, the marginal efficiency of money in terms of itself) that is the greatest.

All capital-assets possess three attributes in different degrees. They produce a yield or output q.[1] They suffer a wastage or involve a carrying cost c. They possess liquidity-premium l. Hence $q - c + l$ (all measured in terms of a common unit, namely money) is the own-rate of interest of any capital-asset.

[1] The terminology used here is borrowed from Mr. Keynes's *General Theory*.

Some goods like instrumental capital have a yield greater than their carrying-cost, while their liquidity-premium is practically negligible. In the case of money, its yield is nil, its carrying cost negligible, but its liquidity-premium substantial. The marginal efficiency of most capital-assets falls as the output of it is increased. But the characteristic of the money-rate of interest is that it declines most slowly as the quantity of money is increased. This is because of the following characteristics of money:

(*i*) The elasticity of production of money is zero, or very near that, so far as private enterprise is concerned, apart from the ability of the monetary authority, "elasticity of production meaning, in this context, the response of the quantity of labour applied to producing it to a rise in the quantity of labour which a unit of it will command".[2] This condition is most strictly fulfilled when there is a managed inconvertible currency.

(*ii*) The elasticity of substitution of money is zero, or very near that. This is due to the fact that the utility of money is solely derived from its exchange-value, "so that the two rise and fall *pari passu*, with the result that as the exchange value of money rises there is no motive or tendency, as in the case of rent-factors, to substitute some other factor for it".[3]

(*iii*) Even if the actual supply of money is increased, the fall in the rate of interest will be very gradual, and below a certain level it will not at all fall in response to a large increase in the quantity of money. This is because money commands a very high liquidity-

[2] Keynes, *General Theory*, p. 230.
[3] *Ibid.*, p. 231.

premium. And the possession of money involves negligible carrying-costs.

On account of these factors the money-rate of interest is very sticky. Hence it is the marginal efficiency of capital-assets that has to adjust itself to the rate of interest and not *vice versa.* This stickiness of the money-rate of interest often retards investment and is responsible for unemployment. Thus if the money-rate of interest is fixed at a relatively high level, the production of many capital goods is retarded while the output of money is not stimulated. Thus unemployment occurs "when the object of desire (*i.e.,* money) is something which cannot be produced and the demand for which cannot be readily choked off".[4]

Interest, we must emphasise once again, is the return on the loan of money.

[4] Keynes, *General Theory,* p. 235.

CHAPTER XII

INTEREST RATES: SHORT-TERM AND LONG-TERM

TILL now we have been talking of *the* rate of interest as if there were only one rate of interest. This is not so. In fact, there are many different rates of interest, which are classified broadly into long-term and short-term. There are many kinds of loans to each of which is attached a distinct rate of interest. The relationship between these interest rates presents very intricate problems. What are the causes for the divergence of the rates of interest? Do long-term and short-term rates move together in the same direction? What is the relative magnitude of the changes in the long and short rates? Can the two rates be regarded a single factor, each being derived by appropriate additions (for the element of risk) to the pure rate of interest? Or, are the two rates separate and distinct elements? In answering these questions there is not always identity of views between those who rely on statistical investigation and those who draw conclusions theoretically.

First, let us study the causes for the divergence of interest rates. There are two reasons for the apparent multiplicity of interest rates: (*a*) the market considers that the risk[1] of various sorts is greater in

[1] In this context, risk is defined in a broad sense. It includes 'uncertainty' also. Thus every rate of interest includes a risk-premium as well as an uncertainty-premium. The uncertainty-premium may be greater or less than the actual loss the lender suffers from the loan transaction. Hence when we say that every rate of interest contains a risk-premium, we mean it includes an uncertainty-premium also.

the case of some loans than in the case of others; and (*b*) loans are made for different periods of time.

(*a*) When money is lent at a fixed rate of interest for some time, there is always the danger to the lender that the borrower may fail to return the loan. This danger varies with regard to different persons. The ability of certain people to repay the loan is certain. Their 'credit' stands very 'high'.* On the other hand the credit of some borrowers is 'low'. The borrower whose credit is low has to pay a higher rate of interest than the one whose credit is relatively high. For the same reason, loans which are 'unsecured' carry a higher rate of interest than loans which are 'secured'.

There is another kind of risk present when loans are made. The value of money might greatly depreciate when the loan is repaid. In so far as changes in the value of money are foreseen by the lender, he demands a higher rate of interest as a compensation for the fall in the future value of money.

Differences in the rates of interest are also to be accounted for by the use to which the loan is going to be put. If a spendthrift borrows money for extravagant consumption he will be charged a higher rate, because there is the risk of his failing to repay the loan.

The rate of interest also depends upon such factors as political and social security. Political turmoil and insecurity raise the rate of interest to a very high level.

All these factors of risk raise the rate of interest. These elements of risk are present not only when individuals borrow, but also when governments and municipalities borrow. The credit of some governments

stands higher than that of others. For instance, on 15th September 1937, the following were the three quotations of market prices of securities on the London Stock Exchange.[2]

Securities	Price	Percentage Yield
		£ s. d.
British consols 2½%	73½	3 8 0
Southern Railway 4% debenture ..	104	3 17 0
Polish Government 7%	64	10 18 9

This indicates that the 'credit' of the British Government was higher than that of the Southern Railway, and very much higher than that of the Polish Government.

Thus one of the important reasons for differences in the rates of interest is the presence of an insurance-premium against risks of various kinds.

(*b*) Another very important factor responsible for differences in the rates of interest is the length of the period for which the loan is made. On the one hand are loans which are repayable on demand. These are the 'current' deposits held by individuals in banks. These carry no interest at all. It is even possible that the depositor himself may have to pay something periodically to the bank towards 'incidental charges'. At the other end there are loans which are not repayable at all. Between these two extremes, loans are made for all kinds of periods, from a day or a week up to a fifty or hundred years.

Loans are classified according to the length of

[2] Benham, *Economics*, p. 255.

the period for which they are made. Loans made for any period less than one year are called 'short-term' loans. Bills of exchange and Treasury Bills are familiar examples of short-term loans. The rate of interest charged for short-term loans is the short-term rate. Loans made for a period from one to, say, five or even ten years are called 'intermediate' or 'medium-term' loans. Loans made for longer periods are called 'long-term' loans. Consols and debentures are examples of long-term loans. It is sufficient if we keep the distinction between long-term and short-term loans. Though the distinction between long-term and short-term loans is arbitrary, a distinction does exist between them. In a country like Great Britain the distinction between the two kinds of loan is very important. In that country are to be found two separate money markets, the money market 'proper' dealing in short-term credit and the 'capital-market' specialising in long-term credit. There is a further complication within the group of long-term loans. Long-term loans may be permanent loans. They are not repayable. Consols are an example of this kind of loan. Some loans are payable at a definite date after a term of years. In the case of a few loans the borrower has the option of repaying the loan after a definite period or not as he wishes.

Generally the rate of interest on long-term loans is higher than the rate of interest on short-term loans. This is so for various reasons. When a person lends money for a long period, he is liable to risks such as those mentioned in (*a*). There are the risks of default, of a fall in the market value of the asset, especially if he wants to sell it before it matures. The capital value of his asset may also fall due to a rise

in the rate of interest. In other words, a long-term loan possesses a low degree of liquidity. Hence lenders of long-term loans demand and deserve a higher rate of interest. Short-term loans, on the other hand, possess a high degree of liquidity. It must be noted that the higher liquidity-premium of the short-term loan is only relative. Under normal circumstances both loans are liquid, and in a period of crisis both are illiquid. The difference between the two loans is that the lender on short-term runs only a slight risk of losing any of his money. We may regard the short-term rate of interest as a payment to lenders to compensate them for the sacrifice of liquidity.

It is possible for a long-term rate of interest to be lower than short-term rates of interest if the investors are confident of the stability of future conditions. They may not like to undergo trouble and expense in investing and reinvesting in short-term loans. In that case long-term investment would appear attractive and the long-term rate of interest may be lower than short-term ones. But this situation is far from reality in the present world which is full of uncertainty.

Short-term rates of interest fluctuate much more widely over a period of time than the long-term rates do. One reason for this is the fact that changes in the rates of interest normally take their origin in the market for short-term loans. Moreover, changes in the liquidity-preference of the public as well as the banks fluctuate for various reasons. Thus during a depression and in the early stages of recovery the short-term rate is low because the demand for bank loans and overdrafts is low, whether for transaction or

for speculative purposes, whereas in the upper stages of the boom, there is a tendency for the short-term rate to rise owing to the enormous increase in the demand for funds. That is, fluctuations in the short-term rates of interest are the direct consequence of fluctuations in the demand for money relative to the supply of it. The demand for short-term loans comes mainly from industrialists, commercial men and governments.

It is very important to note that the short-term rates of interest are completely determined by the Central Bank in co-operation with its member banks. In countries where central banking has developed fully, all the short-term rates of interest follow the Bank Rate, the rate at which the Central Bank discounts good commercial bills. The Central Bank can easily dictate the short-term rate. It can keep the rate low in the face of a large increase in the demand for loans by a corresponding increase in the supply of money. The Central Bank, subject to certain legal and conventional restrictions, can increase the supply of money in response to any increase in demand.

The demand for long-term loans comes from various sources. The largest demand comes from industrial firms. Though firms raise large amounts of capital by the issue of shares, they also raise money by the issue of long-dated fixed-interest securities, which are called debentures or bonds. Different kinds of security are issued to satisfy different preferences of investors. Many investors do not like to invest their money in shares. But they readily buy bonds. They prefer a fixed money-income to a fluctuating one. Many investors act the other way. They prefer shares to bonds. Another source of demand for long-term

loans are governments and municipalities. To-day these two borrow on a very large scale. Government borrowing for armament and public works is reaching tremendous figures. The demand for long-term loans also comes from consumers for acquiring durable consumption goods such as houses, motor cars and radios. This demand for loans is becoming very great.

The supply of long-term loans comes from various sources. The first source is the saving of individuals. The second and a larger source is the credit issued by banks. In addition to these supplies, a large amount of saving is done by joint-stock companies themselves by not distributing a portion of the dividends. Insurance companies are a source of further supply of loans.

While the control of the Central Bank over the short-term rate of interest is absolute, it is not so in the case of the long-term rate. The long-term rate depends upon various factors such as the expected yield of investments, changes in demand for loans due to changes in population, inventions and tastes, state of confidence and expectations regarding the future. The policy of the Central Bank is one of the important factors in the situation. But the control of the long-term rate by the Central Bank is not absolute for the following reasons:—

(1) There are certain legal and conventional rules which limit the monetary authority's willingness to deal in long-term debts. The banks have to keep their assets in liquid form. Their power to expand the issue of notes and credit is subject to legal restrictions.

(2) The public may have no confidence in the permanence of the rate established by the monetary authority. The public might feel that a particular rate

of interest fixed by the monetary authority is only experimental. Moreover the public may feel that it is unsafe for the rate of interest to fall below a certain level, which, it thinks, is 'safe'. That is why Mr. Keynes calls the rate of interest a highly conventional phenomenon. If, for these reasons, the public has no confidence, then its liquidity-preference increases, and any increase in the amount of money will be absorbed by the public to satisfy liquidity-preference.

(3) The monetary authority cannot bring the rate of interest below a certain figure, say 1½ or 2 per cent. because of the presence of banking costs and risk-premium.

If the Central Bank is to control the long-term rate of interest effectively, it must be freed from certain legal restrictions. The Bank itself should pursue a bold policy of dealing in long-term debts of various maturities instead of confining itself to short-term debts.

There are two principal classes of long-term loans. One class comprises of the loans which the government borrows. The other comprises of the loans borrowed by others such as municipalities and industrial firms. Investment in long-term government debts, such as the Consols, is the safest form of long-term investment. There is absolutely no risk of a default of payment. That is why the rate of interest on such government securities is considered to be *the* long-term rate of interest. The terms on which others can borrow on long-term is governed by this rate of interest. Usually the rates at which the municipalities can borrow are fixed higher than that at which the government can borrow. The rates at which industrial borrowers can obtain loans are still higher by an amount sufficient to

compensate the lender for the extra risk he runs of losing his capital or his interest or both. Usually this rate is higher than the rate on gilt-edged securities by one to two per cent.

Thus the rate of interest on gilt-edged securities occupies a most important position in the long-term interest structure. So we should study the factors which determine this rate of interest. This rate is influenced by any or all of the following factors:—

(i) The short-term rate of interest at which the money-market can borrow from the commercial banks;

(ii) Purchase and sale of government securities by the banks;

(iii) The state of public confidence in the solvency of the government;

(iv) The expected yield of profits from industrial enterprise. If the expected yield of profits is high, then investment in government securities becomes relatively unattractive. Their prices fall and the rate of interest goes up; and

(v) The state of liquidity-preference of the public.

Normally there is a tendency for long-term rates of interest, as measured by the yield of consols or bonds, and short-term rates to move together. One of the reasons for this is lending at short-term and lending at long-term are alternative forms of investment. There is a close connection between the relative levels and the relative movements of short and long rates owing to the presence of an efficient market in securities and bills. The presence of the Stock Exchange facilitates the movement of funds into the long-term capital market, because at any time the investors may sell their long-dated securities on the Stock Exchange and realise

cash. Hence there is mobility of funds between the long and short markets, and corresponding sympathetic movements of the two rates. If the short-term rate of interest rises sharply, investors may sell their long-term securities and invest in short-term ones. This lowers the prices of long-term securities and thus raises the long-term rate of interest also. A rise in the short-term rate of interest also deters firms and other persons from resorting to bank advances for short-term, and they either sell securities or borrow long-term. This leads to a rise in the long-term rate. Thus, to the borrowers too, long-term and short-term loans are alternative modes of borrowing funds.

The fact that normally the long-term and short-term rates move together gives rise to an interesting problem. Which is the rate that affects the other? Does the short-term rate of interest affect the long-term rate or *vice versa*? Or do certain common causes affect both the rates of interest? Actually all the three tendencies are present in varying degrees.

We have just now studied how changes in the short-term rate produce corresponding changes in the long-term rate of interest. Similarly a change in the long-term rate affects the short-term rate. If the long-term rate is low, relatively to the short-term rate, industrialists and traders borrow on long-term instead of paying high rates for short-term advances, and they may deposit the idle cash in the banks and make a profit. Now the banks stand to lose, because their incomes fall owing to the low demand for bank advances, and to the fact that their payments for interest on deposits are increasing. Hence the banks will reduce the rate both on deposits and advances, unless the Central Bank is determined to enforce a high rate. Similarly, when the long-term

rate is unduly higher than the short-term one, long-term borrowers begin to borrow short-term on a large scale. This will raise the short-term rate, unless again the Central Bank wants to enforce a low rate. The substitution of short-term borrowing for long-term one (when the long-term rate is unduly high) is more widespread than the substitution of long-term borrowing for short-term one (when the long-term rate is low relatively to short-term rate).

There are many common causes affecting the long-term and short-term rates. War or the fear of war would, very often, raise both the rates of interest. In a period of rising trade activity, there is a large demand for working as well as fixed capital. This leads to a rise in both the rates. Again, in a period of depression, the demand for working capital falls and with it the short-term rate also falls. The long-term rate too falls, in spite of the increased demand from 'distress' borrowers like governments with unbalanced budgets, collapsing business firms and long-term debtors. All the idle funds which were invested in short-term capital are now liquidated and transferred to the long-term market. Moreover the demand for long-term loans for investment falls very low. Hence the supply of long-term funds will be greater than the demand for them and so the long-term rate also falls.

Because of the tendency for the short-term and the long-term rates to vary together, many economists suggest that the long-term rate of interest could be controlled by the banking system by influencing the short-term rate. Mr. Keynes is one such economist. Mr. Keynes does not agree with Mr. Hawtrey that changes in the short-term rate of interest affect appreciably investment in liquid goods. According to Mr.

Keynes, changes in the short-term rate of interest affect capital outlay by influencing the long-term rate. Obviously Mr. Keynes underestimates the influence of the short-term rate on investment in liquid goods and overemphasises the influence of the Bank Rate on the rate of investment in capital goods. Still there is some truth in his contention that the short-term rate influences the long-term rate correspondingly. We have already seen how the short-term rate affects the long-term one. But the difficulty lies in finding out the degree to which changes in the short-term rate affect the long-term rate correspondingly. Economists like Mr. Meade are of the opinion that changes in the short-term rate have very little effect on the long-term rate, which, they argue, depends much more upon the bullishness or the bearishness of the market (*i.e.*, upon its expectations regarding the future price of long-term securities) than upon the short-term rate. This is, in the main, true. Yet, for reasons stated already, the short-term rate does affect the long-term rate. It is possible for the banking system to influence the long-term rate through the short-term rate. Now, one of the factors governing the long-term rate of interest is the anticipated short-term rates for future years. If the public is confident that a particular short-term rate will prevail for a certain period of time, the long-term rate would correspondingly vary. Therefore the monetary authority should make an announcement concerning its future policy in respect of short-term rates. This will create plenty of confidence in the minds of the investors. If, for instance, the rise in the short-term rate is believed to be temporary, the long-term rate would not at all be affected. But if the rise in the short-term rate is believed to be permanent, the long-term rate would

rise correspondingly, though not to the same extent as the former. However, Mr. Keynes would be the last person to believe that the only way of controlling the long-term rate is by the manipulation of the short-term rate. The Central Bank should pursue boldly the open-market operations; that is, the Central Bank should act as a buyer or seller in the bond market. Its control of the long-term rate will be considerably effective, if it is supported by the government. Let us suppose that the Central Bank wants to raise the long-term rate. Then it should begin selling bonds. If it so happens that the sale of the entire stock of the bonds with the Bank is insufficient to lower the prices of bonds, then the Bank itself should issue bonds, guaranteed by the government.

The long-term rate of interest has a peculiar characteristic in that it remains constant over long periods of time. It is found that for many centuries in Babylonia the rate of interest stood at 20 per cent. In Ptolemaic Egypt the regular rate was 2 per cent. per month. In Greece, in the days of Solon the rate was 16 per cent. In the Middle Ages the Jews were charging nearly 40 per cent. But with the development of banking the rates of interest have fallen enormously. Thus in England between 1825 and 1880 the rate stood at between 3 and 3½ per cent. Since the beginning of the twentieth century the rate has stood between 4 and 4½ per cent. Recently, Mr. Kalecki has shown that the long-term rate of interest has remained practically constant between the years 1853 and 1932.[3]

So far we have differentiated between rates of interest concerning the length of the period for which

[3] *Essays in the Theory of Economic Fluctuations*, p. 114.

loans are made. Now we must make a further differentiation between deposit and loan rates of interest. The banks charge a higher rate on the loans they make than the rate they pay on the money deposited with them. The reason for this difference in the rates is that the banks have to raise money to meet banking expenses and to obtain profits for the owners of the banks. The margin between the two rates varies with the degree of monopoly that the banks enjoy. The margin cannot be unduly high, because it would lead to loan transactions directly between the lender and the borrower without the mediation of the banks. The deposit rate is not of much significance to the entrepreneurs who work with borrowed capital. But those investors who have a choice between investing their money in industrial enterprise and depositing it with the banks pay attention to the deposit-rate. A fall in the deposit rate may induce such persons to invest money in industrial shares. A fall in the deposit rate rarely discourages savings. The fall in the rate alters only the form in which savings are made rather than the aggregate amount of savings.

The loan rate, on the other hand, is of very great importance to the entrepreneurs, since most of them work with borrowed money. Moreover, the demand for loans is more elastic than the supply of loans from savings. Hence the loan rate of interest exerts greater influence on the investment schemes of entrepreneurs and the price level than does the deposit-rate.

Thus in a highly developed monetary economy there are several significant rates of interest. We may enumerate them:

(*a*) *The Bank Rate.*—That is, the rate at which the Central Bank discounts approved commercial bills.

(*b*) *The Call Rate.*—That is, the rate at which dealers in bills and other money titles can borrow from the commercial banks at call or short notice. Usually this is 1 per cent. below the bank rate.

(*c*) *The Deposit Rate.*—That is, the rate at which the banks pay interest on deposits, which could be withdrawn at a week's notice. This rate is 1½ per cent. to 2 per cent. below the bank rate.

(*d*) *The Market Discount Rate.*—That is, the rate at which commercial borrowers can obtain money for short periods from the money market. This is usually 1 per cent. below the bank rate.

(*e*) *The Rate at which Depositors can Borrow from the Banks.*—This is 1 to 2 per cent. above the bank rate.

(*f*) *The Rate on Treasury Bills.*—That is, the rate at which the government borrows for short periods. This is about ½ per cent.

(*g*) *The Rate at which the Government Borrows for Long Periods.*—Very often these loans are not repayable. This is the Consols rate. It varies from 5 to 3 per cent. This is often considered as *the* long-term rate of interest.

(*h*) *The Rate at which the Other Borrowers like Municipalities and Joint-stock Companies can Borrow for Long Periods.*—This is the debenture rate. This varies from 3 to 7 per cent., depending upon the credit of the borrowers and the purpose to which they put the loan.

The survey of the general theory of interest we have made serves to emphasise the complex character of the interest phenomenon. It is influenced by technical, psychological, political and institutional factors. At any moment of time there is no one rate

of interest. We find a great variety of interest rates. In a country which is highly industrialised and in which there has been a remarkable development of banking, relatively low rates of interest prevail. The banks act as a reservoir of funds. They lower the risk-premium payable on loans. More than all, the banks are not only the *purveyors* of money, but are also the *creators* of money. It is no doubt true that banking facilities increase the demand for money, since borrowing is cheaper and less hazardous. But the banking system as a whole can meet any demand for loans. The banking system, by controlling the quantity of money supplied, can control the rates of interest. This control by the banks is greater the greater the extent to which central banking has developed in a country. Thus in Great Britain, where central banking has developed to a very great extent, the control of the rates of interest by the banks is much greater and more effective than in a country like the U.S.A., where central banking is not highly developed. Again, in the U.S.A., the central banking structure is very rigid because it is dominated by legislation. Whereas in Great Britain legal enactments do not hamper the freedom of the Central Bank. The whole banking system is very flexible. Hence control of the interest-rates is easier in Great Britain than in the U.S.A.

In a country like India which is geographically vast, and which is mainly an agricultural country, and where the banking system is inadequately developed, not only are the rates of interest unduly high, but there is a lot of confusion and chaos of rates of interest. In the absence of adequate banking facilities the local money-lenders charge ruinous rates of interest. The money-market in India is divided into several segments

which are only loosely connected. Hence there is no relation between the several rates of interest. The bank rate has no significance as the regulator of the other rates of interest.

Even in the most advanced countries with a highly developed loan market there is no one general money market and no one rate of interest. It is a paradox that there should be so many prices for a commodity like money which is most liquid in form. Loans seem to be less amenable to standardization than many concrete commodities such as wheat or cotton.

CHAPTER XIII

RATE OF INTEREST AND THE PRICE-LEVEL

In modern economic theory no subject has been more controversial than the relation between the rate of interest and the price-level. This subject is not only of great importance to economic analysis but also of paramount significance to economic policy. The theoretical importance of the subject lies in that it is an important step in bridging the gulf between value theory and monetary theory. In spite of the fact that there is wide disagreement of opinion among economists regarding the ultimate ends of economic policy and the means for carrying them out, the majority of economists are of the opinion that by controlling the complex of rates of interest, it is possible to influence the course of prices, output and employment in the best interests of the community. That is why the rate of interest is regarded by many as the regulator of the economic system. In the following pages we shall trace briefly the history of the doctrine of interest and prices, and then examine the several 'conceptual' rates of interest suggested by economists "either as the 'ideal' rates to which the banking system should endeavour to align its actual rates of interest, or as criteria which it should use in the control of monetary and industrial conditions."[1]

Changes in the general level of prices have excited great interest among economists and business men.

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[1] B. P. Adarkar, *Theory of Monetary Policy*, p. 8.

Such changes affect the entire economic system. They upset business expectations and cause injury to several sections of the community. They affect the debtor-creditor relation to the advantage of the one and to the disadvantage of the other. Thus a rise in the general level of prices is to the disadvantage of all those whose incomes are fixed in terms of money, such as salaried people, wage-earners and capitalists who lend money at fixed rates of interest. But industrialists and merchants gain from the rise in prices. A fall in the general level of prices has the opposite effects. Changes in the general level of prices would not have these repercussions if they were foreseen with certainty by the community. In that case, people would so adjust their contracts at present as to nullify almost completely future changes in the prices of commodities. A better adaptation of means to ends would be possible. But the real world is dynamic, and full of uncertainty regarding the future. It is rather difficult to measure precisely the net benefit or injury to the community as a whole from changes in the general level of prices. Some economists hold the view that a rise in prices is on the whole beneficial to the community, since higher prices stimulate industrial activity, though in many cases the stimulus may be short-lived. On the other hand, many economists plead for a stable level of prices.

Changes in the general level of prices, however important they may be from the point of view of social justice, would not be primarily relevant to economic theory if all prices, in the broadest sense of the term, were affected equally and simultaneously. In fact, some prices change much more than others do. That is to say, there will be a significant change in relative

prices also. Changes in relative prices exert great influence on industrial activity. Production of all goods is increased or decreased. Production of particular goods is affected much more than the production of other goods. And there will always be some time-lag between changes in the prices of one set of commodities and changes in the other. It must not be thought that changes in relative prices are purely incidental to changes in the general price-level. Changes in relative prices are probably more important than changes in the general price-level, and both are very often the result of the same cause.

In the present chapter we are mainly concerned with the relation between the rate of interest and the price-level, general as well as relative. We must find out whether there is any functional relationship between changes in the rate of interest and changes in prices, and if a relation exists we must determine the nature of the relationship. In this connection we must employ two points of view. In the first place, we must study how far changes in the rate of interest exert an active influence on the price-level. In the second place, we must also study how the rate of interest itself is influenced by changes in the price-level. In the terminology of Prof. Adarkar we may call the former the 'active' and the latter the 'passive' aspect of the interest-prices relationship. This distinction between the 'active' and the 'passive' aspects of the interest-prices relations helps us to avoid much confusion and misunderstanding.

There is no doubt that there must be some relation between the rate of interest and the level of prices. For, both the rate of interest and prices are primarily monetary phenomena. The level of prices and the level

of interest are both determined by the quantity of money. Hence the quantity of money plays a very important part in the interest-prices problem.

As we have already noticed, the mercantilists were the first to conceive of the relation between the rate of interest and the quantity of money. They held the view that the rate of interest was determined by the quantity of money. John Locke explained that the quantity of money affected both the rate of interest and the level of prices. But he was of the opinion that changes in the rate of interest had no direct effect on the price-level.

From the time of David Hume onwards, the theory that the rate of interest is determined by the quantity of money was definitely rejected. Attention was concentrated on the effect of changes in the quantity of money on the general level of prices or the value of money. The Quantity Theory of Money was expounded to explain the relation between the quantity of money and the general price-level. Thus some economists concentrated their attention on the value of money or the effect of changes in the quantity of money on the general price-level, and some concentrated their attention on the price of money or the effects of changes in the quantity of money on the rate of interest. But they could not comprehend that there was some relation between the value of money and the price of money.

Economists from very early days were aware that a rise in the general price-level due to an increase in the quantity of money stimulated industrial activity. David Hume was aware of this, but he knew that the increase in the quantity of money was beneficial to industry and trade owing to the time-lag in the appearance of its effects. Changes in the prices of different

goods are affected in turn, and the fillip to industry would cease when the rise in price became general to all commodities.

The first economist to state clearly the relation between the rate of interest and the quantity of money was Henry Thornton. He put forth the view that there was no limit to the quantity of money that would be demanded from the banks so long as the rate of interest at which the banks lent money was lower than the amount of profit that could be obtained by the employment of the borrowed money in industry or trade.

Ricardo too held the same view. He was of the opinion that the banks could regulate at will the general level of prices. If the banks lent money at a rate lower than the 'natural' rate or the rate of profit, the demand for money would increase, and the banks could meet this increased demand. But according to Ricardo, the increase in the quantity of money would not increase production, but would only raise prices. This was the direct consequence of his assumption of full employment, in which case every increase in the quantity of money would only raise prices instead of increasing output.

But economists like Locke, Fullarton and J. S. Mill held a different view. They maintained, on the assumption that the banks issue notes primarily by way of lending on security, that the banks had no power of influencing prices. The quantity of money required was entirely dependent on the requirements of business. Obviously this view is erroneous. The banks, by varying the terms on which they advance money, can directly affect the total amount of money in circulation.

So far we have studied the line of thought which

pays attention to the relation between the rate of interest and the quantity of money in circulation, and the general level of prices as influenced by the quantity of money. Now we shall pursue another and a more important line of thought which pays attention to the effect of an increase in the quantity of money upon the production of commodities, especially that of capital goods, either directly or through the rate of interest.

Robert Malthus was the first economist to discuss this problem. He explained that if the increase in the quantity of money went into the hands of entrepreneurs they would devote the money to investment in capital goods, that the increased demand for goods would lead to a rise in the prices of commodities until the produce of the country has been increased. Industrialists and businessmen would make greater profits, and hence a certain section of the community would suffer injustice.

The first economist to co-ordinate the two lines of thought we have discussed now was Knut Wicksell. He was the first economist to deal at great length with the problem of interest and prices. We have already considered his contribution to the theory of capital and interest, and we have indicated briefly how he attempted (and succeeded to a large extent) the co-ordination of the theories of value and money. Now we shall study at length his theory of the relation between interest and prices.

According to Wicksell the most important cause for movements in the level of prices and production is the divergence between the 'natural' or 'normal' rate and the money or market rate of interest. Wicksell's 'normal' rate has three attributes. (i) It corresponds to the 'natural' or the 'real' rate of interest in

a non-monetary stationary economy. It is the marginal productivity of real capital determined by roundabout process of production. (ii) It establishes equilibrium between the demand for and supply of real savings. (iii) It is neutral in relation to the price-level, and stabilises the general price-level. It is a matter of great doubt whether each of these characteristics of 'normal' rate is sufficiently clear and whether these three conditions of equilibrium are identical, or mutually consistent with the same interest rate.

In the first place, the concept of a non-monetary or barter economy is vague and bristles with difficulties. It is doubtful whether a barter economy is also a stable economy. In a barter economy too there would be several goods doing the function of money for different individuals. Even in such an economy there is no guarantee that demand for and supply of saving would meet directly. It is extremely doubtful whether a barter economy can be a good model for a monetary economy. Monetary economy and barter economy are fundamentally different. The existence of money and that of static equilibrium are incompatible. These difficulties regarding the barter economy led Wicksell to abandon gradually the idea of the 'natural' rate which would prevail if loan transactions were made in kind, and to conceive of the 'natural' rate as the rate of profits on capital, measured and received in terms of money. Defined thus, the 'natural' rate becomes the same as Prof. Irving Fisher's 'rate of return over cost' and Mr. Keynes's 'marginal efficiency of capital'.

Wicksell's formulation of the 'natural' rate is defective in another important respect. As Davidson and Prof. Hayek have pointed out, the two functions attributed to the 'natural' rate, namely, that it equalises

savings and investment, and that it stabilises the general price-level are mutually inconsistent. It is true that so long as the 'natural' rate and the money-rate of interest are equal, the rate of interest remains neutral towards prices, in that it does not influence the price-level either in an upward or in a downward direction. The development of prices proceeds in accordance with the dispositions and expectations of the public. But a neutral rate of interest does not imply an unchanged price-level, except in a community which has attained perfect stationary equilibrium, and in which there is no net increase in capital and output. In a progressive economy, the banks could either maintain equality between the demand for real capital and the supply of savings or keep the price-level stable, but they cannot do both. For, in a progressive economy, where the volume of production and transactions rises, the flow of money must be increased in order to keep the price-level stable. And if there is to be a net inflow of money into circulation, the money-rate of interest should be lowered. If the monetary authority does not inject an additional quantity of money, the price-level must fall. Hence the rate of interest which stabilises the price-level is lower than the rate at which the demand for real capital is equal to the supply of savings. We shall therefore abandon this third attribute of the 'natural' rate of interest. Henceforth we shall treat Wicksell's 'natural' rate as equivalent to the 'marginal efficiency of capital'.

Hitherto we have considered the features of the 'natural' rate of interest. But in a monetary economy, there is another significant rate of interest, namely, the rate of interest on a money loan. In a monetary economy the 'natural' rate and the money-rate do not

coincide. There is always a divergence between the two, because the demand for and the supply of savings do not meet in their natural form, but meet in the form of money. But the quantity of money in existence is directly controlled by the banking system. That is, the banking system can keep the rate of interest at any arbitrary level. The divergence between the 'natural' rate of interest and the loan rate of interest comes about in two ways. Either the 'natural' rate itself varies relative to the loan-rate or the loan-rate varies relative to the 'natural' rate. A divergence between the 'natural' and loan rates of interest would result in a cumulative process of expansion or contraction of prices and production.

In order to understand most clearly the relation between the rate of interest and the price-level it is advisable, as Wicksell did, to start with simplifying assumptions. Let us suppose that the monetary system of the society has the following characteristics:—

1. The monetary system operates in a closed economy. Wicksell assumed that the leading banks of the world act together. But it is sufficient if we confine our analysis to a single closed economy. By doing so, we can safely neglect the complications arising from international transactions in goods and money.

2. A free currency exists in such an economy. Banking is cut loose entirely from any reserves. The monetary authority is under no obligation to keep the currency on a parity with gold or any other commodity. The monetary authority enjoys complete autonomy as regards the credit policy it pursues.

3. The creation of credit as well as the issue of legal tender is centralised under, say, the Central Bank.

4. The credit system is so highly developed in that

economy that there are no cash holdings at all, and all transactions are done by means of instruments of credit.

5. To start with, a stationary equilibrium prevails in that society.

In such an economy the primary causes affecting the price-level are the policy of the monetary authority, the demand for consumption goods, the supply of productive services, and the result of the co-operation of productive services. These causes are partly objective, such as changes in population, wants, productivity, and partly subjective such as expectations and preferences.

The most important instrument in the hands of the monetary authority for influencing the price-level is the control of the rates of interest on deposits and loans. For a while we may neglect the differentiation of interest rates.

With these preliminary notions we may study the effects of a lowering or a raising of the rate of interest. Since we have started with a position of static equilibrium, the 'natural' rate of interest and the market or loan rate of interest are equal. Hence, when we speak of a lowering of the rate of interest, we mean the lowering of the loan rate in relation to the natural rate. Similarly for a raising of the rate of interest. In studying the relation between interest and prices we shall follow in the main Wicksell's theory. Of course, we shall introduce modifications to his theory wherever necessary.

Under these circumstances the thesis which Wicksell develops, is as follows: "If, other things remaining the same, the leading banks of the world[2] were to lower

[2] As indicated above, we shall for the present confine our analysis to a single society. Hence we shall speak of the policy of the leading

the rate of interest, say 1 per cent. below its ordinary level, and keep it so for some years, then the prices of all commodities would rise and rise and rise without any limit whatsoever; on the contrary, if the leading banks were to raise their rate of interest, say 1 per cent. above its normal level, and keep it so for some years, then all prices would fall and fall and fall without any limit except zero."[3]

Let us start with a position of full employment and a rigid investment period. That is, resources in the consumers' goods and capital goods industries are so highly specialised as to constitute non-competing groups. In this case a lowering or a raising of the market rate of interest relative to the 'natural' rate does not give rise to a cumulative process of expansion or contraction. If entrepreneurs want to expand production of capital goods owing to the lowering of the rate of interest and the rise in capital values, it will only raise the price of the factors of production, so that the advantage of low interest costs would be neutralized. Similarly, in the consumption goods industries the advantage of low interest costs would be neutralized by a rise in the price of capital goods. Hence in such an economy the absolute height of the loan rate of interest exerts no significant influence on the general price-level.

Let us now drop the assumption of technical rigidity in the organisation of production, while retaining the assumption of full employment. Let us now study the effects of a lowering the market rate of interest below the 'normal' rate.

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banks within a country rather than that of the leading banks of the world.

[3] Wicksell, "The Influence of the Rate of Interest on Prices", *Economic Journal*, June 1907, p. 213.

When the market rate is lowered the demand for loans increases in a thousand ways and the banks correspondingly grant more credit. An increase in the quantity of money increases the demand for goods in general relative to their supply. Hence prices rise. Thus, according to Wicksell, changes in relative as well as general level of prices can be explained in terms of demand for and supply of goods. "Every rise or fall in the price of a particular commodity presupposes a disturbance of the equilibrium between the supply of and the demand for that commodity, whether the disturbance has actually taken place or is merely prospective. What is true in this respect of each commodity separately must doubtless be true of all commodities collectively. A general rise in prices is therefore only conceivable on the supposition that the general demand has for some reason become, or is expected to become, greater than the supply."[4]

When the rate of interest falls, capital values rise. Production of capital goods is stimulated, because the profitability of capital is greater than the rate of interest. Since we have started with a position of full employment, factors of production can only be shifted from consumption goods industries to capital goods industries at higher rates of remuneration. Thus the increase in demand for labour, raw materials and land raises their prices. And entrepreneurs *can* pay more to the factors of production. With a lower rate of interest, entrepreneurs can borrow more for the same total interest cost. This is most common in the case of long-term investments. For instance, if a railway company could borrow money through the issue of debentures

[4] Wicksell, *Lectures on Political Economy*, vol. II, p. 159.

at 3 per cent. instead of at 4 per cent., it could afford to borrow, and pay 33⅓ per cent. of more money to the factors of production. Hence the production of capital goods is stimulated and their prices rise.

On the other hand, the output of consumers' goods is diminished, since factors of production are partly shifted to capital goods industries. But the demand for consumers' goods increases owing to the increase in incomes of labourers, landowners and owners of raw materials. Hence the prices of consumers' goods rise. Thus every increase in the production of capital goods increases the incomes of people and their demand for consumption goods, and leads to a fresh rise in the price-level of consumption goods.

Thus a fall in the rate of interest below the 'normal' rate leads to a cumulative rise of prices, and this process continues so long as the market rate is kept at the lower level. Though the costs of production of the entrepreneur have increased, he gets higher prices for his product. He is exactly in the same position as before the rise in prices took place. Hence the money demand for goods and services during any period is always greater than their supply and a continuous rise in their prices takes place. Now, if the rate of interest is restored to its normal level, there would be no tendency for prices to go down, because a new level of relative prices will have already been established, and the rise in prices will have been uniformly spread over all commodities. Relative prices will have attained a new equilibrium position once again, and the higher rate of interest cannot disturb that equilibrium. Entrepreneurs would still be able to pay higher prices for factors of production since they expect the same increased prices for their products to continue.

If the inflationist cumulative process is to be stopped, it is not sufficient if the rate of interest is restored to the original level. It has to be fixed at a higher level than that. For, to restore the rate of interest to the original level, when prices are expected to rise has the same effect as a low rate of interest has when prices are not expected to rise.

We need not enter the controversy whether the increased saving as a result of the greater production of capital goods is 'forced saving'. In the case of full employment, there is 'forced saving' from the point of view of the community as a whole, since the redistribution of factors of production from consumers' goods industries to producers' goods industries entails a restriction of consumption. But from the point of view of the individual there is no 'forced saving'.

We shall now drop the assumption of full employment. Let us suppose that there are unemployed resources, especially labour.

If unemployment is confined to consumption goods industries only, and if factors of production cannot be transferred from consumption goods industries to capital goods industries, then, production will not increase in either of the industries owing to a lowering of the market rate of interest. But, if the factors of production can be transferred, then the production of capital goods will be increased. The output of consumption goods may not be much affected. But the demand for them increases. So there will be a rise in the prices of both types of goods, though not to the same extent as in the previous cases.

If there is unemployment in capital goods industries only production of capital goods increases. The

demand for consumers' goods increases and the price of these goods goes up.

If there is unemployment in both types of industry and if factors of production cannot be transferred from one industry to another, then a fall in the rate of interest will increase production in both types of industry. The rise in prices of these goods will be very gradual.

Now we come to the most realistic case, where unemployed resources are present in both types of industry and these resources can be transferred from one industry to another. As a consequence of a fall in the rate of interest production of capital goods will first increase. This increases the incomes of those employed in the production of these goods. They spend a part of their increased incomes on consumption goods and save the rest. The production of consumers' goods increases. There will be a steady rise in the prices of both types of goods. Even after the economy attains full employment, the cumulative process of expansion of prices takes place in the same manner described earlier.

We have now completed our study of the effects of a lowering of the market rate of interest below the 'natural' rate. We have seen that the lower rate of interest starts an expansionist process. The general price-level rises and there will be a change in the level of relative prices also due to the transfer of the factors of production from one type of industry to another. Aggregate production will increase so long as there are unemployed resources present. The problem we have to solve now is how long this cumulative process will continue. Will it continue indefinitely? Or "Will a new stationary equilibrium gradually be

established when capital resources have been so greatly increased that no more capital can be absorbed at existing interest rates?"[5] If individuals expect that present prices will be maintained in the future, then at some point the transfer of factors of production from consumption goods industries to capital goods industries will come to an end, because of the diminishing profitability of capital. The rise in prices too would stop, and the economy would have attained stationary equilibrium. Of course it takes a long time for equilibrium to be established once again. But, if individuals, particularly the entrepreneurs, expect prices to rise higher and higher, then the cumulative process will continue indefinitely.

If the banks kept the rate of interest permanently above the 'natural' rate, effects opposite to those we have discussed above would follow. A cumulative process of contraction of prices and production would set in.

Thus, under the assumptions we have made, there is no limit to either inflation or deflation. The price-level would be absolutely at the mercy of the banking system.

In the actual world we do not come across the type of cumulative processes we have discussed above because the conditions we have postulated are not present. Wicksell himself says that his thesis "cannot be proved directly by experience because the fact required in its hypothesis never happens".[6] In spite of its abstract nature Wicksell's theory contains a profound truth and it will go a long way in helping one to under-

[5] Erik Lindahl, *Studies in the Theory of Money and Capital*, p. 180.
[6] *Op. cit., Economic Journal*, p. 213.

stand clearly the interest-prices relation. His theory brings to light the importance of the rate of interest as an instrument for controlling the course of production and prices. For, in the actual world many of Wicksell's assumptions are present in varying degrees. The development of central banking has conferred enormous powers on the banking system of controlling the quantity of money and the rate of interest. With the cessation of the circulation of metallic money, with the issue of inconvertible paper money and with a highly developed credit system, metallic reserves are losing the pre-eminence they once enjoyed.

The most important contribution of Wicksell to the theory of interest and prices is the point that it is not the absolute height of the market rate of interest, but its height relative to that of the 'normal' rate that is responsible for variations in the price-level. "It can at once be seen that it is quite useless to try to demonstrate the existence of any direct relation between the absolute movements of the rate of interest or of the discount rate and movements of prices."[7]

This relative concept of the market rate of interest explains a fact which appears to be contrary to Wicksell's theory of interest and prices. It is the fact that the market rate of interest and the general level of prices vary directly, both rising or falling together. When trade is brisk and prices are rising, the rate of profit on capital is high. The rate of interest on money follows the same course, but with a time-lag. The rate of profits being higher than the market rate of interest is the same as the market rate being kept lower than the 'natural' rate. "In one word the interest on money

[7] Wicksell, *Interest and Prices*, p. 107.

is, in reality very often low when it seems to be high, and high when it seems to be low."[8]

Hitherto we have studied the interest-prices problem under certain simplifying assumptions. Now we shall study how far they have to be modified if our analysis is to be applicable to real conditions.

In the first place, cash-holdings are present in the real world. We do not have a completely developed credit system. We have already studied the importance of and the reasons for cash-holdings. The desire for cash-holdings is the result of uncertainty. With an increase in uncertainty liquidity-preference increases, and this retards the acceleration of the cumulative process of investment.

Again, the banks cannot entirely dispense with metallic reserves. There is a limit to the capacity of the banks to increase the supply of credit. They cannot go on expanding credit *ad infinitum*. That is, the cumulative process of contraction or expansion cannot go on indefinitely.

It may also happen that the Central Bank's authority over the other banks in the country is not complete, and the actions of the Central Bank may very often be nullified by a deliberate action on the part of the other banks. But this complication is not of much importance in countries where central banking has developed appreciably. Because of their control of the note-issue and because they are the lenders in the last resort, the Central Banks do exert very great influence on the banking system.

Another source of complication in the real world is that there is no one rate of interest. There are divergent rates, as we have already noted, depending

[8] Wicksell, *op. cit., Economic Journal*, p. 217.

upon the length of the time for which the loan is made and the degree of risk present in each loan. We have earlier discussed the significance of the interest-rates differentiation. Changes in the short-term rates of interest have a little influence on investment in liquid goods owing to the lower storage costs. Long-term rates of interest have a decisive influence on investment in fixed capital. For reasons we have discussed in the previous chapter, while the banking system's control of the short-term rate is absolute, its control of the long-term rate is not complete. Hence the banking system's ability to stimulate an expansionist process of investment is limited.

In our hypothetical case, we were under the impression that the 'normal' rate of interest (*i.e.*, the marginal efficiency of capital) remains constant while the cumulative process takes place. But this is not true. The marginal efficiency of capital itself varies with the market-rate of interest. When the market rate is lower than the marginal efficiency of capital investment is increased. But the increase in investment brings down the marginal efficiency of capital to the level of the market rate of interest. And with this the cumulative process stops. If production and employment are to rise further and further the market rate of interest will have to be continually lowered.

Then we have to consider complications due to international relations. No economy in the world is 'closed'. In fact, the more industrially advanced an economy is, the greater is its contact with international economy. Hence the monetary policy of an economy cannot be completely out of harmony with the monetary policies of other countries, especially when there is a common currency link between them as in the case of

the International Gold Standard. If the rate of interest in a country is too low it may lead to transfer of investible funds from that country to another. If a country's price-level is unduly high, it may lead to the import of goods from foreign countries. The domestic price-level is not independent of the price-level of other countries. Of course, since the Great War economies are becoming practically 'closed' owing to the abandonment of the International Gold Standard and the restrictions imposed on international trade. The Central Banks have now greater freedom to pursue any monetary policy and hence they can influence prices and production to a very great extent.

Apart from these purely monetary factors, there are certain technical, psychological and institutional factors which often retard the progress of industrial activity. Any lowering of the rate of interest may not lead to an expansionist process beyond a limited extent. In the first place, productive resources are not homogeneous. Very often they are not interchangeable. Thus in certain industries the elasticity of supply of factors of production will have reached zero, while in many other industries there will be unemployed factors. Then there are many rigidities in the economic system. Factors of production are immobile in various degrees. Prices of factors of production are not flexible. They do not move quickly when there is a change in the relation between the supply of and the demand for the factors.

Again, the real economic world is dynamic and not stationary as we assumed. Expectations play a dominant part in the determination of output and employment. The public may have no confidence in the permanence of the policy of the monetary authority.

Hence the liquidity-preferences of the public may rise and no fall in the rate of interest may induce investment.

The several complicating factors we have enumerated above do not invalidate our fundamental thesis that the banking system can influence the course of prices and production by pursuing a suitable interest-rate policy. These factors in the situation serve only to emphasise the point that in the world as it is, an interest-rate policy does not lead to a cumulative process *ad infinitum*, but that the intensity of the cumulative process will be lower than it is in our hypothetical case. The banking system by varying the terms of lending and the quantity of money can influence the rate of production of capital goods as well as that of consumption goods, and thus regulate the total demand for commodities. Hence the rate of interest is one of the most important instruments in the hands of the monetary authority for controlling the general as well as the relative level of prices. Now we should study the ideal way in which the banking system should use this instrument of control. This leads us to the theory of monetary policy.

CHAPTER XIV

RATE OF INTEREST AND THE PRICE-LEVEL (*Continued*)

It is beyond our scope in this chapter to discuss the wider aspects of the theory of monetary policy. Our object here is a narrower one. We shall examine whether it is possible to achieve the several ideals of monetary policy through a control of the complex of rates of interest by the monetary authority.

The major economic problem of every country to-day is the problem of controlling booms and depressions, and of utilizing human and material resources as fully, continuously and efficiently as possible. We have failed miserably in conducting our monetary and economic affairs to promote maximum production and employment. And we no longer believe that there are natural forces in the capitalist world, which, unaided, can ensure maximum economic well-being. We have come to believe that some kind of deliberate and concerted monetary policy by the State or its agent is an indispensable pre-requisite of the smooth and efficient working of the economic system. We have noted already that the control of the complex of rates of interest is one of the most important instruments in the hands of the monetary authority for influencing the trend of production and prices. Now we must discuss the possible ways in which this instrument of monetary policy can be used, and we should decide upon the most practicable and the most desirable one.

It is not necessary for us to dwell at length on the nature and causes of the trade cycle. The trade cycle is a highly complex phenomenon. A complete explanation of the trade cycle will have to take into account various economic factors. However, there is one factor which is considered by the majority of economists to be the most important factor in the explanation of the trade cycle. (It is the factor of money and bank credit. Money and credit occupy a central position in our economic system.) Money and credit link the various markets of the economic system. Money is also a link between the present and the future. Demand and supply are expressed in terms of money. And to-day the banking system possesses enormous powers of creating money by various means. And in the last chapter we have studied how by lowering or raising the rate of interest (and thus by increasing or diminishing the supply of money) (the banking system can exert a predominant influence on the level of prices and output.) It is, therefore, most natural for economists to deduce from this relation between the rate of interest and the price-level that fluctuations in prices and output are primarily due to a wrong credit policy pursued by the banking system.) Therefore, different schools of the monetary theory of the trade cycle recommend different norms for interest-rate policy to be pursued by the banking system in order to achieve a particular ideal, which, they believe, will control booms and depressions. It is with these norms for interest-rate policy that we are concerned in this chapter.

We shall content ourselves with considering only two objectives of monetary policy, because they are the most fashionable and each of them commands

a wide following of eminent economists. The first objective is the stabilization of the general price-level. The second objective is that money should be neutral towards the formation of prices.

The economists who recommend the stabilization of the price-level are those who pay the greatest attention to the influence of changes in the rate of interest on the *general* price-level. According to this school of thought, changes in the flow of money and credit are the main cause of fluctuations in prices and output, of the alternation of prosperity and depression. The banking system, by means of credit expansion and credit contraction, influences the demand for goods and services in terms of money, and hence affects the movement of prices and production. The analysis of this school regarding the effects of changes in the rate of interest (and therefore changes in the quantity of the supply of money and credit) on the level of prices and output is practically the same as the analysis we gave in the last chapter, except that this school pays greater attention to changes in the general level of prices and their influence on output of goods rather than to the effect on relative prices. As we have observed, in the actual world a cumulative process of expansion of output and prices cannot go on indefinitely, because the banks cannot extend credit *ad infinitum*, due either to the depletion of their cash reserves or to the outflow of gold owing to the rise in prices, if the country is on the gold standard. The banks, therefore, contract their credit by raising the rate of interest. The contraction of purchasing power depresses industrial and business activity, the total money income of people shrinks and there will be a fall in the general level of prices. The process of contraction too

is cumulative and this goes for a long time, until there is again a revival of prices and output, by a lowering of the rate of interest made possible by the accumulation of cash, return of business confidence, etc. Thus, the way in which it is being operated, the Bank Rate is no longer a "most delicate and beautiful instrument" for regulating the price-and-money-income structure. It is responsible for severe fluctuations in prices and incomes and is very often brutal in its effects. This kind of excessive fluctuations in prices, output and incomes is very injurious to the economic well-being of a country. Under these circumstances the idea of the stabilization of the level of prices as a factor in the control of booms and depressions came to prominence and faith was lost in the mechanism of the Bank Rate and the international gold standard.

Before we deal with the problem of the stabilization of the price-level, we had better offer some criticism of the view that the reason for the collapse of the boom is the rising tendency of the rate of interest. There is no doubt that the rise in the rate of interest is one of the factors in the collapse of the boom. But the most important reason for the collapse is, as Mr. Keynes has pointed out, "a sudden collapse in the marginal efficiency of capital".[1] Towards the later stages of the boom people expect that the marginal efficiency of capital will be high enough to offset the rise in the prices of capital goods and the increase in their quantity. When once the marginal efficiency of capital falls, the liquidity-preference of the public is strengthened and thus the rate of interest rises. Thus, though the fall in the marginal efficiency of capital and the rise in the rate of interest go together, "the essence

[1] Keynes, *General Theory*, p. 315.

of the situation is to be found, nevertheless, in the collapse in the marginal efficiency of capital".[2] This is precisely the reason why during the depression even an exceedingly low rate of interest fails to bring about recovery. That is to say, the reason for the collapse of the boom is more psychological than monetary. Moreover, the long-term rate of interest is fairly stable over time. This excludes the theory which attributes the breakdown of the boom to the rise in the rate of interest, since investment in capital goods is mainly dependent on the long-term rate.

Now we shall get along with the subject of the stabilization of the price-level. There are many criteria for the stabilization of the price-level. Some recommend a stationary price-level, others a slowly rising price-level, and a few others a slowly falling price-level. The object of any policy of stabilization of the general price-level should not be merely to keep the value of money at a particular point, but to maintain and enlarge the volume of production and employment. The problem of the stabilization of the price-level is the problem of maintaining equilibrium of the margin between prices and costs, of ensuring the reasonable profitableness of the production of goods and services. To put the same thing in another way, there must be a proper relationship between the various prices. Otherwise disequilibrium arises in the economic system. For instance, the most important reason for the 1929–30 slump in the U.S.A. was the excessive growth of profits without a corresponding rise in wages and salaries.

We need not discuss the respective merits of the case for a stationary price-level, the case for a slowly

[2] Keynes, *General Theory*, p. 316.

rising price-level and lastly the case for a slowly falling price-level. What we are concerned with here is how far it is possible to achieve these objectives by deliberate monetary policy, in particular, by manipulating the rate of interest.

The argument of those who recommend stabilization of the general-price level is that the banks should control their rates of interest in both the active and passive aspects. In the active aspect, it is suggested that first the rate of interest should be lowered to induce a rise in prices and an expansion of output and that it should be raised before the boom reaches dangerous heights, and thus stabilise output and the level of prices. Various difficulties are involved in this proposal. (1) In the first place, it is difficult to find the true index of the intensity of the boom. The general price-level is a very vague and elusive thing. It is an average of averages. It throws no light on the position of relative prices, and the relative importance of particular groups of commodities. (2) Moreover, in the present world expectations regarding future prices and profits play a more important part in the further rise of prices and output than the rate of interest which may lose its power as a regulator. In such periods variations in the rate of interest might have to be very violent in either direction to maintain equilibrium. This causes disturbances in the business world. (3) And very often the control of the banking system over the rate of interest, especially long-term, is not complete. Hence it is extremely doubtful if the banks could stabilise the general price-level by a control of the complex of rates of interest.

In the passive aspect, it is suggested that corresponding to changes in the general level of prices the rate of interest should be varied in a compensatory

manner in order to preserve equilibrium. Prof. Irving Fisher's 'real' rate doctrine is an instance of this. Prof. Fisher distinguishes between 'real' interest and 'money' interest. According to Fisher the 'real' rate, expressed in terms of a particular group of goods, fluctuates widely owing to changes in the value of money. Fisher's 'real' rate is got by correcting not only the interest but also the principal for price changes. It is in this that the 'real' rate of interest differs from 'real' wages. Because of the inclusion of the principal for correction owing to changes in the value of money the 'real' rate is said to vary very widely. Thus Fisher states, "The real rate of interest in the United States from March to April, 1917, fell below minus 70 per cent.! In Germany at the height of inflation, August to September 1923, the real rate of interest fell to the absurd level of minus 99.9 per cent."[3]

The fallacies in the 'real' rate doctrine of Fisher have been most illuminatingly pointed out by Prof. Adarkar. For one thing, Fisher is wrong in including the principal also for correction of price-changes. The principal is in many cases not at all returned as in the case of Consols, or returned after a very long-time as in the case of debentures, and even if it is returned it is re-lent. That is why the lender and the borrower are not hit or benefited to any appreciable degree by changes in the value of money. As Prof. Adarkar says, "The fact is that money capital, whether short or long, is a *continuous* process, a mobile fund; it is continually embodied in real capital, either over long periods or over a series of short-periods, according to the preference of the lender."[4]

[3] *Theory of Interest*, p. 44.

[4] *Op. cit.*, p. 10.

Changes in the general level of prices are no doubt of some importance when we take into account only the interest, but not the principal. Changes in the value of money are of importance to the lender in so far as interest is a source of regular income to him. In the same way they would be of importance to the borrower as an element of cost. In this way the 'real' rate would be of as much significance as the concept of real wages. But the 'real' rate as applied to the principal is of no importance for one more reason. When there is a rise in the general level of prices, the entrepreneur who carries on the industry makes a profit, not at the expense of the lender, but really at the expense of the other factors of production whose prices have not risen correspondingly.

The 'real' rate doctrine as a guide to banking policy would lead to absurdities. Thus, if the general price-level rises by 10 per cent., and if a 'real' rate of 5 per cent. is to be established, then a money rate of 15.5 per cent. is necessary. Moreover this doctrine ignores the fact that one of the most important causes for changes in the general price-level are changes in the rate of interest itself. To say that the money rate of interest (which has given rise to a rise or fall in the price-level) should be fixed at a different level to restore the 'real' rate at the normal level is meaningless and involves circular reasoning. Even if the changes in the general-level of prices are not due to a variation in the money rate of interest, a raising of the money-rate to such stupendous heights like 15.5 per cent. is not at all necessary. A small rise in the money-rate is sufficient to check the rise in prices.

So far we have considered only one instrument of achieving the stabilization of price-level. There are

other monetary, as well as non-monetary factors like taxation, public works policy, and rigidity or flexibility of the prices of the factors of production which decide the success or failure of any policy of stabilization. So many difficulties are involved in the pursuit of a policy of price stabilization. There is no guarantee that a mere stabilization of the general price-level will ensure a stabilization of employment and output at an expanding rate. But we need not despair that to search for economic stability in price stabilization is to pursue a will-o'-the-wisp. Though price stability cannot be a remedy for all ills of the economic system, it is far more conducive to smooth economic progress than no stability at all.

Now we shall take up for consideration the neutral money doctrine of a group of Austrian economists of which Prof. Hayek is the outstanding figure. The object of the neutral money doctrine also is to mitigate the occurrence of industrial fluctuations. Unlike the purely monetary theorists of the trade cycle, the economists of the neutral money doctrine hold that the trade cycle is not merely a monetary phenomenon. This school of thought analyses the effects of fluctuations in the supply of bank money not so much in terms of fluctuations in the general price-level as in terms of fluctuations of relative prices, and their effects on the time-structure of production. Accordingly these economists abandon the concept of *stable* money and talk in terms of *neutral* money.

It is not necessary for us to trace at length the Austrian theory of the trade cycle as expounded by Prof. Hayek. We have briefly indicated his theory while considering the Austrian theory of interest. According to Prof. Hayek, the lowering of the market

rate of interest below the 'equilibrium' rate leads to a relative increase in the production of capital goods and a lengthening in the structure of production. Factors of production are shifted from the production of consumption goods to the production of capital goods. All this is familiar to us. But according to Prof. Hayek this process cannot go on for ever. Gradually the borrowing of the entrepreneurs are paid out as wages, rent, interest, etc. The demand of these income-receivers for consumption goods increases and the scarcity of these goods raises their price-level relative to that of the capital goods. There is a relative over-production of capital goods in terms of consumption goods. The structure of production becomes top-heavy. Many extensions in the structure of production cannot be completed. The error of the initial anticipations regarding profits becomes revealed. And the banks too cannot expand credit *ad infinitum*. So they raise their rate of interest and restrict the supply of credit. For these reasons, the boom comes to an end. Thus the most important factors in Prof. Hayek's explanation of booms and depressions are two. The first is the fact that the banking system, by artificially lowering the rate of interest, increases the supply of money, and is thus responsible for a maldistribution of resources and a distortion in the structure of production which ultimately leads to a collapse of the boom. Secondly, the boom cannot last long because of the shortage of saving. The increase in incomes of those who are employed in the capital goods industries is not saved but goes towards the raising of the demand for consumption goods. Hence Prof. Hayek's proposal for controlling the trade cycle is that the banks should not artificially increase the supply of money, but that they

should keep the effctive quantity of money in the economic system fixed. Equality should be established between the volume of current saving and current investment. The rate of interest that establishes equality between current saving and current investment and which also keeps the effective quantity of money constant is called the 'equilibrium' rate of interest. When the market rate and the 'equilibrium' rate are equal, money is said to be neutral towards prices.

We shall not go to the extent of criticising Prof. Hayek's theory of the trade cycle. We shall only study the implications of the 'equilibrium' rate of interest and 'neutral' money. His conception of the 'equilibrium' rate of interest is rather vague. And as for the definition of a neutral money system we may adopt Mr. J. E. Meade's. "A neutral money system is one which simply interprets the decisions of individuals, of companies or of the Government without, by its own action or inaction, making the effects of such decisions different from what they would have been in a non-monetary economy."[5]

It is extremely doubtful in the first place, whether the 'equilibrium' rate of interest is able to perform both the functions of keeping the total effective quantity of money constant and at the same time maintaining neutrality. Now the total effective money in the community is the aggregate quantity of the media of exchange times their velocity of circulation; and both of them vary. And when a change occurs in any one of these magnitudes, the banking system will have to correct it by varying the other to countervail correspondingly. Prof. Hayek himself admits the need for

[5] *The Rate of Interest in a Progressive State*, p. 11.

such corrections (*i*) to offset changes in the velocity of circulation, (*ii*) to counteract such changes in the co-efficient of money transactions as are occasioned by the amalgamation of firms, and the like, and (*iii*) to provide for any changes in non-monetary means of payment, such as book credit, that may be taking place. To effect corrections for changes in these magnitudes certainly involves the violation of neutrality. Moreover, it is very difficult to measure the changes in these magnitudes accurately and in time. Errors of estimation are likely to have serious consequences of inflationary or deflationary movement.

In the second place, it is not certain whether the 'equilibrium' rate can equilibrate real savings and investment and at the same time keep the effective quantity of money constant in the sense of correcting for changes in the velocity of circulation.

In a progressive economy ("an economy in which output per head is increasing")[6] where the quantity of effective money is fixed, the general price-level will fall over a period of time. This has grave consequences so long as productivity varies and does not remain constant. In the modern world, due to the advancement of science, increasing productivity is on the whole the normal state of affairs. Now when the productivity of individual industries rises, their unit costs fall. Since the quantity of money remains constant, the price-level must fall. But the banking system cannot lower the individual price of commodities. Hence there is no guarantee that the fall in prices will take place in those commodities that are produced at lower costs. If the prices of some of these commodities are

[6] Meade, *op. cit.*, p. 1.

held above their costs, the effect of neutral money will be to force down the prices of commodities whose costs have not fallen. Thus the equilibrium between costs and prices will be upset. Of course this disequilibrium between costs and prices does not occur if perfect competition is prevalent in the economic system. But the assumption of the prevalence of perfect competition is grossly unreal.

We should also consider the effects of a constant stock of money on wages. According to Dr. Hayek's thesis the increase in productive efficiency leads to a decline in the price-level; but the average money wages must remain stationary. But labourers are psychologically averse to a constant level of wages though prices are declining. They would rather prefer a constant price-level and a rising wage. Again, when productive efficiency is rising piece rates have to fall, if equilibrium is to be maintained. But the labourers organised in powerful trade unions demand a rise in money wages, both time-rate and piece-rate. Thus it is difficult to see how frictions and maladjustments can be avoided.

Moreover, certain contracts are fixed in terms of money for a long time. For instance, the rate of interest payable on debentures is fixed in terms of money. When money prices are falling, the debenture-holders receive disproportionately high interest in terms of real goods and services. And the presence of such fixed money costs as interest on debentures may lead to several bankruptcies, often very premature. The swelling-up of fixed money costs lowers the normal profits of many industrial and business concerns. These consequences are disastrous to industry.

These are some of the grave consequences of a 'neutral' money system. Instead of leading to stability

and progress, it appears as though a 'neutral' money system leads to disequilibrium and maladjustment. Prof. Hayek's doctrine of 'neutral' money presupposes the existence of perfect competition and rubber-like elasticity in the economic system. His 'neutral' money is nothing but a new term for the old conception of 'veil of money'. It is extremely doubtful whether a theory of barter economy is useful in the understanding of monetary phenomena. A barter economy is not necessarily a stable economy; changes in fashion, habits and inventions do occur in a barter economy also. There will be no equilibrium even in a barter economy if different goods serve for different persons as a store of value. And this is much more true in the case of a monetary economy. Prof. Hayek completely neglects the fact that the actual world is full of uncertainty, and that expectations play a large part on current economic behaviour. He attaches no importance to the function of money as a store of value. He seems to be totally unaware of hoarding or high liquidity-preference. Even in a 'neutral' monetary system there will be some hoarding. This hoarding does retard investment activity, unless the monetary authority intervenes by increasing the quantity of money. Hence the existence of money and static equilibrium are incompatible.

Prof. Hayek's most important object in recommending a 'neutral' money system is to achieve equilibrium between real saving and investment, and to prevent 'forced' saving. Readers of Mr. Keynes's *General Theory* will realise that no object is served by trying to equilibrate saving and investment because they are always equal. Every increase in investment leads to a corresponding increase in saving. So the object of the

monetary authority should be to promote investment and allow saving to take care of itself. We have therefore no use for delightfully vague concepts like 'equilibrium' rate of interest, or the 'natural' rate of interest. These rates only preserve *status quo* and hence they are of significance only in a stationary economy with full employment.

As Prof. Adarkar remarks, "underlying the whole concept of Neutral Money, there is to be found a great abhorrence for any active, exogenous policy—a philosophy of defeatism and nihilism, the mental configuration of a terrified Alice in Wonderland".[7] The marvellous industrial and commercial progress of the world is to a very great extent the result of a highly developed banking and credit system. It is unwise to suggest that the monetary authority should be passive. By following a bold credit policy the banking system can stimulate industrial activity, so long as there are unemployed resources. And the assumption of full employment is far from reality. That means active intervention by the banking system is necessary to promote maximum production and full employment. And it is gratifying to know that Prof. Hayek confesses that "money is of course never 'neutral' in the sense of being merely an instrument or servant: it always exercises some positive influence on the course of events".[8]

We therefore reject the schemes of stable money and neutral money. Our object should be to promote full employment by all means at our disposal, especially by means of appropriate interest rate policy. We

[7] "Prof. Hayek's Neutral Money Doctrine", *Indian Journal of Economics*, January 1937, p. 268.

[8] *The Pure Theory of Capital*, p. 407.

ought not to think of depressions, but maintain the boom till such time as full employment is attained. "The right remedy for the trade cycle is not to be found in abolishing booms and thus keeping us permanently in a semi-slump; but in abolishing slumps and thus keeping us permanently in a quasi-boom."[9] That is why Mr. Keynes suggests that "the remedy for the boom is not a higher rate of interest but a lower rate of interest".[10] The rate of interest should be continuously lowered to that point relatively to the marginal efficiency of capital at which there is full employment.

It is not however possible to achieve the ideal of full employment solely through monetary policy. A bold and vigorous monetary policy has to be supplemented by other means. We must manipulate those factors that affect the rate of investment and the propensity to consume, for these two, between themselves, determine aggregate incomes and employment. We must stimulate the propensity to consume by various means such as a more equitable distribution of wealth and consumer's credit. The rate of investment should be accelerated by appropriate credit policy and by a policy of public works. But there are certain factors in the capitalist system which do not make for harmony and progress. The most dangerous of these factors is the psychological expectations of the public. In the present world, expectations regarding the future vitally affect the volume of business activity. When business confidence is high, industry and trade are brisk and employment increases. Then, for some unknown reason, business confidence is shaken, and the marginal

[9] Keynes, *General Theory*, p. 322.
[10] *Ibid.*, p. 322.

efficiency of capital collapses and liquidity-preferences of the public are unduly strengthened. There is a violent contraction of output leading to severe unemployment and waste of economic resources. Very often the breakdown of confidence is not at all due to genuine reasons. These expectations or the errors of optimism and the errors of pessimism would not be so injurious to industry and trade if there were a variety of opinion among the public regarding the future. In that case errors of optimism and errors of pessimism would cancel one another. But actually these errors move in one direction. The minds of entrepreneurs work in a team. There is a subtle sympathy which unites the entire business world, for "we devote our intelligences to anticipating what average opinion expects the average opinion to be."[11]

It is practically impossible to control the expectations of the public in any effective way in an individualist economy. Mr. Keynes concludes "that the duty of ordering the current volume of investment cannot safely be left in private hands".[12] A certain amount of centralized economic planning is very desirable if the industrial system is not to breakdown. And happily almost all nations are attempting to find a half-way house between the complete anarchy of capitalism and the complete regimentation of the Russian model. The object is to combine the merits of private enterprise with the benefits of central co-ordination. The experiment is by no means discouraging.

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[11] Keynes, *op. cit.*, p. 156.
[12] *Ibid.*, p. 320.

CHAPTER XV

CONCLUSION

WE have now finished our study of the theory of interest. We have answered all the problems we raised in the beginning of this essay. We have examined in detail the various theories of interest from the earliest times to the present day. And we have analysed the real nature of interest and the various influences that are operating on it. We have also studied in detail the central part it plays in the working of the economic system. While there are differences of opinion among economists as to the relative importance of the forces determining the rate of interest, there is unanimity among them as to its importance in the economic system. Low interest-rates are welcomed by academic economists as a major factor in recovery and as a stimulus to a process of expansion. Business community too welcomes a policy of cheap money. Fluctuations in output and prices have been explained in terms of changes in the rate of interest. Thus the rate of interest has come to be regarded as a regulator of the economic system.

Yet, beneath the outward acceptance of the importance of the rate of interest there has been widespread bewilderment and scepticism regarding its claim to be a regulator of the economic system. The question is asked as to why a low rate of interest should induce the trader to increase his stocks and the entrepreneurs to undertake long-term investment. If the trader stocks more goods, it is because he expects

a rise in demand and prices. Then it is not low interest-rate that is the cause of the increase in stocks. It is also doubted whether a low rate of interest will induce a large amount of long-term investment. If long-term investment is to be undertaken, a rapid rate of obsolescence will have to be allowed for. The future is uncertain and any machine may become obsolete at any moment owing to inventions. So the capital good must be able to pay for itself in a short period. And it is held that when new capital construction is undertaken building costs are of greater importance than the rate of interest.

Many economists have statistically verified the importance of the rate of interest as a factor in influencing business decisions, and come to very interesting conclusions. Thus Mr. Carl Snyder of America formulated the view that the rate of interest is not an important element of cost and that therefore changes in the rate of interest cannot explain the occurrence of business cycles. Recently, in an article in the *Oxford Economic Papers,* No. 1, Messrs. J. E. Meade and P. W. S. Andrews have endeavoured to appraise the influence of the rate of interest on business-men's decisions with respect to both the scale of current activity and new investment. The articles are based on questionnaires submitted to 37 British business-men, drawn from a wide range of enterprises. The sample is thus small, but this defect is partly offset by nearly unanimous agreement. According to them, "There is almost universal agreement that short-term rates of interest do not directly affect investment either in stocks or in fixed capital."[1] The reason for this is

[1] Meade and Andrews, *op. cit.*, p. 28.

that changes in the short-term rate are too small compared with the rate of profit. Similarly the majority of businessmen expressed the view that the long-term rate of interest too does not affect investment directly, except in the building and public utility industries. The principal reason appears to be that changes in interest-rates are usually small relative to changes in other relevant expectations like demand, prices, profits and construction costs. Another important reason seems to be that a number of businesses have sufficient funds at their disposal for the replacement and extension of plant. These conclusions have been broadly confirmed by a more detailed enquiry undertaken by the Oxford Economists' Research Group, which issued questionnaires to 1,308 British businesses, regarding the influence of the complex of rates of interest on businessmen's decisions with regard to repairs and maintenance of plant, extensions of plant and the size of the stocks held.[2]

Lastly, Prof. Hayek in a recent book, writes: "The main point on which this revised version differs from my earlier treatments of the same problem (the problem of crises and depressions) is that I believe now that it is, properly speaking, a rate of profit rather than a rate of interest in the strict sense which is the dominating factor in this connection."[3]

All this evidence apparently goes to prove that the rate of interest has no appreciable influence on business activity and that expectations regarding future profits are of greater importance. We do not deny that there is a large element of truth in the arguments of the economists we have referred to. We

[2] P. W. S. Andrews, *Oxford Economic Papers*, No. 3, February 1940.
[3] *Profits, Interest and Investment*, p. 1.

ourselves have admitted more than once that the rate of interest is not the only factor that affects investment activity. In particular, variations in interest rates pertaining to old investments in fixed and circulating capital have no influence on production from the cost angle. The state of expectations, the prices of factors of production and the rate of profits, in the sense of the marginal efficiency of capital, are the other important factors which determine the volume of investment. And we have noted how, under certain conditions, when expectations are very low the rate of interest may lose all importance as a regulator. But this is far from holding the view that the rate of interest has no direct influence on business activity.

The rate of interest is an important factor for several reasons. In the first place, there are certain industries engaged in the production of durable consumption goods like building, and public utility services, which borrow on long-term and are vitally affected by changes in the rate of interest. The demand for these goods is steady and can be foreseen. There is no fear of uncertainty and obsolescence. And many investments are undertaken by public bodies like municipalities not for profit but for communal benefit. In these industries the capital goods are so longlived that the rate of interest is an important element of cost. A lowering of the rate of interest will increase capital expenditure of this kind and such expenditures are growing more and more important.

Again, to-day governments undertake public works policy in order to mitigate cyclical fluctuations in investment activity. So the governments have to raise money either by taxation or by loans. Usually a larger proportion of money is raised by means of loans. And

the rate of interest will be an important factor influencing the volume of expenditure on public works. The governments too have to balance their budgets, at least in the long run, and a low rate of interest by diminishing interest charges would certainly increase expenditure on public works.

Moreover, changes in the rate of interest by raising or lowering security prices appreciably influence business activity. A lowering of the rate of interest will raise security values. This is considered to be a sign of confidence and business is stimulated. Individuals are induced to spend more because of the rise in security values and the consequent capital gains. The rise in security prices improves the balance-sheet position of companies which hold marketable securities. The cost of raising new capital will be lowered. All this is bound to induce companies to extend their activity. And the rise in value of durable capital goods results in a rise in their prices, and so long as these prices exceed the cost of construction the production of longlived capital goods is stimulated. Thus the most important way in which the rate of interest influences business activity is in its *capitalisation* aspect and not in its *cost* aspect.

Again, as we have already showed, changes in the rate of interest are synonymous with changes in the quantity of money supplied by the banks. A lowering of the rate of interest is accompanied by an increase in the quantity of money, and this increases the liquidity-position of entrepreneurs. The presence of large liquid resources induces entrepreneurs to expand activity.

Thus, the rate of interest exercises considerable influence on the volume of production and the level of prices. The rate of interest may not be all-pervasive

in character. For one thing it is not Alladin's Wonderful Lamp. People may refuse to call it the regulator of the economic system. But it cannot be denied that the rate of interest is one of the most important factors that make for progress and equilibrium. Its importance can never be exaggerated.

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B. ARTICLES

The following abbreviations are used.

AER. = American Economic Review.
Ec. = Economica.
Ect. = Econometrica.
EJ. = Economic Journal.
ER. = Economic Record.
IJE. = Indian Journal of Economics.
ILR. = International Labour Review.
JPE. = Journal of Political Economy.
JRSS. = Journal of the Royal Statistical Society.
QJE. = Quarterly Journal of Economics.
RES. = Review of Economic Studies.
RESt. = Review of Economic Statistics.

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INDEX

INDEX OF AUTHORS

INDEX OF DEFINITIONS

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