

## Chapter II

MANAGING THE QUANTITY OF MONEY.

## The Bank Rate.

Genesis of Bank Rate Technique.

In a money economy, fluctuations in economic activity are reflected in the volume of money-payments. Control of <sup>the</sup> volume of money, therefore, provides an essential weapon for controlling the economic activity in general. In modern communities, as most of the business transactions are carried on with the help of bank money, control of the volume of money necessarily implies the control of bank money. One of the most important and the earliest of the instruments of controlling the volume of money is Bank rate, the rate of interest charged by a central bank for rediscounting certain prescribed securities or commercial bills.

The raising of rate of interest as a factor influencing trade-activity presupposes certain conditions of financial transactions arising out of commodity transactions. The first condition is that money payments to be made and received should be carried through specialised institutions such as banks which would charge their customers a certain price called interest for the funds they advance and the services they render. Secondly, the banks must be dependent upon the central bank for advancing loans to their customers beyond a certain level which is normally determined by their own resources. After the exhaustion of their own cash resources, when the banks approach the central bank for further cash, the latter would charge them a certain rate of interest which is known as the Bank rate. The central bank of a country can discourage or encourage business borrowing from banks by charging a higher or lower rate of interest to the latter. This means that the central bank, through its bank rate technique, can discourage or encourage business activity by influencing

the terms on which the business community can borrow from the banks. The above mentioned two conditions necessary for the control of the quantity of money by means of the Bank rate technique prevailed in England in the later first half of the 19th Century. By that time in England, there developed a special system for making payments on account of commercial transactions which is known as the bill system. As the trade between any two distant places developed beyond casual and occasional adventures, and assumed some degree of regularity, the merchants in one place sending goods to a distant place began to draw a bill on the purchaser himself. This necessitated, no doubt, a prior agreement on the part of the purchaser of the goods both to purchase the goods and to accept the bill. With the development of communications such agreements became more practicable. Once the purchaser accepted the bill, it became an evidence of his debt to the seller. As the purchaser was not able to pay off his debt immediately, some one else ~~it~~ must be there to take charge of the debt on behalf of the purchaser for some period. This service of accepting the debt of the purchaser was rendered by banks. It was to render this service in respect of the bills drawn for the internal trade in England that the English banking system grew up<sup>1</sup>. The business of accepting other man's debts incidentally gave deposits to the banks, for, the traders made the bills payable to the banks and were willing to leave the collection of the bills with the banks on deposit. When the banks gave the facility of meeting the debts of the purchasers of the goods during the time they might dispose of their goods and realise cash, the purchasers found this to their convenience, and, therefore, they naturally turned to banks for getting their debts accepted by banks. At a particular time, the banks would be accepting new debts and also getting the old

1. R.G.Hawtrey, 'A Century of Bank Rate'. London 1938, p.5.

debts redeemed, so that with a given amount of cash at their disposal, they could carry on the discounting business without feeling any shortage of cash. With these developments, one of the two conditions noted above, was fulfilled and the discount charges of the banks began to exercise a powerful influence on the <sup>volume of</sup> debts that were offered for acceptance at a particular time.

The discount charge or the rate of interest for rediscounting bills depended upon the resources of the banks which, if found being exhausted, would cause the banks to charge a higher rate of interest on loans and advances to bill brokers or a higher rate of discount if they directly discounted bills.<sup>1</sup> When the sellers of bills predominated over the buyers of bills in number there would be felt a general shortage of cash. In such a situation the banks were obliged to approach the Bank of England which occupied a predominant position in the financial organisation of England. The rate that was fixed by this bank for its own discount business proved a standard rate.<sup>2</sup> The Bank of England encouraged or discouraged the demand for rediscount by lowering or raising its own rate of discount.

However, in England, the use of Bank rate for the purpose of controlling credit was established much later after the development of the bill system. This was because of the prevalence of usury laws

1. In England, originally, the banks were highly localised. The result was that the country banks, except at harvest time and other busy seasons, were in possession of surplus funds to be employed profitably, while the banks in industrial centres were falling short of funds due to rising business activity around them. In this circumstance, the bill broker rendered a special service by bringing about an even distribution of the financial resources of the country. He received the bills from the centre where there was a comparative shortage of funds and got them rediscounted at other places. For this service they charged commission. They also began to hold the bills on their own account and arranged the bills in different maturities and yields and then sold to the banks according to their preferences. This business necessitated some time borrowing from banks. (W.T.C. King. History of London Discount Market. London 1936, p.6)

2. Bagehot. Lombard Street. 14th Edn., 1920, pp. 110.

which prevented the Bank of England rate or the Bank rate from rising beyond 5 per cent. Again, the principle of a fixed discount rate in order to avoid discrimination against any borrowing party did not allow desired changes in the rediscount rate of the Bank of England. In the absence of the manipulation of Bank rate, the Bank of England restricted the volume of rediscounts by limiting the amount available for each applicant. The Bank some times exercised restrictions by shortening the maturity of its loans. Before 1844 the Bank exercised restrictions through measures other than Bank rate manipulations.

The policy of directly curtailing the volume of rediscounts was crude and caused much embarrassment to the traders. It increased commercial discredit at the very time when public alarm was most dangerous. The usury laws were relaxed in 1832 and thereafterwards the policy of changing the Bank rate came into prominence. It was from 1839 that the Bank rate was allowed to rise beyond 5%<sup>1</sup>. Over the policy of direct credit restrictions, the Bank rate policy has a distinct advantage. Its real object is that no sound and genuine business transactions should be restricted or abandoned merely on account of shortage of bank cash.<sup>2</sup> Thus, in England, a rate of discount of 8 to 10% was considered preferable to the policy of directly curtailing credit before the period of a regular Bank rate policy. The policy of Bank rate changes, therefore, soon gained popularity in England. As the commercial banks were obliged to approach the Bank of England for more cash, the rate of interest that was charged by the latter came to acquire a strong influence on the volume of bank borrowings and the consequent rise and or fall in business activity.

#### Motives of Bank Rate Manipulations.

The currency system of the world during the second half of the

1. W.T.C.King, Op.Cit., pp.81-82.

2. M.H.De Kock. Central Banking, 1946, p. 103.

19th century and upto 1914 was based on gold standard. The volume of internal currency of a country depended upon the gold reserves of the central bank and the fluctuations in the latter caused corresponding fluctuations in the former. There were two sets of causes influencing the level of gold reserves of the central bank: (1) Exterior causes or changes in the balance of payments position of a country which affected or were likely to affect the gold reserves, (2) Interior causes working through the increase or decrease in currency in circulation and the industrial demand for gold as material. So far as the monetary aspect of the central gold reserves was concerned, the two sets of causes were supposed to have close relation. Stability of gold reserves, according to the contemporary opinion, implied both the stability of internal economic situation and the stability of international payments position of the country concerned. When there was an over-expansion of business activity at home the balance of payments position of a country deteriorated. This threatened a fall in the gold reserves either actual or impending. The position of the central gold reserves was an indicator of the stability or otherwise of the internal economic situation. The changes in the gold reserves, therefore, were interpreted as the signal for a monetary action of raising or lowering the Bank rate so as to rectify the domestic economic situation and also the balance of payments position both at a time. There was, thus, no rivalry between the domestic and external stability and both went on hand in hand. This attitude of assuming the absence of any rivalry between the internal and external effects of the changes in the Bank rate is clearly reflected in the opinions of some of the important witnesses examined by the Committee on Finance and Industry (popularly known as the 'Macmillan Committee') appointed in England in 1929. The evidence given by Sir Earnest Harvey, the, then, Dy. Governor of the Bank of England, is typical of the views of the practical managers of money. Sir Earnest Harvey, on being asked

by the Chairman of the Committee, Lord Macmillan, as to what were the guides which prompted the Bank of England to make use of the weapon of the Bank rate, replied that they were the state of the Bank reserves, the condition of the money market and the position and trend of foreign exchanges. Anticipating further the question whether any attention was paid to the condition of domestic trade, the Dy. Governor stated that if the machine was functioning properly the condition of trade should be reflected in the factors he enumerated. His following words are representative of the prevailing orthodox opinion:

" It has been suggested, I think, that the Bank ~~of~~ has been inclined to pay too much attention to the foreign aspect of the question and not sufficient attention to the domestic aspect, and this means - too much attention to finance and not enough to trade. I submit that the two cannot be disserved. After all our trade is not purely a domestic matter (but inspite of that) - if the machine is functioning properly the condition of trade should be reflected in the factors to which I referred.<sup>1</sup> This clearly indicates that changes in ~~for~~ the Bank rate were expected to secure the twin objectives of internal and external stability and essentially there was no rivalry between the two.

The role of the Bank rate to achieve internal and external <sup>stability</sup> simultaneously came to be seriously called in question especially after the First World War. To adjust prices and credit to the requirements of industry and trade and to maintain a certain level of central gold reserves in order that the convertibility of domestic currency can be reasonably assured - these were not the two aspects of the same thing but two independent objectives of monetary policy. To secure <sup>one</sup> ~~and~~ the other should be sacrificed or considerably jeopardized. The Macmillan Committee of 1929 was especially concerned with

1. Macmillan Committee, Vol. of Evidence II, Q.7512, p.173.

the problem created by the inherent conflict between the two rival objectives of the stability of internal business and the soundness of the foreign exchanges of the country. But, even by this time, the practical banker did not suffer any change in his views which the economist viewed with great alarm. Thus, Mr. Montague Norman, the then Governor of the Bank of England, on being asked by Lord Macmillan whether the deterrent effects of high Bank rate on the internal business were advantageous, answered that the advantages were very large. Governor Norman accepted that though the raising of the Bank rate was meant to adjust exchanges, it did exercise deterrent effects upon domestic enterprise because the two were "part of the whole". But, according to Governor Norman, though the restriction of credit might be unfortunate, the effects on the whole were 'salutory' - advantages ~~un~~ outweighed disadvantages.<sup>1</sup> Sir Earnest Harvey, referred to before, in answer to a question ~~and~~ asked by Keynes, <sup>who</sup> was a member of the Committee, answered to the same purport. He stated that curtailment of credit would prove detrimental only when industry borrowed more heavily from the bankers than was desirable.<sup>2</sup> There was nothing wrong, therefore, in the action of the monetary authority which discouraged such over-borrowing from the banks.

It can be gathered from the foregoing discussion that the changes in the Bank rate were brought about for the purpose of expanding or contracting the volume of credit. The changes in the latter were expected to ~~introduce~~ introduce corresponding changes in the business activity of the country as well as the gold reserves. Changes in the gold reserves, were, by the very nature of the monetary system, incidental or, say, were at once the cause and effect of the rise and fall of prices.

1. Macmillan Committee, Volume of Evidence I, p.212 and 218.

2. Vol. of Evidence II, p.177.

### The Working of the Bank rate.

The first impact of the changes in the Bank rate is upon the volume of bank money and the changes in the latter affect prices and business activity in general. But here there arises a question whether the changes in the quantity of money automatically influence business or whether some other factor is necessary for making the quantity of money effective for the purpose of influencing prices. It is the view of the classical theory that Bank rate is a means of regulating the quantity of bank money. The higher Bank rate reduces the demand for discounts and so contributes to the curtailment of the volume of bank money and conversely. The emphasis here clearly goes to the quantity of money. But this is an incomplete picture of the real *modus operandi* of the Bank rate. The crux of the problem is that how the quantity of money comes into circulation so as to affect prices.

It is the contention of Lord Keynes that the Bank rate influences prices by first influencing 'the rate of investment relative-ly to saving'. 'To raise the Bank rate discourages investment relatively to saving, and, therefore, lowers prices, which, by causing the receipts of entrepreneurs to fall below normal, influences them to offer less employment all round'.<sup>1</sup>

1. J.M.Keynes, *Treatise on Money*, Vol.I, pp.190-191. Keynes here distinguishes three strands of thought as regards the effects of the Bank rate manipulations. The first is that the changes in the Bank rate by bringing about changes in the volume of Bank money, influence prices. The second strand of thought is that the changes in the Bank rate are meant to safeguard the gold reserves of a country by regulating the rate of foreign lending. These two objectives of Bank rate changes, according to Keynes, 'pull in opposite directions'. For, though a high Bank rate increases the basis of credit by attracting more gold, it would, according to the first strand, discourage credit expansion and thus would influence prices in a downward direction. This contention of Keynes is rather over-strained. The high Bank rate by attracting more gold creates a basis for more credit subsequently with a lower Bank rate. Easier credit at any time is impossible without sufficient gold reserves to support it. If we properly interpret the word 'basis' in the relevant sentence: 'its effect is to increase the basis of credit' as given in the *Treatise*, it would



Investment is influenced by the discrepancy between the market rate of interest and the natural rate of interest. The market rate of interest, as defined by Keynes, means the rate actually prevailing in the market. It is this rate that is influenced by the Bank rate. The natural rate of interest means the rate at which saving and investment are equal.<sup>1</sup> Keynes's contention is that fundamentally the stress should be given to the changes of Bank rate as affecting the level of the market rate of interest relatively to the natural rate, rather than to the changes in the quantity of money. A change in the quantity of money (which is of secondary importance even if there may be any) affects the price level, in the first instance, because, other things being equal, this means a Bank rate which will change the market rate relatively to the natural rate and it is only through the complex movements thus set up that a new equilibrium position is eventually reached, with a price level ~~corresponding~~ corresponding to the new quantity of money. According to Keynes, in order to make the Bank rate effective, the quantity of money has not to be necessarily altered.<sup>2</sup>

The theory of Keynes postulates an unnatural dichotomy between the two ways of the modus operandi of Bank rate. Changes in the quantity of money on one hand and the ~~the~~ discrepancy between the market rate and the natural rate of interest (both brought about by a change in the Bank rate) are not mutually exclusive nor are they independent of each other. To understand the issue properly, we may ask : Can the Bank rate depart from the natural rate or vice-versa before or without any change in the quantity of money ? .

(Note 1 from page 61 contd.) be clearly understood that there is no conflict between the two strands of effects of a higher Bank rate. It should be noted that the raising of the Bank rate to preserve gold reserves and contraction of credit were not meant by the prevailing opinion as essentially rival. This can be easily understood from the views of the Governor and the Dy. Governor of the Bank of England cited before in these pages. (See A.W. Marget. The Theory of Prices Vol. I, p. 216).

1. Treatise I, p.155.

2. Ibid, p.220.

It is just possible that the discrepancy between the natural rate and market rate may result from a number of causes which may bring about a lowering of the market rate relatively to the natural rate without any preceding change in the quantity of money. This possibility naturally arises when there is a change in the natural rate while the market rate remains the same. Wicksell, no doubt, admitted that the quantity of money or the quantity of cash held by the banks is imbued with a secondary importance whenever the discrepancy between the market rate and natural rate occurs due, especially, to the changes in the natural rate.<sup>1</sup> But there is a further question to be asked here : If at all there is a change in the market rate - natural rate relation without any prior change in the quantity of money, can such a changed relation between the two rates be maintained or continued without any subsequent change in the quantity of money ? Mr. Keynes maintains that, in order to make the Bank rate effective (for influencing prices), there is no necessity for changing the quantity of money.<sup>2</sup> This view of Keynes is not correct.

The strategic role of the quantity of money can be well understood by taking a simple illustration. If, suppose, there is no rationing of credit and there is a free market, an attempt to keep the Bank rate lower than the natural rate (meaning, thereby, the anticipated profits to be made by a bank loan) would so increase the demand for loans that the banks shall have to either give up all attempts to keep the rate of interest at a lower level or they shall have to create supply of bank money to meet the demand for loans. In the former case, the Bank rate would cease to be effective and in the latter case it could be maintained effectively at a low level only by means of an increased supply of bank money. A practical illustration of the fact that high prices cannot be supported except by a subsequent

1. K. Wicksell, *Interest and Prices*. 1936, p.167.

2. *Treatise*, I. P.220.

increase in the quantity of money is supplied by the experience in Germany after the First World War. In Germany after the middle of 1921, the rise in internal prices began to assume a precedence in time and an absolute margin over total circulation. There is a general agreement concerning this particular phase of inflation in Germany that prices advanced directly under the influence of 'speculation' or 'anticipation' or other psychological factors before any increase in monetary circulation. Further issue of notes and extension of bank loans followed the lead taken by prices. As the ~~xx~~ quantity of money thus increased, it became possible to realise prices at their contractual level.<sup>1</sup> Without the subsequent expansion of the volume of money it would have become difficult to maintain the contractual prices and there would have been a disastrous breakdown of the working of the economic system. It is worthwhile to note that between the initial rise in price quotations and the subsequent increase in the quantity of money, the shortage of money was actually felt. Had it been possible to carry out the contracts at high prices with a given quantity of money this sort of shortage would not have been felt.

The German experience clearly indicates that, for higher prices and rising business activity, expansion of the quantity of money is indispensable. The whole controversy, that whether the prices are affected by a change in the market rate- natural rate change in relation before any change in the quantity of money or the quantity of money precedes the changes in prices, is of the hen-and-egg order. For the purpose of monetary management, it is the quantity of money that is important. The actual order of events would depend upon the particular set of circumstances. The monetary authority can control prices only by controlling the quantity of money and the manipulation of the Bank rate is successful as a weapon of credit control only so long as it is capable of influencing the quantity of

1. H.S.Ellis. German Monetary Theory. 1934, pp.279-81.

money. For maintaining the rate of interest at a lower level, increase in the quantity of money is indispensable.

Interest - a 'Cost' or a 'Capitalization' Factor ?

The discrepancy between the market rate of interest and the natural rate of interest is responsible for bringing about changes in the level of prices and the latter event is made possible by changes in the volume of money. But how does this difference between the two rates affect the decisions of the entrepreneurs ? A fall in the market rate of interest, *prima facie*, would reduce the cost of borrowing and this, in turn, would provide an inducement to invest by borrowing.

The above view is contended by Keynes. According to him, easier credit conditions at the most may bring about a shift in the tempo of production from the lines with more interest costs to those with less interest costs. All-round productivity cannot be stimulated by the calculations based on interest as a cost factor. 'A fall in the rate of interest stimulates production of capital goods not because it decreases their cost of production but because it increases their demand price'.<sup>1</sup> This means that through the process of capitalization of the yield expected from the capital goods at a lower rate of interest a fall in the rate of interest would raise the demand and hence the price of capital goods. The producers of these goods, expecting a higher selling price of their goods, would be encouraged to produce more of these goods. They will, thus, provide a stimulus for a general increase in investment.

Theoretically, it may be just possible that the rate of interest may influence the decisions of businessmen through capitalization as Keynes contends, but it is doubtful whether it does influence it in reality. Businessmen can hardly be expected to follow such a zigzag way of calculating the future yield of an investment as the

1. Treatise.I, p.211.

theory of capitalization involves.<sup>1</sup> There is a further difficulty in accepting the rate of interest as a capitalization factor. The long term rate of interest cannot be expected to rest at the same low level over the life time of a capital good. When this is the case, it is difficult to understand how entrepreneurs would be induced to purchase capital goods guided by the considerations of capitalization. This point is clearly emphasised by Wicksell. It is a necessary condition that easier ~~sanctions~~ conditions of short-term lending should have persisted sufficiently long to influence the long term rate of interest, the so-called bond-rate. A casual and temporary change in the discount rate will not in itself exert any marked influence on prices.<sup>2</sup>

There is one important objection to the proposition of Keynes that a fall in the rate of interest stimulates production of capital goods not because it decreases their cost of production but because it increases their demand price. The fall in the rate of interest will not increase the price of all types of capital goods. The price of only those capital goods which have got a longer 'gestation period' (i.e., the period between the installation of ~~machine~~ <sup>machine</sup> and ~~time~~ <sup>the</sup> when it begins to deliver goods for marketing) will rise in consequence of a fall in the rate of interest. This is because the demand for capital goods is, after all, a derived demand and as such it depends upon the marginal revenue productivity of the capital asset. In the case of capital goods whose gestation period is very small their

1. Keynes argues that reduction of interest cost affects the sales of entrepreneurs, for, less interest costs mean lower income for the capitalists. But he points out that entrepreneurs may not be ~~any~~ acquainted with such a reasoning and may be induced to borrow due to a fall in the rate of interest. But calculations based on capitalization are still more complicated as they depend upon the future course of the rate of interest and also the conditions of demand. It is difficult to understand how entrepreneurs can well understand the capitalization theory and plan their investments accordingly.

2. K.Wicksell. Op.Cit.,p.92.

marginal physical productivity will soon increase and their marginal revenue productivity in consequence will fall. As the demand for capital goods is a derived demand, a fall in their marginal revenue product will at once cause a corresponding fall in the demand for them. Their prices, as a result, cannot rise and even may experience a positive fall. Only in the case of capital goods which take a longer period to deliver consumers' goods, the demand will be sustained for a longer period and, therefore, activity in the production of these goods can continue.<sup>1</sup>

A very interesting practical illustration of the above point is found in the experience in England in the latter half of the 19th century. In England, during the period 1871-73, there was witnessed a great activity in the capital goods industries especially due to enormous orders from abroad for railway constructions. Prices rose very high and the economy attained a state of full employment. From 1873 this source of demand began to fall off heavily. However, a fall in foreign demand was compensated by a rise in the demand for the capital goods from domestic industries. But it is surprising to note that the shift in the investment of British capital from foreign to home channels, instead of sustaining the rise in prices previously attained, brought about a positive decline in them. This was because home investment was altogether of a different character from that of foreign investment. The great extension and technical improvement in cotton, metals and other domestic industries increased enormously the production of these goods after 1873. The result was that there was a fall in the general price index and a sharp rise in

1. A.C. Pigou. Industrial Fluctuations. II Edn. 1929, p. 90. Prof. Pigou has used the words, 'gestation period' for the interval between the time of installation of capital instruments and the time when it begins to deliver goods for marketing.

unemployment between 1873 and 1879. In this typical situation of British economy, though there was already a good demand for capital goods, their prices, instead of rising according to the Keynesian tenet, indicated a positive decline. It is interesting to note that this fall in the prices ~~and~~ took place despite there being a corresponding fall in the rate of interest.<sup>1</sup> The home demand for capital goods could not sustain prices because the gestation period of these goods was shorter. As soon as they began to deliver goods in large abundance, their marginal revenue productivity began to decline, which, in consequence, brought about a fall in the demand price of capital goods also. Thus, the extent to which prices would rise in any period of expansion will depend upon the character of the new investment supporting expansion. In actual practice a fall in the rate of interest raises not the demand price of capital goods but that of the claims on existing capital goods i.e. equities and securities. But a rise in the prices of ~~equities~~ equities cannot be expected to stimulate demand for capital goods whose existing money value has risen due to a fall in the rate of interest. For, the rise in the prices of claims on existing capital may be brought about by speculation. The demand for capital goods rises especially when there is a rise in the marginal revenue productivity of capital which generally takes <sup>place</sup> in a period of boom. That is why the process of capital formation in a capitalist economy has always proceeded forth in leaps. In a period of boom, the appearance of promising new investment opportunities leads to a larger construction of capital equipment than in the long run, with the result that sooner or later the demand for new capital equipment is satisfied and a period of slack investment activity, excess capacity in the capital goods industries and depression ultimately supervene.

1. W.W.Rostow. British Economy in the 19th century. Oxford 1948, pp. 64-80.

The influences of the rate of interest as a cost factor and as a capitalization factor should not be held to be mutually exclusive. It is very difficult to attach any more importance to any one of them than to the other. Capitalization at a lower rate of interest may encourage manufacturers of capital goods through expectations of higher selling prices. But the higher selling prices of the capital goods, when actually realised will, in their turn, affect the cost of investment of those ~~manufactures~~ industries which use these goods. Thus, in all subsequent transactions each one of the purchasers has to pay a higher price, for, the price offered at one purchase acts as a datum for the next.<sup>1</sup>

The decisions ~~to~~ to invest are influenced by several factors to all types of investment. Capitalization may influence none of which is singly common, investment decisions in some degree but it cannot be considered an important factor. In modern societies based on individual enterprise, wage-costs and Government policy influence so strongly the investment decisions that the effects of the rate of interest either as a cost or a capitalization factor are generally swamped.

Apart from the importance of capitalization in influencing investment decisions, there is a further point of contention whether capitalization influences prices through changes in the quantity of money or independently of such changes. Lord Keynes, in his Treatise, has stated that the connection between the Bank rate and the price of capital goods through capitalization is 'immediate, direct and obvious.'<sup>2</sup> Though, Keynes, has not here clearly denied the role of money in influencing prices, the way in which he has described the relation between the Bank rate and the price of capital goods can be

1. A.W.Marget. Op.Cit.,p.241.

2. Treatise I, p.202.



interpreted to imply the absence of the role of quantity of money.

The role of the quantity of money in influencing prices has been clearly examined previously in these pages and it is immaterial whether the rate of interest works as a cost factor or a capitalization factor. Despite that, the whole issue can be further clarified. The degree of capitalization that would influence the decisions of different entrepreneurs cannot be the same for all of them. The psychological reaction to a fall in the rate of interest would differ from entrepreneur to entrepreneur. Those entrepreneurs who anticipate a higher capitalized yield due to a fall in the rate of interest would be induced to employ more factors of production. The rise in demand for the factors of production will drive up their prices after all unused resources are exhausted. The rise in the prices of the factors of production thus brought about will increase the cost of production of other entrepreneurs also who may not be expecting a rise in the prices of their products due to capitalization. In this situation, the role of the quantity of money can be well understood by taking into consideration the behaviour of the banking system.

Three possibilities can be surmised as regards the behaviour of banks.

Firstly, it may be supposed that the banks may grant loans to only those borrowers ~~for~~ for whom the ~~amount~~ anticipated profits to be made due to capitalization have risen. The less fortunate borrowers may not be granted any loan even if they approach the banks because of the rise in their cost-bill consequent upon a general rise in the prices of factors of production. Though the banks may not advance any new loan to the latter category of borrowers but at the same time, they may

1. H.S. Ellis. German Monetary Theory. P. 358. Prof. Ellis here examines the contribution of Dr. Richard Strigl from the two view points: (1) interest as a cost of capitalization factor and (2) its quantity of credit aspect.

not call back the loans advanced to less fortunate borrowers before the new situation arose. In this case, the new loans advanced only to the fortunate entrepreneurs would create additional purchasing power in the hands of the owners of the factors of production. Some of this new purchasing power would certainly be used for the products of the less fortunate entrepreneurs also and for them the prospects would be brightened gradually. Thus, though the additional money initially captures only one corner of the economy, it gradually pervades the whole economy and brings about a general rise in prices.

In the second place, the banks may grant loans even to the less fortunate borrowers. They may advance loans to these borrowers from the very beginning on the assumption that the rising tempo of economic activity in one sector of the economy would brighten the prospects for other entrepreneurs also. Or, they may wait till the prospects are actually brightened for the less fortunate borrowers and then advance loans to them. In either way, the effect on the price-level would be rather quick and the banks may be able to realize their own calculations.

Thirdly, the banks may take a very pessimistic view about the borrowers in whose case there are no or very insignificant prospects of profits. They may, in this case, not only not grant new loans but even call back those previously granted to them. They may direct these funds (called back from the less fortunate entrepreneurs) to those borrowers in whose case the new market rate-natural rate relation has been found favourable. The result of all these operations of banks may be that the total amount of loans granted by banks remains the same. In this case, the rise in the prices of the products of more fortunate borrowers would exert ~~and~~ a compensatory fall on the prices of the products of less fortunate borrowers.<sup>1</sup> Here there would

1. A.W.Marget. Theory of Prices Vol.I, 1938 pp.262-63.

a change only in the relative prices but not in the general price level. The general level of prices depends upon the total quantity of money. So long as therefore the market-rate - natural rate relation is changed only for one of the sectors of the economy and not for the economy as a whole, the general price level will not be disturbed.<sup>1</sup> Keynes also argues more or less in the same vein when he discusses the price level of investment goods and consumers' goods. If the change in the market rate coincides with the ~~same~~ change in the natural rate, then the movements in the price levels of investment goods and liquid consumption goods would be such as to neutralize each other to the result that the price level of output as a whole remains unchanged.<sup>2</sup>

Out of the three possibilities examined above only in the third case the quantity of money remains more or less constant and it is under this special case only can there be an "obvious, direct and immediate" relationship between the long term rate of interest and the price of capital goods through capitalization as Keynes holds. But the last case is the least likely to be actually realised. Increased tempo of economic activity in one sector of the economy is bound to pervade the whole economy. The entire theory of public spending is based on the idea that increased tempo of economic activity brought about by Government expenditure will gradually influence private expenditure both on consumption and investment and thus will lift the whole economy from the depths of a depression. Amongst the three cases noted above, therefore, the first one seems to be the most likely. As the increasing economic activity will capture gradually the various sectors of the economy one after the other, it will 'draw out' more credit from the banking system.<sup>3</sup> As the supply of productive resources will begin to fall short of increasing requirements for them, prices will shoot up. Unless, therefore, there is

1. This is nothing but Hayek's version of relative prices c/o Prices and Production, pp. 57, 25, 27.

2. Treatise Vol. I, p. 205.

3. H.S. Ellis, Op. Cit., p. 418.

some supporting increase in the quantity of money (understood in its broad sense as  $MV+M'V'$ ) the carrying-through of transactions at higher level of prices is impossible. The influence of capitalization at a lower rate of interest cannot have a significance quite independent of the quantity of money.

### The Rate of Interest and Investment.

Originally, it was believed that interest charges used to influence business activity by affecting the cost of enterprise. The reasoning may be correct to a certain extent, nevertheless the concept of interest cost is oversimplified. In the first place it is to be clarified whether the costs of holding goods already purchased are to be meant or those of the goods that are to be purchased are meant. Doubtless, the fall in the rate of interest would have an immediate bearing on the costs of goods which are to be purchased. Secondly interest costs have different significance for different enterprises. Changes in the rate of interest would elicit response from different enterprises not to the same extent and also at the same time. Again there is the controversy as to whether it is the trader who is more influenced by a fall in the rate of interest or the manufacturer. R.G. Hawtrey has emphasised the influence of interest changes on the trader or the wholesaler who is sensitive to the changes in the short term rate of interest in expanding or contracting his stocks as against the manufacturer in his total costs by 1 or 2 per cent has no significance.<sup>1</sup> Against this there is the view of Keynes that it is the 'investment' (meaning thereby the purchase of capital goods) which is important and this is influenced by long term rate of interest acting not as a cost factor but as a capitalization factor.<sup>2</sup> In fact, if either traders or manufacturers responded to the changes in

1. R.G. Hawtrey. Currency and Credit. Second Edn., 1923. PP 24-25  
2. Treatise Vol. I, p. 202.

the rate of interest as the theory believes, there would be little difficulty for the success of monetary management. But investment (in whatever sense it is understood) is governed by the profit motive which is again influenced by a complex ~~mechanism~~ of influences - institutional, psychological and technical.<sup>1</sup> Among the institutional factors, wage-rigidities, price rigidities due to monopolistic elements and the inequality of incomes are the most important. Among the psychological factors the most important factors are the liquidity preference of the holders of money and the elements of risk as calculated not <sup>only</sup> by the borrower but <sup>also</sup> by the lender. The borrower has to pay a premium in order to compensate for the element of risk that the lender has estimated. This premium may be so high some time that it may act as a deterrent to certain borrowers (the unsatisfied fringe of borrowers as Keynes calls them <sup>2</sup>).

Theoretically, by assuming certain favourable conditions to be present, it may be possible to show the influence of the rate of interest on investment but it is difficult to realise the assumptions in actual practice. In actual practice, the intensity of the considerations of interest rate differs from entrepreneurs to entrepreneur. Therefore, it is worthwhile to examine the importance of the rate of interest as a factor influencing investment in different fields of investment.

#### The Rate of Interest and Durable Producers' Goods.

Investment in durable goods in general is surrounded by special considerations which distinguish them from that in other fields and herein durable producers' goods form a class by themselves. Ordinarily a business <sup>man</sup> will install a machine if he expects that he will be able to recover at least the initial costs and the interest charges thereon from the revenue stream that the machine would yield

1. H.S. Ellis. 'Monetary Policy and Investment' Readings in Business Cycle Theory, Blakiston, 1944, p.411.
2. Treatise Vol.II, p.364.

during its life time. The greater the difference between the cost of the machine and the present value of the revenue stream the greater will be the attraction for the installation of an additional machine. The present-value of revenue can be obtained by capitalizing the future yield at the current rate of interest minus operating expenses. This means that a fall in the rate of interest will increase the present-value of the revenue and the rise in the former will lower the present value of revenue. The magnitude of the changes in the present value of revenue due to a rise or fall in the rate of interest will depend upon the length of the revenue stream (i.e. the life of the machine) and the breadth of the revenue stream. The longer and broader the revenue stream imputable to a machine, the greater will be the incentive for installing a machine if the rate of interest falls.

The above considerations indicate how a fall in the rate of interest can influence the introduction of more capitalistic methods of production. But in actual practice, the introduction of more capitalistic methods is conditioned by other factors also. The most important factor which may counteract the effects of a fall in the rate of interest on the introduction of new capital is the existence of monopolies. The monopolist is concerned with the marginal revenue product rather than with the marginal physical product. The introduction of more capitalistic methods will, no doubt, increase the marginal physical productivity but this may cause a lowering of the marginal revenue. In such a case, new capital will not be installed by the monopolist despite a fall in the ~~long~~ long term rate of interest, for, to the monopolist it is the marginal revenue product rather than the marginal physical product that is important for his profit calculations.<sup>1</sup> Again, where the new machine is to be installed by replacing an old one,

1. Edward H. Chamberlin. Monopolistic Competition and the Productivity  
marginal productivity theory of distribution. Readings in the  
Theory of Income Distribution. A.E.A. P 148

the revenue stream from the new machine will have to be longer and broader than that imputable to the old one. For, only then the capitalized revenue from the new machine can be expected to exceed that of the old machine at the new lower rate of interest. If the new machine is more expensive, this excess shall have to be larger in order to compensate for the higher costs both in the purchase and the operations of the new machine.

The above is the capitalization formula of calculating the possible effects of the lowering of the rate of interest on the use of more capital. The comparison of the rate of interest with the rate of profit is made yet in another way which is known as 'unit cost formula'. Here there are two different methods. According to one method, the average annual costs of labour, material, depreciation, maintenance, taxes etc., are calculated and to this sum interest on half the original investment in the machine is added. This sum is then compared with the other sum of average annual gross revenue. If the latter exceeds the former, then the investment in the machine concerned would be profitable at the current rate of interest. According to the other method, interest costs do not form the part of gross total costs. The difference between annual revenue and annual costs is then expressed as a rate of profit on the original investment. If this ~~ex~~ rate of profit exceeds the rate of interest then the investment in the new machine would be worthwhile.<sup>1</sup>

The above methods of calculating the profitability of an enterprise on the basis of a given rate of interest are largely theoretical in as much as businessmen are hardly found to follow them. Many companies, however, base their calculations on some normal rate of return which is considered appropriate to their industry. If at all the rate of interest has any significance for capital investment, businessmen will react to the change in the

1. F.A.Lutz, 'The Interest Rate and Investment in a Dynamic Economy', A.E.R. Dec., 1945, pp. 819-822.

relation of profit rate to the rate of interest rather than the profit rate alone. In fact, profits expressed as a percentage of net worth, are found less significant than total profits. Thus, in the U.S., a study of the private investment in producers' durable goods from 1921 to 1940 revealed that most significant factor influencing the investment was the relation between corporate profits in one year and plant and equipment in the following year. About four-fifths of the variations in investment were explained by this simple relation. <sup>1</sup>

Apart from the peculiar methods of calculating the profitability of an enterprise, the businessman's vision of the future affects investment considerably. Even if the capitalized value of the revenue stream spread over the life time of a machine may exceed the cost (i.e., both the purchase price and the interest charges thereon) of the machine, the calculations of the businessman will not go deep into the future so as to consider the full actual life of the machine. Ordinarily, the businessman wants the machine to pay for itself within a relatively short period which, in many cases, turns out to be much shorter than the actual life of the machine. <sup>2</sup> Thus, from the replies to a questionnaire issued to businessmen in the U.S., in the late twenties, it was learnt that 97.4% of those who replied considered it necessary that the initial investment in the machine should be returned in five years or less and 61.4 % of these set a limit of 3 years or less. The reason why businessmen set a shorter time limit is that the elements of risks and uncertainty dominate all investment calculations. A businessman, so far as he is a human being prompted by the profit motive, cannot escape them. The longer the period into which calculations extend <sup>1</sup> the greater will have to be the allowance for risk. Risk is too strong

1. M. Ezekiel 'Saving, Consumption and Investment-II'. A.E.R. 1942 pp.282-83.

2. J.M.Keynes. General Theory, p.163.



to enable interest to have much influence on far off future and the magnitude of influence of risk is largely a 'psychological' question.<sup>1</sup> In a state of confidence, inspired by a cyclical upswing or technical inventions, the businessman's decisions to invest cannot be counteracted by ~~moderate~~ moderate increases in the rate of interest. Conversely, in a period of depression, a lower rate of interest may fail to induce entrepreneurs to undertake investment even on the ground of capitalization calculations. For, during a period of depression, the thickness of income flow is so much reduced that the life of the capital asset holds no consideration with the entrepreneur. In the context of wage-rigidities and costs of other materials which are incapable of downward adjustment, entrepreneurs cannot expect returns on their fixed investments which may be sufficient enough to induce them to invest. For, so long as maladjustment in the cost-price relationship persists, there can be no expectation of profits and, therefore, no interest rate can be low enough to permit a positive capital value to be derived from negative or zero profits. During a depression, therefore, no interest policy can be expected to succeed in stimulating investment.<sup>2</sup> In recent times the importance of the rate of interest as a factor influencing investment is considerably reduced by the development of self-financing by large corporations. The changes in the rate of interest will affect the company's investment decisions especially when a large use is made of long term debt. The modern practice of corporation-financing is to finance investment out of ~~marginak~~ operational savings. Thus, in 1950, 57 % of total expenditure in the case of nearly 300 large corporations in the U.S., was financed out of operational savings. Bank loans accounted for only

1. J.R.Hicks. Value and Capital, 1948.II Edn., p.226.

2. F.Machlup. 'The Rate of Interest as Cost and Capitalization Factor'. *Ex A.E.R.* Sept., 1935, p.465.

1.5% of the total expenditure.<sup>1</sup>

With the ever expanding size of industrial establishments and the consequent increasing gains from the economies of large-scale, profits have come to be stabilized at relatively higher levels especially in the case of large corporations. Such large corporations plough back a substantial portion of their profits every year and thereby become less and less dependent upon outside funds. In advanced countries like the U.S., debt has become a less important element in corporate financing. In the U.S., though the degree of the use of long-term debt differs with the nature of business, the trend of declining importance of long term debt is true for both manufacturing and trade corporations of all sizes - large, medium and small.<sup>2</sup>

In the case of enterprises requiring large initial capital outlay e.g., public utilities, such as electricity companies, railways etc., a large part of the assets shall have to be financed by issuing bonds. These may have, therefore, substantial interest charges. But in the case of public utility concerns interest cost would be the weakest influence due to certain special considerations. Firstly, these enterprises being veritable monopolies, face no competition. They are, therefore, free to charge higher rates for their services and hence can very easily cover up the high interest cost if they are obliged to borrow at a higher rate.<sup>3</sup> Secondly, public utility enterprises, as they are supplying essential needs of the community, cannot be deferred due to the urgency of such needs simply on the consideration of high interest costs. Interest costs would bear very little significance either as an incentive or as a deterrent in this particular field of industrial enterprise.

1. F.R.B. August 1951, p.1130.

2. N.H.Jacoby and R.J.Saulneir. 'Business Finance and Banking' National Bureau of Economic Research, 1946, pp.90-91.

3. J.M.Keynes. General Theory, p.163.

## The Rate of Interest & Durable Consumers' Goods.

### The nature of the Demand for Durable Consumers' Goods.

The demand for durable consumers' goods displays a cyclical characteristic. In periods of boom, when consumers' incomes are rising, purchases of durable consumers' goods considerably increase while in times of falling incomes and employment, the expenditure on these goods falls.

The demand for durable consumers' goods displays wide fluctuations in response to cyclical swings in income and employment because of the peculiar nature of the services rendered by these goods. In the first instance, consumption of these goods is largely postponable because they mainly form the luxury group of consumption goods. Luxury goods occupy a marginal place in the scale of preferences of consumers and fluctuations in income will cause corresponding fluctuations only at the margin. Secondly, durable goods are capable of giving service for a very long period. Demand for a radio-set, or an automobile or a refrigerator, once supplied, will not be renewed for a considerably long time to come. If the ever increasing production of these goods is to be maintained. There should be ever expanding scale of consumption. A period of falling incomes does not necessarily much reduce the number of the users of durable goods, but it positively restricts the net increase in the demand for such goods. Thus, in the U.S., the output of passengers' cars declined from 5 million in 1929 to 1.4 million in 1932 (i.e., the fall amounted to 72% ) while the number of registrations fell from 23.1 million to 20.9 million during the same period (i.e. by less than 10%).<sup>1</sup> The reason for this is that some of the durable consumers' goods command an active second-hand market. This is largely true especially in the case of automobiles. As long as

1. League of Nations - Economic Stability in the Post-war period. 1945, p.73.

new demand is satisfied by second-hand goods, no net increase in the demand for newly produced goods will be felt.

The inherent instability of the demand for durable consumers' goods is further accentuated by the peculiar way of financing a substantial part of the purchases on instalment credit. The consequence of this mode of financing is that the fluctuations in the demand for consumers' durables are far in excess of those in current disposable income. In the U.S., taking 1939 as the base year, when the income payments rose by ~~xx~~ 30 per cent. in 1941, the retail sales of passengers' cars increased by about 60 to 70 per cent. and those of refrigerators rose by about 84 per cent.<sup>1</sup> This sort of erratic behaviour of consumers' purchases of durable goods financed by means of instalment credit aggravates the cyclical swings. Regulation of consumers' credit, therefore, provides a useful instrument for a contra-cyclical monetary policy. During the period of boom if the terms of instalment credit are made stricter, consumers will be obliged to restrict their purchases to the currently earned income. This would remove one of the artificial stimuli to the rise in prices in a boom. Again, if during a period of falling prices, if the terms of credit to consumers are liberalized, the consumers will be induced to purchase durable goods. This would save the trades in consumers' durables from heavy unemployment and loss of income.

#### The American Experience.

In the U.S., in the beginning of the Second World War, when disposable incomes were rising by leaps and bounds due to mounting defence expenditure, the purchases of durable consumers' goods increased considerably. The expansion in consumers' expenditure was much in excess of incomes currently earned. This excess was financed

1. F.R.B. Sept., 1941, p.821.

by instalment credit which began to rise with rapid strides. The Board of Governors of the Federal Reserve System, therefore, issued a regulation (Regulation W. ) for controlling the terms<sup>of</sup> instalment credit and sales. After the inception of the regulation, there was witnessed a fall in the volume of instalment credit to consumers. From 6333 million dollars in August, 1941 (which was the highest before the inception of the regulation) the instalment credit began to decline and touched the wartime low of 1780 million dollars in February, 1944.<sup>1</sup>

The above experience of the U.S., however, does not provide ascertaining the efficacy of the measure. It a satisfactory ground for<sup>was</sup> officially recognised that a large amount of the fall in the instalment credit was accounted for not by the new regulation but by complete cessation of the production of certain of the important consumers' durable goods, such as automobiles and household appliances.<sup>2</sup> Had the production in these goods been allowed, it would have been difficult to exercise an effective control on the sale of these goods. This is because there is a multitude of agencies, which, under the forces of competition, indulge in instalment business in order to widen their sales. The American experiment, therefore, does not conclusively show that in a period of boom, the inflationary pressure exercised by the demand for consumers' durable goods can be reduced by regulating instalment credit. Much was achieved by means of direct control of production and sales of certain important consumers' durables.

As an anti-deflationary measure also, the liberalization of the terms of instalment credit can hardly be relied upon. This is because the regulatory standard as regards the rate of interest, the period of maturity etc., can be at the most permissible and cannot be enforced. From the side of the lender his expectations

1. F.R.B. Jan., 1949, p. 14.

2. F.R.B., May, 1942, p. 404.

of coming events play an important role. If the lender is pessimistic about the future, (and this is more likely in a period of falling prices) no amount of relaxation of the terms of instalment credit can bring about a flow of credit into hands of consumers. If the buyers are not facing brighter prospects as regards their incomes, they cannot be induced to buy. For, instalment purchasers are largely dependent upon incomes and more so upon the expectation of greater incomes. This has been borne out by several surveys of consumers' finances conducted by the Board of Governors of the Federal Reserve System in the post-war period.<sup>1</sup>

Instalment credit follows the general trend of economic forces and in so doing it seems to display a belated movement. It is true that consumers' expenditure does affect income and employment but it is also equally true that the levels of income and employment have a vital influence on consumers' expenditure. A business cycle, thus, presents a vicious circle and we have to find out a promising point to break the circle. Perhaps, the chief reason for not regarding consumers' expenditures as a factor of strategic importance in a business cycle is that they do not seem to afford the most promising point for breaking into the circle with measures of control. In this respect, the policy of first increasing consumers' incomes is a more promising lever to work with.<sup>2</sup>

#### Rate of Interest and Building Constructions.

In the case of durable consumers' goods, it is difficult to make exact calculations of the capitalized value of the asset as it is possible in the case of durable producers' goods. This is because these goods yield a flow of utility over a certain period rather than a flow of money income. Utility of a given consumers' durable good depends upon the subjective calculations of the purchaser

1. F.R.B. June 1949, pp. 639-48.

2. J.M. Clark. Strategic Factors in Business Cycle. National Bureau of Economic Research, 1949, p. 88.

and these are not capable of exact quantitative measurement. Amongst a variety of consumers' durable goods houses can be compared ~~with~~ with durable producers' goods, for, the utility derived from a house can be assessed in terms of the rent that the owner would have been required to pay otherwise. Again, house-building requires comparatively a much larger capital investment than what is needed for purchasing any other durable consumers' goods. House-building, therefore, would need in many instances borrowed ~~finance~~ funds and where the rate of interest can well be expected to influence the decisions of building a house.

Theoretically, investment in house-building would be profitable if the capitalized future revenue (rent-minus-repair costs) exceeds the costs of construction. As houses are of long durability, the risk element will influence investment decisions to a larger extent. The entrepreneur, therefore, will calculate the capitalized revenue over a very short period. A lower rate of interest will definitely increase the present value of the revenue and, therefore, can be ~~present value of the~~ expected to encourage investment in house-building. But, the same result can be obtained if the period of capitalization is increased or if there is a fall in other costs. The ~~state~~ rate of interest is not, therefore, the only important factor which influences investment decisions as regards house building.

In practice, the effective demand for houses is determined by (1) the real housing needs, (2) income and costs factors and (3) the existing stock of houses.<sup>1</sup> This means that if there is a good stock of houses to meet the increasing housing need, there can be no advantage in new investment in house-building even if the rate of interest is low. For, the advantage of low interest costs may be

1. League of Nations, 'Economic Stability in the post-war world' 1945, p.58.

more than counter balanced by a loss in the rental proceeds. In comparison with the two factors of interest and rental proceeds, income and other cost factors exercise a more powerful influence on building activity. The changes in income may be brought about in two ways viz., either by a relative fall in other prices especially in the ~~the~~ prices of commodities of common consumption ~~and~~ the demand for which is more or less inelastic, or by an increase in the general level of consumers' income. Thus, the sharp fall in food prices in U.K., after 1929 along with the fall in interest rates, is considered to be mainly responsible for the high level of building activity in subsequent years.<sup>1</sup> In U.S.A., the continued increase in construction activity throughout 1922 is accounted for <sup>by</sup> several factors the most important among which being a rise in the national income and a considerable increase in rents after the war. ~~Though~~ Though there was recorded a fall in the rate of interest at this time, its influence was insignificant in comparison with other factors.<sup>2</sup>

Building activity in the past has displayed generally a contra-cyclical trend in many countries. In a period of depression there is found a great activity in building construction. This anti-cyclical behaviour of building trade, leads to the belief that it is influenced by interest rates which are ~~comparatively~~ comparatively lower in a period of depression. However, in a period of depression low cost of ~~making~~ building materials and labour and also a large fall in the prices of commodities of common consumption are strong influences where low cost of borrowing assumes importance only due to its co-incidence. This is well borne out by the experience in Netherlands during the Nineteen-thirties of the present century.

1. League of Nations, *ibid*, p.59.

2. League of Nations, *Economic Fluctuations in the U.S., & U.K., 1918-1922*, p.23.



~~This point~~ Thus, the number of houses constructed in the Netherlands showed hardly any contraction ~~and~~ during the depression of the early thirties, in spite of the fact that the interest on new mortgages remained at relatively high levels. This was because between 1929 and 1935 there was a sharp decline in building costs amounting nearly to 37% due to the depreciation of the currencies of foreign suppliers of certain building materials such as wood, iron and cement. After the devaluation of the guilder in 1936, buildings costs rose and activity fell off despite a fall in interest rates.<sup>1</sup> This point receives further corroboration from similar experience in Britain before 1914. A recent writer has pointed out that in Britain during the period between 1870 and 1914 building cycle was a little more than a migration cycle in disguise.<sup>2</sup> During this period British export of capital to her colonies was followed by emigration of British labour also. The period of active capital exports was marked by rise in general economic activity at home but a fall in building activity. This was because this period was marked by high cost of labour and other building materials and also by high prices of food stuffs. Again, when exports of capital slackened due to slackening activity in the colonies, there was a ~~surfeit~~ surfeit of capital and labour at home. The depression in colonies also made possible cheaper imports of food stuffs. The cessation of capital exports exercised a depressive influence on home activity in general except the construction industry where the activity revived, thanks to the availability of cheap labour and food stuffs.<sup>3</sup>

1. League of Nations. Economic Stability etc., p.140.

2. A.K.Cairncress. Home and Foreign Investment, 1870-1913. Cambridge Uni.Press, 1953, pp.25-26.

3. Taking 1907 as the base year, the index number of house constructions rose from 59% in 1892 to 134% in 1899, - a period of falling British capital exports. From 1900 capital exports revived and the index number of house constructions indicated a corresponding fall from 134% in 1899 to 55% in 1914. A.K.Cairncress - ibid, p.213.

Construction has been found to be so much influenced by consumers' incomes, that it takes a lead in an upswing. This is because, though these incomes in the initial phases of an upswing may not be largest, they are increasing fastest.<sup>1</sup> Houses, being both a luxury and necessity, their construction shows great income-sensitiveness rather than interest-sensitiveness.

#### The Rate of Interest and Speculation.

It is Mr. Hawtrey's contention that the rate of interest influences the wholesaler's decisions to ~~hold~~ hold stocks of goods. The lower rate of interest induces the wholesaler to expand his inventory and a higher rate does the opposite. The behaviour of the wholesaler in response to the changes in the short-term rate of interest <sup>releases economic waves of optimism</sup> and pessimism which pervade the whole economy and bring about booms and slumps. Though there may be some grain of truth in Mr. Hawtrey's Theory, the fluctuations in inventories cannot be accepted as a strategic factor in a business cycle. They are more the effect rather than cause of other powerful economic forces. Mr. Hawtrey's theory can be said to have held good in a period when financing of internal trade was carried on wholly through the discount business of banks. But, as observed before, with the expansion of business, trade corporations have built up large reserves for working capital which absolve them from all need for outside funds. This is a very important development which has considerably reduced the importance of the rate of interest in trade financing.

Even if use is made of borrowed funds, it is by now almost decided that interest cost is only one of the items of cost for carrying goods. Changes in the holding of stocks are caused more

1. J.M. Clark, Op. Cit., p. 41.

by other factors than by the rate of interest. Changes in stocks take place especially on account of two factors. Firstly, stocks would increase or decrease in response to the increase or decrease in demand. Dealers usually maintain a certain ratio of stocks to sales. If, suppose, they experience increasing rates from month to month, they would increase their stocks by more than the amount of increase in sales so as to bring their stocks up to the usual ratio to sales.<sup>1</sup> If there is an increasing rate of turn over, interest costs are ~~not~~ hardly felt even if bank-credit is used to finance increased purchases of stocks. A declining demand would bring about a greater decline in the purchases of new <sup>stocks</sup> ~~despite~~ the inducement of lower interest costs of holding goods. In this respect the comments given by some of the businessmen, to whom some Oxford Economists circulated a questionnaire in 1939 in order to study the influence of the changes in the rate of interest on businessman's decisions, are simply typical of the businessman's attitude. Thus, it was characteristically stated by a businessman that the only thing which affected his decisions was "the lack or surfeit of orders".<sup>2</sup> In the second place, an increase in holding of stocks by dealers may come from an expectation of higher prices. Such an expectation may be based on a rise either already realized or anticipated to materialize almost certainly due to some event such as war. This sort of accumulation of stocks is speculative the best illustration of which can be had from the immediate post-first-world-war period in the United Kingdom and in 1936-37 in the U.S.A.

In U.K., after the First World War, rise in prices was brought about initially by an increased consumers' demand which was pent-up due to war time controls. But this rise was further enhanced by speculative building of inventories. Purchases of stocks were made on a large scale both as a precautionary measure and as

1. G.Haberler. 'Prosperity & Depression'. U.N. 1946, p.94.

2. P.W.S.Andrews. 'A Further Enquiry into the effects of the Rates of Interest'. Oxford Economic Papers No.3, Feb. 1940, p.48.

a source of profit. The speculative building of inventories accompanied by the fall in the foreign exchange value of the pound brought about the realization of the expected rise in prices. Prices were rising at such a rate that an interest rate of nearly 45% would have been required to take all profitability out of mere holding of the average commodity on borrowed money. During this period the short-term money rates at no time exceeded 7%.<sup>1</sup> In the U.S., in 1936-37, the rapid rise in raw material prices and wage rates led to sharp increases in the volume of stocks held by wholesalers and also by retailers in anticipation of higher prices. In the case of speculative stock-holding in anticipation of rapid price-movements, the expected gains or losses may be so large that any probable changes in the cost of keeping stocks prove of negligible importance.

#### Speculation in Securities.

In the case of speculation in securities, there is a special advantage over that in commodities in that the holding of securities has no carrying costs. A speculator mainly carries the securities between two points of time, namely the point of buying and the point of selling and tries to profit from the difference between the prices ruling at these two points. If his anticipations materialize, his profits are ensured. Here, as elsewhere in an individualist economy, it is all a game of chance that plays a vital role.<sup>2</sup> The element of chance is greater in the activity of a speculator, for, the prices of securities are not immediately based on facts but on psychological preferences of the holders of money. The profits that the speculator earns are to be realized within a short-period. The carrying of securities, therefore, is very little

1. League of Nations. 'Economic Fluctuations in the U.S., & U.K., 1918-1922', 1942, p.55.

2. J.M. Keynes. General Theory, p.150.

affected by interest costs. Even if the process of carrying securities is of a bit longer duration, the profits expected on the sales of securities may be so large that ~~margin~~ ~~margin~~ changes in the rate of interest can have little or no influence.

There is another reason which renders the activities of the speculator quite oblivious of the influence of the rate of interest. The turn over of security exchange is found to be mostly effected not by the use of circulating media but by the system of reciprocal cancellation - by a clearing process.<sup>1</sup> This does not mean that speculators do not use bank credit at all or they use it very sparingly. If credit is available on easy terms, or even at a higher rate of interest, bank loans to speculators would definitely increase. What is relevant here is that restriction of credit cannot check speculation, for, it can be carried on without the help of bank credit. From 1928 to April, 1929, the Federal Reserve Authorities pursued a restrictive credit policy with a view to checking speculative activity, raising interest rates and forcing member banks to borrow from the Federal Reserve Banks. In pursuance of this policy open market sales worth some 405 million dollars were undertaken. As a result, no doubt, interest rates rose, member banks' borrowing from the Federal Reserve Banks increased, but the speculative activity was not checked. In contrast to this, in 1930, brokers' loans and other security loans did not increase despite easy rates - easier than in any period of easy rates in the monetary history of the U.S.<sup>2</sup> This is because speculators succeed only when prices are rising. They ride on the waves of a boom. They themselves do not make the waves.

1. Lanchlin Curie. 'The Failure of Monetary Policy to prevent the Depression of 1929-32'. J. of P.E. Vol. XLII, p.150.

2. H.P. Willis. Theory and Practice of central banking, 1936, p.190.

The rise or fall in the prices of securities does not indicate a rise or fall in demand for money by the stock market. No doubt, after offsetting of obligations, there would be a balance which shall have to be paid in money (i.e. cash or bank-money) but this would be a very small percentage of the total volume of obligations expressed in terms of money. It may be argued that the clearing process is possible only between parties which are regular dealers in the stock market. In the case of persons who desire to purchase securities not out of any speculative motive but to derive some income annually, clearing of obligations is not possible. In such a case there would be entries and exists of funds into and out of the stock-market. This is, no doubt, true. But the volume of securities purchased or sold by such non-speculators is very small in comparison with the total turn-over of security transactions. For a large volume of security transactions, therefore, cash or bank credit is not indispensable.

Even in the case of persons who are not regular dealers in the stock-market, the purchases and sales of securities are carried on generally by brokers on behalf of their customers. Brokers would be required to borrow from the banks only when they are required to pay more than they receive either from their customers or from other brokers. This sort of payments on the part of brokers cannot be <sup>substantial</sup> ~~sustained~~ enough. However, if the proceeds of the sales of securities are to undergo a huge exodus due to some panic, the demand for money on the part of brokers taken as a whole would increase. In this context, they would be obliged to approach banks for loans. If the banks are ready to lend to brokers, or if they are not restricted from doing so, loans to brokers would increase. But even then, the per-centage of loans to brokers cannot be a large one in comparison with other investments of banks. Thus, in the U.S., in the year 1929, the percentage of brokers' loans of

banks amounted to only 7.78 per cent on average of their loans and investments despite the fact that the period ~~in~~ in point was characterised by large withdrawals from the stock market. In normal times this percentage is considerably smaller. In 1935 on average the percentage of brokers' loans of member banks was 3.86% of their total loans and investments, while in 1939 it was only 2.43 per cent.<sup>1</sup>

The above discussions lead to the conclusion that the policy of manipulating the rate of interest is an ineffective weapon for controlling speculation. If it is exercised drastically, it may prove a policy of ending speculation by ending prosperity. The policy of the Federal Reserve Board of the U.S., to check inflation and rising security prices both by raising the rediscount-rate from 3½ per cent to 5 ~~percent~~ ~~the~~ percent in 1928 and also by acting directly on the quantity of money by means of open market operations met with failure. The speculators are the borrowers whose expectations of gains run into figures which overshadow almost any reasonable rise in the rate of interest. Rising security prices are not indicative of increasing use of bank credit by speculators. They are generally the effect of rising earnings of corporations or profit inflation, for, otherwise, purchasing of securities at higher prices cannot be worthwhile. The monetary ~~authorities~~ authority, therefore, should find out the factors which brought about the rise in security prices rather than increase the terms of bank lending. In this respect, the monetary authority should be watchful of the possible effects of high or rising security prices on the general ~~economic~~ economic situation of the country. If high security prices, encourage, as Keynes as well pointed out, the issue of new securities which are not warranted by a ~~an~~ commensurate amount of savings, the monetary authority should intervene with justification.<sup>2</sup>

1. F. Machlup. The Stock Market, credit and capital formation, 1940 pp. 344-45.

2. Treatise Vol. I, p. 257.

But even then, the proper policy should be one not of raising the terms of lending but attacking the situation by other means such as direct control of capital issue.

#### Margin Requirements.

One important device of checking bank credit from flowing to the stock-market, which has been recently added to the armoury of central bank especially in the U.S., is that of prescribing margin requirements for advancing loans against the collateral of securities. From the experience of 1929 in that country, it was realized that the use of general credit control by raising interest rates was injurious to certain genuine and legitimate needs for bank-credit. It was, therefore, essential to check bank-credit from flowing to particular areas without, at the same time, denying the legitimate credit needs of business. In response to this requirement, ~~the~~ the device of prescribing margin requirements was introduced in the U.S., by the Securities Exchange Act of 1934. So long as banks are not restricted in some way, for advancing loans against the collateral of securities, speculation will definitely feed itself on facile bank-credit. The restriction on speculative loans by banks, therefore, cements up an important loop hole in the machinery of credit control.

However, there is a practical difficulty in the administration of ~~the~~ the power of prescribing margin requirements. In the American legislation, the Board of Governors has been empowered to prescribe the percentage of margin requirements. But the Board has not been provided with a definite clue as to when and to what extent the margins should be prescribed or changed. The Act, in this respect has provided ~~a~~ a criterion which is vague and indefinite. The Board has been ordained to determine the percentages



of margin with a view to preventing 'undue' use of bank loans for stock speculation. This leaves a great deal of discretion in the hands of the Board which may not be able to judge the situation and take a prompt action. It is, therefore, said that this sort of control is in some degree paternalistic and hence difficult to administer.<sup>1</sup>

From the experience in the U.S., it can be said that the Board of Governors has been able to exercise the new power tolerably well, though, there may be certain leakages, the new power of directional control of ~~credit~~ credit has been successful in maintaining the stock-market credit at comparatively a very low level. At the end of the Second World War, the amount of stock-market credit amounted to about 1 billion dollars as against 3 billion in 1937 and 12 billion in 1929. Even in the post-war period, the power of prescribing margin requirements helped the authorities to hold in check the bank credit flowing to stock market.<sup>2</sup>

#### The Rate of Interest and Marginal Efficiency of Capital.

It can be hardly denied that the importance attached to the rate of interest as an instrument of economic control was dependent upon the presence of certain conditions such as those present in the latter half of the 19th century in England. The experience of the Bank of England before 1914 was at the most a fair-weather experience. The manipulation of the Bank rate before 1914 was especially aimed at removing a disequilibrium in the balance of payments.<sup>3</sup> The Bank rate technique helped restoring an equilibrium in the balance

1. W.R.Burgess, 'The Reserve Banks and the Money Market', 1946, p. 263.

2. Fed. Res. Bull., Feb., 1947, p. 149.

3. For details, Ch.

of payments especially in two ways. Firstly, the raising of the Bank rate, by causing the market rates of interest to rise, attracted mobile liquid capital from other countries. This provided a temporary relief for the deficit country. The higher rates of interest, in the second place, discouraged borrowing and thus reduced the quantity of money. The effect <sup>of</sup> all these events was that business activity in general declined along with the fall in prices and incomes. As the relative levels of prices and incomes in the deficit country were lower than those in a surplus country, the cumulative effects of these were to encourage exports of the deficit country and discourage its imports. In this way equilibrium was brought about in the balance of payments of the deficit country.

It should be noted that the success of the Bank rate technique even as a method of rectifying a disequilibrium in the balance of payments, depended upon certain favourable circumstances prevailing at home and abroad. As an instrument of attracting foreign mobile capital, the success of the Bank rate changes depended upon certain conditions such as political security at home and the relative stability of the rate of exchange. This has been well borne out by the experience of France in the period following World-War I. In 1922, when the French franc was expected to further depreciate, capital began to leave the shores of France despite the fact that the discount rate of the Bank ~~rate~~ of France was higher and was gradually rising in comparison with that ~~of the Bank of England~~ <sup>that of</sup> the Bank of England. As regards the effects of the changes in the Bank rate on the relative price levels at home and abroad, it should be noted that it was not the changes in the price-levels but those in the relative income levels that were important. The Bank rate changes were effective so long as they could influence

the relative levels of income at home and abroad. In the absence of changes in the relative changes, ~~in the levels of income~~ no amount of Bank rate manipulation can adjust the balance of payments. This point is amply illustrated by the experience of Germany in the post First-World-War period.<sup>1</sup>

From the foregoing discussions as regards the influence of the rate of interest in different areas of investment, it can be concluded that it cannot be relied upon as an instrument of economic control. Even then, the faith in this old and 'willing servant of monetary authorities' has not yet completely disappeared. It is still regarded, 'ceteris paribus', to have power to influence investment especially for a long-term. Though, to a large extent, Keynes, in his General Theory is disillusioned and is 'somewhat sceptical of the success of monetary policy directed towards influencing the rate of interest,' he still considers it to exercise 'in normal circumstances, a great, though not a decisive, influence on the rate of investment'.<sup>2</sup>

According to Keynes the current rate of investment will ~~in general and the market rate of interest. By marginal efficiency of capital~~ depend upon the marginal efficiency of capital, is meant the rate of return expected on money invested in a newly produced asset.<sup>3</sup> The marginal efficiency of capital cannot be the same in the case of each and every newly produced capital asset. Keynes seems to have taken this particular difficulty into consideration and has stated that for the purpose of comparison of the marginal efficiency of capital with the current market rate of interest we have to take the greatest of these different marginal efficiencies of capital, which may be termed, then, as the marginal efficiency of capital in general.

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1. See Ch. VIII pp 244-249
  2. General Theory, p.164.
  3. Ibid ,p.136.

The comparison between the marginal efficiency of capital as defined by Keynes and the current long-term rate of interest does not provide a guide for an interest rate policy for encouraging investment.<sup>1</sup> This is because the whole idea of marginal efficiency of capital, being based on businessman's psychology, is elusive. Due to the element of risk involved in long term investment, an entrepreneur is not able to gauge correctly the profitability of an enterprise. As pointed out earlier, he expects the return of his invested in a capital asset much before the machine is expected to wear out. Clearly, the businessman is not to be blamed for such a narrow and short-sighted calculation of the ~~maximum~~ marginal efficiency of his investment. For, in many cases it has been found that calculations based on the life time of the machine have resulted into the errors of optimism when the production and marketing of goods are finished.<sup>2</sup> The businessman, therefore, generally does not

1. Even from purely a theoretical point of view, the policy of lowering the rate of interest so as to be equal to the marginal efficiency of capital in general as defined by Keynes, can hardly be expected to stimulate long-term investment significantly in a period of depression. For, as per this criterion, the cheap money policy will at the most encourage investment only in that project in which marginal efficiency of capital will be the greatest. A large number of projects, whose marginal efficiencies would be below this maximum, will not be worth undertaking even at the new lower level of the long term rate of interest. For, though the new long term rate of interest, ~~may~~ would be lower than its previous level, it would be still above the marginal efficiencies of capital in a number of projects. It is difficult to understand why Keynes selected the greatest of the marginal efficiencies of capital as a criterion for a cheap money policy, despite his clear recognition that marginal efficiency of capital differs with different types of capital assets.

2. A.C.Pigou. Industrial Fluctuation, 1929, p.230.

base his calculations of profitability of an investment on the life time of a capital instrument but on a much shorter period than that. This handicap to the responsiveness of investment to the changes in the long term rate of interest has been recognized by Keynes.

Since, the fluctuations in the market estimation of the marginal efficiency of capital will be too great to be offset by any practicable changes in the rate of interest, Keynes suggested that the State should undertake the responsibility of directly organising investment. For, the State can calculate the marginal efficiency of capital goods on long views and on the basis of general social advantage.<sup>1</sup>

#### Discount Rate Policy and Quality of Bank Assets.

Apart from the recalcitrance of borrowers, the banker's calculations of the element of risk involved in different investments also dilutes considerably the efficacy of a cheap money policy. The relative rates of interest charged by a banker depend upon the relative liquidity and security of different bank assets. The notions of the banker as regards liquidity and security of his assets may not be based on any social significance. A loan to a speculator may appear highly liquid and profitable to the banker but it is highly undesirable from the point of view of general social advantage. The notion of 'liquidity' devoid of social significance is entirely specious.

1. General Theory, p.164. It should be noted here that the State enjoys no superiority over a private enterprise in gauging correctly the future prospects of an undertaking. The circumstances in which the State has to work an industrial undertaking differ considerably from those of an individual businessman. The State can render its enterprise a monopoly and can thus maintain its marginal efficiency. This possibility is not open to a private entrepreneur. In many of the State enterprises, one can hardly ascertain the correct marginal efficiency of capital.

The discount rate policy of the central bank can be made to play an important role in diverting bank investments into socially desirable channels. The central bank can do this by offering preferential treatment to certain bank assets which represent socially desirable investments. Such a discount rate policy of central bank will change the banker's outlook on liquidity and security of different assets. The old conception of liquidity based on 'self liquidating paper' no longer holds good today. In the present context, liquidity of bank assets is more or less synonymous with 'shiftability either from one bank to the other or from the banking system as a whole to the central bank. This aspect of the liquidity of bank-assets was <sup>emphasised</sup> employed unanimously at the International Credit Conference held in Rome in October, 1951. Not only that, but the various papers read at the Conference pointed out that in the present context, liquidity of bank assets depends to a greater extent on the shiftability to the central bank rather than on any other factor.<sup>1</sup>

By giving a preferential treatment, the central bank can make certain assets more popular with the commercial banks than others. Given the policy of central bank, the difference in the liquidity of different bank assets would depend not upon any inherent quality of assets but upon the difference in the degree of favour that different assets would find with the central bank. The notion of liquidity as conceived by the banker would then be identical with one that should be desirable from the social point of view. The central bank can render socially desirable assets liquid by making necessary changes in the 'eligibility rules' for rediscounting. An asset involving a greater degree of risk but at the same time bearing a greater degree of social 'desiredness'

1. Ram Nath. 'The International Credit Conference'. R.B.Bull. June, 1952, p.448.

should be rediscounted at a lower rate of interest.

It is worthwhile to note that in the post-war period the central banks, in practice, have directed their rediscounting policies towards diverting short-term investments of banks into desired channels. In almost all the countries short-term Government debts such as the Treasury bills are given special and most favoured treatment by their respective central banks. In India, also, though the Bank rate has been put up by  $\frac{1}{2}\%$  according to the recent monetary policy of the Reserve Bank, the Bank rediscounts bonafide trade bills of certain description at the old rate of  $3\%$ .<sup>1</sup>

The policy of rediscounting at differential rates indicates that we have now not a single Bank rate but a multiple Bank rate system. This is quite a desirable development, for, it at once reflects the attitude of the central banking authorities towards different bank assets. So far as the banker's preferences for different assets are influenced by the differential rates of rediscount, the system of multiple Bank rate imparts a qualitative significance to the changes in the Bank-rate along with a quantitative one. Ordinarily, in the present context the success of the Bank rate policy depends upon the reaction of the bankers to the change in the rate of discount which causes them to follow the direction pointed out to them by the central bank. That is to say that the changes in the Bank rate act as a signal. If the bankers do not take any hint from this, the monetary authority will go further in its restrictive credit policy. It is certain that the policy of raising the Bank rate does not reflect the intention of the central bank to restrict credit for all purposes. But such an attitude of the central bank can hardly be read from a single discount rate policy. In order that the Bank rate policy may have

1. Report on Currency & Finance - 1951-52, pp. 51-52.

still more symbolic and qualitative significance, the central bank may have a policy of more than a single discount rate based on the social desiredness of different bank assets.

The bank rate as an instrument of credit control could rise to a high status because it conforms to the *laissez-faire* or non-interventionist principle. So far as it is effective, the control exercised by it is most impersonal and involves the least element of intervention in the free-working of the economic system. As long as in an individualist economy, the instruments of economic control involving a smaller degree of intervention are generally preferred to those with a greater degree, the Bank rate will remain the first of the series of instruments of economic control arranged according to the degree of intervention they involve.

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