CHAPTER IV

THE FUNDAMENTAL CAUSE OF CYCLICAL FLUCTUATIONS

I

So far we have not answered, or have only hinted at an answer to the question why, under the existing organization of the economic system, we constantly find those deviations of the money rate of interest from the equilibrium rate* which, as we have seen, must be regarded as the cause of the periodically recurring disproportionalities in the structure of production. The problem is, then, to discover the gap in the reaction mechanism of the modern economic system which is respon-

* The term 'equilibrium rate of interest' which, I believe, was introduced into Germany in this connection, by K. Schlesinger in his *Theorie der Geld-und Kreditwirtschaft* (München and Leipzig, 1914, p. 128) seems to me preferable in this case to the usual expression of 'natural rate' or 'real rate.' Alfred Marshall used the term 'equilibrium level' as early as 1887 (cf. Official Papers of Alfred Marshall, p. 130). Cf. also chap. v. of the present work.

sible for the fact that certain changes of data, so far from being followed by a prompt readjustment (i.e. the formation of a new equilibrium) are, actually, the cause of recurrent shifts in economic activity which subsequently have to be reversed before a new equilibrium can be established.

The analysis of the foregoing chapters has shown that when it is possible to detect, in the organization of our economy, a dislocation in the reaction mechanism described by equilibrium theory, it should be possible (and should, indeed, be the object of a fully developed Trade Cycle theory) to describe deductively, as a necessary effect of the disturbance — quite apart from their observed occurrence — all the deviations in the course of economic events conditioned by this dislocation. It has been shown, in addition, that the primary cause of cyclical fluctuations must be sought in changes in the volume of money, which are undoubtedly always recurring and which, by their occurrence, always bring about a falsification of the pricing process, and thus a misdirection of production. The new element which we are seeking is, therefore, to be found in the 'elasticity'

of the volume of money at the disposal of the economic system. It is this element whose presence forms the 'necessary and sufficient' condition for the emergence of the Trade Cycle.*

The question which we now have to examine is whether this elasticity in the volume of money is an immanent characteristic of our present money and credit system; whether, given certain conditions, changes in the volume of money and the resulting differences between the natural and the monetary rate of interest must necessarily occur, or whether they represent, so to speak, casual phenomena arising from arbitrary interferences by the authorities responsible for the regulation

* Mr. R. G. Hawtrey regards the following theses as important for monetary Trade Cycle theories: (1) That certain monetary and credit movements are necessary and sufficient conditions of the observed phenomena of the Trade Cycle; and (2) that the periodicity of those phenomena can be explained by purely monetary tendencies which cause the movements to take place successively and to be spread over a considerable period of years. ('The Monetary Theory of the Trade Cycle and its Statistical Test': *Quarterly Journal of Economics*, vol. 41, p. 472). This entirely correct definition of Mr. Hawtrey's should have prevented Dr. Burchardt and Prof. Löwe, who expressly fasten on this point in their criticism of monetary Trade Cycle theories, from looking from monetary influences to changes in the general value of money, while disregarding the changes in the distributive process which are conditioned by monetary causes.

of the volume of currency media. Is it an inherent necessity of the existing monetary and credit system that its reaction to certain changes in data is different from what we should expect on the basis of economic equilibrium theory; or are these discrepancies to be explained by special assumptions regarding the nature of the monetary administration, i.e. by a series of what might be called 'political' assumptions? The question whether the recurrence of credit cycles is, or is not, due to an unavoidable characteristic of the existing economic organization, depends on whether the existing monetary and credit organization in itself necessitates changes in the currency media, or whether these are brought about only by the special interference of external agencies. The answer to this question will also decide into which of the most commonly accepted categories a given Trade Cycle theory is to be placed. We must deal briefly with this point because a false classification, which is largely the fault of the exponents of the monetary theories, has contributed much to make them misunderstood.

II

If we are to understand the present status of monetary theories of the Trade Cycle, we must pay special attention to the assumptions upon which they are based. At the present day, monetary theories are generally regarded as falling within the class of so-called 'exogenous' theories, i.e. theories which look for the cause of the cycle not in the interconnections of economic phenomena themselves but in external interferences. Now it is, no doubt, often a waste of time to discuss the merits of classifying a theory in a given category. But the question of classification becomes important when the inclusion of a theory in one class or another implies, at the same time, a judgment as to the sphere of validity of the theory in question. This is undoubtedly the case with the distinction, very general to-day, between *endogenous* and *exogenous* theories — a distinction introduced into economic literature some twenty years ago by Bouniatian.* Endogenous theories,

* *Studien zur Theorie und Geschichte der Wirtschaftskrisen*, Munich, 1908, p. 3.

in the course of their proof, avoid making use of assumptions which cannot either be decided by purely economic considerations, or regarded as general characteristics of our economic system — and hence capable of general proof. Exogenous theories, on the other hand, are based on concrete assertions whose correctness has to be proved separately in each individual case. As compared with an endogenous theory, which, if logically sound, can in a sense lay claim to general validity, an exogenous theory is at some disadvantage, inasmuch as it has, in each case, to justify the assumptions on which its conclusions are based.

Now as far as most contemporary monetary theories of the cycle are concerned, their opponents are undoubtedly right in classifying them, as does Professor Löwe* in his discussion of the theories of Professors Mises and Hahn, among the exogenous theories; for they begin with arbitrary interferences on the part of the banks. This is, perhaps, one of the main reasons for the prevailing scepti-

* *Der gegenwärtige Stand der Konjunkturforschung in Deutschland*, *op. cit.* p. 349.

cism concerning the value of such theories. A theory which has to call upon the *deus ex machina** of a false step by bankers, in order to reach its conclusions is, perhaps, inevitably suspect. Yet Professor Mises himself – who is certainly to be regarded as the most respected and consistent exponent of the monetary theory of the Trade Cycle in Germany – has, in his latest work, afforded ample justification for this view of his theory by attributing the periodic recurrence of the Trade Cycle to the general tendency of Central Banks to depress the money rate of interest below the natural rate.† Both the protagonists and the opponents of the Monetary Theory of the Trade Cycle thus agree in regarding these explanations as falling ultimately within the exogenous and not the endogenous group. The fact that this is not an inherent necessity of the monetary starting-point is however shown by the

* Cf. Neisser, *Der Tauschwert des Geldes*, Jena, 1928, p. 161.

† While it seems to me that in the analysis of the effects of a money rate of interest diverging from the natural rate Professor Mises has made considerable progress as compared with the position adopted by Wicksell, the latter succeeded better than Mises did in explaining the origin of this divergence. We shall go into Wicksell's explanation in somewhat more detail below.

undoubtedly endogenous nature of the various older Trade Cycle theories, such as that of Wicksell. But since this suffers from other deficiencies, which have already been indicated, the question whether the exogenous character of modern theories is, or is not, an inherent necessity of their nature remains an open one.* It seems to me that this classification of monetary Trade Cycle theory depends exclusively on the fact that a single, specially striking, case is treated as the normal; while, in fact, it is quite unnecessary to adduce interference on the part of the banks in order to bring about a situation of alternating boom and crisis. By disregarding those divergencies between the natural and money rate of interest which arise automatically in the course of economic development, and by emphasizing those caused by an artificial lowering of the money rate, the Monetary Theory of the Trade Cycle deprives itself of one of its strongest arguments; namely, the fact that the process which it describes *must*

* Part of the two following paragraphs repeats word for word my contribution to the discussion on 'Credit and the Trade Cycle' at the Zürich Assembly of the 'Verein für Sozialpolitik,' (cf. *Schriften des Vereins für Sozialpolitik*, vol. 175, p. 370–71).

always recur under the existing credit organization, and that it thus represents a tendency inherent in the economic system, and is in the fullest sense of the word an *endogenous* theory.

It is an apparently unimportant difference in exposition which leads one to this view that the Monetary Theory can lay claim to an endogenous position. The situation in which the money rate of interest is below the natural rate need not, by any means, originate in a *deliberate lowering* of the rate of interest by the banks. The same effect can be obviously produced by an improvement in the expectations of profit or by a diminution in the rate of saving, which may drive the 'natural rate' (at which the demand for and the supply of savings are equal) above its previous level; while the banks refrain from raising their rate of interest to a proportionate extent, but continue to lend at the previous rate, and thus enable a greater demand for loans to be satisfied than would be possible by the exclusive use of the available supply of savings. The decisive significance of the case quoted is not, in my view, due to the fact that it is probably the commonest

in practice, but to the fact that it *must inevitably recur* under the existing credit organization.

III

The notion that the increase in circulation is due to arbitrary interference by the banks owes its origin to the widespread view that Banks of Issue are the exclusive or predominant agencies which can change the volume of the circulation; and that they do so of their own free will. But the Central Banks are by no means the only factor capable of bringing about a change in the volume of circulating media*; they are, in their turn, largely dependent upon other factors, although they can influence or compensate for these to a great extent. Altogether, there are three elements which regulate the volume of circulating media within a country —changes in the volume of cash, caused by

* This fact has already been pointed out by the representatives of the Banking School, and later by C. Juglar (*Du change et de la liberté d'émission*, Paris, 1868. Chap. III, *passim;* and *Des crises commerciales et leur retour périodique*, 2nd edit. Paris, 1889, p. 57). Wicksell (*Geldzins und Güterpreise*, p. 101) also points, first of all, to the deposit business of the banks as the cause of the 'elasticity' of the volume of currency media.

inflows and outflows of gold; changes in the note circulation of the Central Banks: and last, and in many ways most important, the often-disputed 'creation' of deposits by other banks. The interrelations of these are, naturally, complicated.

As regards original changes in the first two factors — that is, changes which are not set in motion by changes in one of the other factors — there is comparatively little to say. It has already been pointed out that, in principle, an increase in the volume of cash, occasioned by an increase in the volume of trade, also implies a lowering of the money rate of interest — which gives rise to shifts in the structure of production which seem, though only temporarily, to be advantageous. It must certainly appear very problematical whether the deviations in the money rate of interest thus occasioned would, as a rule, be large enough to cause fluctuations of an empirically ascertainable magnitude. Central Banks, on the other hand, are by law or custom bound to preserve such a close connection between note issues and cash holdings that we have no reason to assume that they, and they alone, provide the original impetus. Of

course, it is possible to assume, with Professor Mises, that the Central Banks, under the pressure of an inflationist ideology, are always trying to expand credit and thus provide the impetus for a new upward swing of the Trade Cycle; and this assumption may be correct in many cases. The credit expansion is then conditioned by special circumstances, which need not always be present; and the cyclical fluctuations caused by it are, therefore, not the necessary consequence of an inherent tendency of our credit system, for the removal of the special circumstances would eliminate them. But before deciding in favour of this special assumption — which requires a proof of its own, to be given separately in the case of each cycle — we have to ask whether, in some other part of our credit system, such extensions may not take place automatically under certain conditions — without the necessity for any special assumption of the inadequate functioning of any part of the system. To me this certainly appears to be true as regards the third factor of money expansion — the 'credit creation' of the commercial banks.

There are few questions upon which scientific

literature, especially in Germany, is so lacking in clarity as on the possibility and importance of an increase in circulating media due to the granting of additional credits by the banks of deposit. To give an answer to the question whether credit-creation is a regular consequence of the existing organization of banking, we shall have to attempt to clear up our conception of the methods and extent of such credit creation by deposit banks. Besides dealing with the fundamental question of the possibility of credit creation and the limits to which it can extend, we shall have to discuss two special questions which are important for our further investigations: namely, whether the practical importance of credit creation depends upon certain practices of banking technique, as is often assumed; and secondly, whether it is, in fact, possible to determine whether a given issue of credit represents credit freshly created or not.

If in the course of our investigation, it is possible to prove that the rate of interest charged by the banks to their borrowers is not promptly adjusted to all changes in the economic data (as it would be if the volume of money in circulation were constant)

— either because the supply of bank credits is, within certain limits, fundamentally independent of changes in the supply of savings, or because the banks have no particular interest in keeping the supply of bank credit in equilibrium with the supply of savings and because it is, in any case, impossible for them to do so — then we shall have proved that, under the existing credit organization, monetary fluctuations must inevitably occur and must represent an immanent feature of our economic system — a feature deserving of the closest examination.

IV

The main reason for the existing confusion with regard to the creation of deposits is to be found in the lack of any distinction between the possibilities open to a single bank and those open to the banking system as a whole.* This is

* As it is impossible to deal exhaustively with this problem, it must be sufficient to draw attention to the main literature of the subject. The first author known to me who definitely stated that 'the balances in the bank are to be considered in very much the same light with the paper circulation,' was Henry Thornton (see his evidence before the Committee on the Bank Restriction, 1797). The development of a more definite theory of credit creation by the banks began, however,

connected with the fact that, in Germany, the whole theory has been taken over bodily from England, where, owing to differences in banking

with the criticisms levelled by the Banking School against the Currency School, and represent the former's only correct contribution to the science of economics. As Professor T. E. Gregory has recently shown (*Introduction to Tooke and Newmarch's History of Prices*, London, 1928, pp. 11 *et seq.*) it was James Pennington who originally developed this thesis, first in an appendix to T. Tooke's *Letter to Lord Grenville on the Effects ascribed to the Resumption of Cash Payments*, then in further contributions to R. Torrens' *Letter to the Rt. Hon. Viscount Melbourne* (London, 1837) and finally in an appendix to the third volume of Tooke's *History of Prices* (1838). If one wanted to trace the further progress of this theory during the nineteenth century, one would have to draw particular attention to the writings of H. D. Macleod (cf., in particular, his *Dictionary of Political Economy*, London 1863, article on *Credit*), C. F. Dunbar and F. Ferrara.

Modern developments follow the exposition of H. J. Davenport (*The Economics of Enterprise*, New York, 1915, pp. 250 *et seq.*); and mention should, in particular, be made of C. O. Phillips's *Bank Credit*, New York, 1920 (especially Chap. III, 'The Philosophy of Bank Credit'), of W. F. Crick (*The Genesis of Bank Deposits*, 'Economica', vol. vii, No. 20–June 1927) and R. G. Rodkey (*The Banking Process*, New York, 1928). Apart from these, we must include in our list the well-known works of Hartley Withers, Irving Fisher and R. G. Hawtrey and, in German literature, K. Wicksell (*Geldzins und Güterpreise*, p. 101), A. Weber (*Depositenbanken und Spekulationsbanken*, 2nd edit., 1922), the works which we have already mentioned of Mises and Hahn, G. Haberler's essay on the latter (*Hahns Volkswirtschaftliche Theorie des Bankkredits*, Archiv für Sozialwissenschaften, vol. 57, 1927) and, finally, H. Neisser (*Der Tauschwert des Geldes*, Jena, 1928).

The theory has been severely criticized especially by Professor Cannan, W. Leaf, and more recently by R. Reisch (*Die 'Deposit' – legende in der Banktheorie*, Zeitschrift für Nationalökonomie, vol. i, 1930.)

technique, the limits imposed on any individual bank are, perhaps, somewhat less narrow, so that the general possibilities open to the banking system as a whole have not been indicated with the degree of emphasis which their importance deserves. In Germany, following the popular exposition of Mr. Hartley Withers, the most generally accepted view starts from English banking practice which (except in the case of 'overdrafts') credits the account of the customer with the amount borrowed before the latter is actually utilized. Granted this assumption, the process leading to an increase of circulating media is comparatively easy to survey and therefore hardly ever disputed. So long and in so far as the credits which a bank is able to grant, considering its cash position, remain on current account — and in the United States, for example, it is a regular condition for the granting of a loan that the current account of the borrower shall never fall below a certain relatively high percentage of the sum borrowed* — every new grant of credit must, of course, bring about an equivalent increase of deposits and a propor-

* Cf. C. O. Phillips, *op. cit.*, p. 50.

tionately smaller diminution of cash reserves. Against these 'deduced deposits' (Phillips) which regularly occur in the normal course of business, the banks naturally have to keep only a certain percentage of cash reserve; and thus it is clear that every bank can, on the basis of a given increase of deposits resulting from public payments, grant new credits to an amount exceeding this increase in deposits.

Against this method of proof it can rightly be objected that, while banking practices of this kind may well lead to the possibility of credit creation, the conditions which this argument assumes are not present on the Continent. It has been justifiably and repeatedly emphasized that there is no reason why the borrower, so long as he is not forced to do so, should borrow money at a higher rate of interest merely to leave that money on deposit at a lower rate.†

If the possibility of creating credit depended

† R. Reisch in 'Die Wirtschaftliche Bedeutung des Kredites im Lichte von Theorie und Praxis' (*Mitteilungen des Verbandes österreichischen Banken und Bankiers*, 10th year, Nos. 2–3, Vienna, 1928, p. 38) and A. Jöhr in his verbal report on Credit and the Cycle, in the Zürich Assembly of the Verein für Sozialpolitik (Schriften, vol. 175, p. 311).

only on the fact that borrowers leave part of their loans on current account for a time, then credit creation would be practically impossible on the Continent;* while even in England and the United States it would have only a very secondary importance. It should be noted that this applies to the case in which the borrower pays the sum borrowed into another account in the *same* bank, so that it is transferred from one to the other without diminishing the total volume of deposits in the bank concerned. We need not, therefore, go separately into this case.

But, in adopting this line of argument, by far the most important process by which deposits are created in the course of current banking business even in Anglo-Saxon countries is neglected, and the sole way in which they are created on the Continent is left entirely out of consideration. The latter could easily be overlooked, since the ability of individual banks to make an increase in their deposits the basis of a far greater amount

* As Bouniatian, evidently for this reason, actually assumes, (cf. his essay, 'Industrielle Schwankungen, Bankkredit und Warenpreise', Archiv für Sozialwissenschaften und Sozialpolitik, vol. 58, Tübingen, 1927, p. 463.)

of new credit can only be accounted for by means of the assumptions used above, while in the banking system as a whole the same process occurs independently. In the following pages, therefore, we shall examine how an increase in deposits, paid in in cash, influences the lending capacity of the whole banking system; starting from the assumption, more appropriate to Continental conditions, that the sums granted will be credited to the account of the borrower only at the time when, and to the extent that, he makes use of them.

V

We may start as before by examining the procedure of a single bank. At this bank a certain amount of cash is newly deposited; a sum, let us say, equal to 5 per cent of its previous total deposits. If the policy of the bank was to keep a reserve of 10 per cent against deposits, that ratio has now been increased, by the new deposit, to 14.3 per cent, and the bank is therefore in a position, in accordance with its policy, to grant new credits. If we assume further that it re-lends 90 per cent of the newly deposited money and that

the whole of this is immediately utilized by the borrower (in order, let us say, to increase his purchases of raw materials) then the ratio of cash to deposits has again sunk to 10 per cent. In so far as the bank does not change its policy its individual lending capacity is exhausted, in these circumstances, before it has even re-lent the whole of the amount newly deposited.

The effect of the sums newly deposited at one bank on the lending capacity of the whole banking system is, however, not exhausted by this transaction. If the borrower does not use the credit in a way which leads quickly to the market for consumers' goods, such as wage payments, but devotes it instead to the purchase of raw materials or half-finished products, then it is to be assumed that payment will be made by cheque and that the seller will hand over the sum received to his own bank for encashment, the amount being credited to his own account. The next consequence must be that the clearing-house position of this bank improves by exactly the amount transferred, and it therefore obtains an equivalent amount of cash from the bank which originally granted the credit.

For the second bank, therefore, the sum originating in the granting of credit and paid into its accounts (representing, as we remember, 90 per cent of the original deposit) is just as much an original deposit, based on cash payments, as it was to the bank which we originally considered. It will, therefore, be regarded as a basis for additional lending and used in just the same way as any other new deposit. If the second bank also keeps 10 per cent of its deposits as cash reserves, it too will be in a position to lend 90 per cent of the new deposit, and the same process will be continued as long as the amounts are merely transferred from bank to bank and are not taken out in cash. As every bank re-lends 90 per cent of the amount paid into it and thus causes an equivalent increase in deposits for some other bank, the original deposit will give rise to credits representing $0.9+0.9^2+0.9^3+0.9^4$ . . . . . times the original amount. As the sum of this converging infinite series is 9, the banks will be enabled, in an extreme case, to create, against an amount of cash flowing in from an outside source, credits equal to nine times that amount. This becomes

clear when we consider that the process can only stop when the last part of this cash is required for the 10 per cent reserve of the deposits.

For simplicity's sake we have made use of an assumption which is undoubtedly incorrect, but which affects our conclusion only in so far as it reduces the actual amount of new credit which the banks can create with a reserve ratio of 10 per cent. Its omission leaves our fundamental conclusion intact; i.e. that they can grant credit to an amount several times greater than the sum originally deposited. In fact some part of the credit at least, if not on the first then on subsequent occasions, will always be withdrawn in cash and not deposited with other banks. For example, if 70 per cent is always redeposited instead of the full 90 per cent this amount being re-lent by every bank and the remainder being used in cash transactions, then the increase in deposits will give rise to additional credits equal to only $0.7+0.7^2+0.7^3$ . . . . . times (i.e. two and one-third times) the original. So long as any part of the credits granted are not withdrawn in cash but redeposited with the banks, the latter will be able to create addi-

tional credits, of a larger or smaller amount, as a consequence of every increase in their cash holdings.* The lifetime of this pyramid of credit is limited to that of the first credit granted, save in the case (which can be assumed as long as there are no withdrawals from deposits) where it is immediately replaced by a fresh credit. If, however, deposits unexpectedly diminish at any part of the banking system, the process will be reversed, and the original diminution of deposits will occasion a contraction of credit correspondingly exceeding the amount withdrawn.†

* The maximum amount of credit, to the creation of which the increase in the cash holdings of the banks may give rise under such an assumption, is easily found by inserting the factor representing the proportion of the original deposit which is re-lent and redeposited with another bank into the mathematical formula expressing the limit which a convergent geometrical series approaches, viz., $\frac{1}{x-1}$ The result gives the total of credits which originate in the series of transactions, including the original deposit; and, in order to arrive at the amount of additional credits, 1 has to be subtracted from the result. It is thus easily seen that even if, for example, only 1-9th of the 90 per cent re-lent by the first bank, or 10 per cent of the original deposit, is redeposited with another bank – and this process is repeated, *additional* credits amounting to 0.111 times the original deposit will be created.

† On this question, and on the interesting effects of a transference of deposits from one bank to another, cf. the more elaborate treatment of C. O. Phillips, *op. cit*, p. 64 *seq.*; also the remarks of W. F. Crick, *loc. cit*, p. 196.

In this connection we must note for further emphasis later the fact that the proportion in which the credits granted are transferred to other accounts — and not paid out in cash — must be regarded as subject to very wide fluctuations as between different individuals at a given moment, as well as between various periods of time for the economic system as a whole. We return later to the significance of this fact.

What has been said above should be sufficient to show that the possibility of creating credits over and above the sums deposited — which, under Continental banking conditions, is not open to any individual bank — is, however, open to the whole banking system of the country to a considerable extent. The fact that a single bank cannot do what is automatically done by the banking system as a whole also explains another circumstance, which might otherwise easily be cited as a proof of the impossibility of additional credit creation. If every bank could re-lend several times the amount deposited, there would be no reason against its offering a much higher rate of interest on deposits than it actually does, or, in

particular, under the existing discount rates of the Central Banks, against its procuring cash in unlimited quantities by way of re-discount; for it would only have to charge its customers a small part of the rate of interest charged by the banks in order to make the business pay. This apparent contradiction between theory and practice is cleared up as soon as one realizes that an increase of deposits by a single bank only offers possibilities for credit creation to the banking system as a whole. But the importance of this circumstance transcends the mere clearing up of this difficulty.

VI

As credits created on the basis of additional deposits do not normally appear in the accounts of the same bank which granted the credit, it is fundamentally impossible to distinguish, in individual cases, between 'those deposits which arose through cash payment and those which find their origin in credit.'* But this consideration

* Neisser (*op. cit.*, p. 53) deserves credit for clearing up an untenable conception, which was quite recently held by no less an authority than Professor J. Schumpeter (*Theorie der wirtschaftlichen Entwicklung*, Münich and Leipzig, 2nd edit., 1926, p. 144).

rules out, *a priori*, the possibility of bankers limiting the amount of credit granted by them to the amount of 'real' accumulated deposits — that is, those arising from the accommodation of temporarily unused money. The same fact enables us to understand why it is generally just those economic writers who are also practical bankers who are most unwilling to admit in any circumstances that they are in a position to create credits.* 'The banker simply does not notice that through this process there is an increase in the amount of money in circulation.'† Once the impetus has been given to any part of the banking system, mere adherence to the routine of banking technique will lead to the creation of additional deposits

* Cf., for example, Walter Leaf, the late chairman of the Westminster Bank, in his book *Banking* (Home University Library, London, 1926), or the contributions of A. Jöhr and B. Dernburg to the Zurich Debate on the Trade Cycle. (*Schriften des Vereines für Sozialpolitik*, vol. 175, 1929, pp. 311 and 329). These arguments were perfectly correctly answered by another 'practical' banker, K. Schlesinger (ibid., p. 355). Professor A. Hahn, on the other hand, falls into the opposite error. The standpoint of Professor R. Reisch will be discussed later.

† Neisser, *op. cit.*, p. 54. He goes on to say, quite correctly, that 'the mere fact that cheque-deposits represent money, without being covered by cash up to 100 per cent, already explains the money-creating nature of bank credit.'

without the possibility arising, at any point, of determining whether any particular credit should properly be regarded as 'additional.' Every time money which has been deposited is re-lent — provided that the depositor is not prevented from using his deposits for making payments — this process is to be regarded as the creation of additional purchasing power; and it is merely this comparatively simple operation which is at the root of the banks' ability to create purchasing power — although the process appears so mysterious to many people. It is thus by no means necessary that the banks should grant these credits, as Dr. Dernburg seems to assume, in an 'improper or wanton' way.

It is of course quite another question whether bankers can, or do, create additional credits of their own free will. The objections to this theory of additional credits, which are levelled against the statement that the banks create credit 'as they please', although holding good at a given rate of interest, do not in the least affect that part of the theory which we need for our analysis. If Professor Reisch, for example, emphasizes that

bank deposits generally increase only 'according to the needs of business,'* or if Prof. Bouniatian objects that 'it does not depend on the banks, but on the demands made by commerce and industry, how far banks expand credit,'† then these assertions, coming as they do from opponents of the theory of bank credits, already contain all that is needed for a deductive proof of the necessity for the recurrence of credit cycles. What interests us is precisely the question whether the banks are able to satisfy the increased demands of business men for credits without being obliged immediately to raise their interest charges — as would be the case if the supply of savings and the demand for credits were to be in direct contact, without the agency of the banks (as for example in the hypothetical 'savings market' of theory); or whether it is even possible for the banks to raise their interest charges immediately the demand for credits increases. Even the bitterest opponents of this theory of bank credit are forced to admit that 'there can be no doubt that, with the upward

* *Op. cit.*, p. 39. † *Op. cit.*, p. 465.

swing of the Trade Cycle, a certain expansion of bank credits takes place.'*

We must not, however, be satisfied with registering the general agreement of opinion on this point. Before passing on to analyse the consequences of this phenomenon we must ask whether the causes which bring it about that banks increase their deposits through additional credits in periods of boom and thus postpone, at any rate temporarily, the rise in the rate of interest which would otherwise necessarily take place, are inherent in the nature of the system, or not.

VII

So far, the starting point of our argument concerning the origin of additional credits has been the assumption that the banks receive an increased in-flow of cash which they then use as a basis for new credits on a much larger scale. We must now inquire how banks behave when an increased demand for credit makes itself felt.

* Dernburg, *op. cit.*, p. 329. He merely adds to this statement the remark that the banks and the Central Bank should see to it that this expansion is 'kept in order'!

Assuming, as is preferable, that this increased demand was not caused by a lowering of their own interest rates, this additional demand is always a sign that the natural rate of interest has risen — that is, that a given amount of money can now find more profitable employment than hitherto. The reasons for this can be of very different kinds.* New inventions or discoveries, the opening up of new markets, or even bad harvests,† the appearance of entrepreneurs of genius who originate 'new combinations' (Schumpeter), a fall in wage rates due to heavy immigration; and the destruction of great blocks of capital by a natural catastrophe, or many others. We have already seen that none of these reasons is in itself sufficient to account for an *excessive* increase of investing activity, which necessarily engenders a subsequent crisis; but that they can lead to this result only through the increase in the means of credit which they inaugurate.

* 'A great variety of causes,' observes R. G. Hawtrey, very correctly (*Trade and Credit*, London, 1928, p. 175).

† Regarding the influence of harvests on the Trade Cycle, cf. the useful compilation of various contradictory theories by V. P. Timoshenko, *The Role of Agricultural Fluctuations in The Business Cycle* (Michigan Business Studies, vol. ii, No. 9, 1930).

But how is it possible for the banks to extend credit, as they undoubtedly do, following an increase in demand, when no additional cash is flowing into their vaults? There is no reason to assume that the same cause which has led to an increased demand for credit will also influence another factor, the cash position of the banks — which as we know is the only factor determining the extent to which credit can be granted.* So long as the banks maintain a constant proportion between their cash reserves and their deposits it would be impossible to satisfy the new demand for credit. The fact that in reality deposits always do expand relatively to cash reserves, in the course of the boom, so that the liquidity of the banks is always impaired in such periods, does not of course constitute a sufficient starting point for an argument in which the increase in credits is

* It is of course possible that an improvement in the conditions of production and profit-making will also indirectly cause an increased flow of cash to the banks, for a flow of funds for investment, as well as an increased flow of payments for goods, can be expected from abroad. But, in the first place, this increased flow of cash can only be expected in a comparatively late stage of the boom, so that it can hardly explain the latter's origin; and in the second place, such an explanation could only be adduced in the case of a single country, and not for the world economy as a whole, or in a closed system.

regarded as *the* decisive factor determining the course and extent of the cyclical movement. We must attempt to understand fully the causes and nature of this credit expansion and in particular, its limits.

The key to this problem can only be found in the fact that the ratio of reserves to deposits does not represent a constant magnitude, but, as experience shows, is itself variable. But we shall achieve a satisfactory solution only by showing that the reason for this variability in the reserve is not based on the arbitrary decisions of the bankers, but is itself conditioned by the general economic situation. Such an examination of the causes determining the size of the reserve ratio desired by the banks is all the more important since we had no theoretical warrant for our previous assumption that it always tends to be constant.

It is best to begin our investigation by considering once again the situation of a single bank, and asking how the manager will react when the credit requirements of the customers increase in consequence of an all-round improvement in the

business situation.* For reasons which will shortly become clear, we must assume that the bank under consideration is the first to feel the new credit-requirements of industry, because, let us say, its customers are drawn from just those industries which first feel the effects of the new recovery. Among the factors which determine the volume of loans granted by the bank, only one has changed; whereas previously, at the same rate of interest and with the same security, no new borrowers came forward, now, under the same conditions of borrowing, more loans can be placed. On the other hand, the cash holdings of the bank remain unchanged. This does not mean, however, that the considerations of liquidity which dictate the amount of loans to be granted will lead to the same result now as when fresh loans could only have been placed at a lower rate of interest or with inferior security than was the case with loans already granted. In this connection, finally, we must mention that the sums which we have, for

* The problems with which the manager of a single bank is confronted in deciding the bank's credit policy are very neatly analysed by Mr. W. F. Crick, *op. cit.*, p. 197, *et seq.*

simplicity's sake, hitherto called cash balances, and which form the bank's liquid reserve, are by no means exclusively composed of cash — and are not even of a constant magnitude, unrelated to the size of the profits which they make possible. The danger that, in case of need, the reserves may have to be replenished by rediscounting bills through the Central Bank*; or that, in order to correct an unfavourable clearing-house balance, day-money may have to be borrowed at a given rate of interest, is far less abhorrent when it is possible to extend credits at an undiminished rate of interest than when such an extension would involve a lowering of that rate. But even disregarding this possibility and assuming that the bank recognizes that it can satisfy its eventual need for cash only at correspondingly higher rates, we can see that the greater loss of profit entailed by keeping the cash reserve intact will, as a rule, lead the

* On this point see J. S. Lawrence, 'Borrowed Reserves and Bank Expansion' (*Quarterly Journal of Economics*, vol. xlii, Cambridge, Mass., 1928) where Mr. Phillips's exposition, mentioned above, is extensively criticized; also the rejoinder of Mr. F. A. Bradford, published under the same title in the next volume (xliii) of the same journal.

bank to a policy which involves diminishing the size of this non-earning asset. Besides this, we have the consideration that, in the upward phase of the cycle, the risks of borrowing are less; and therefore a smaller cash reserve may suffice to provide the same degree of security. But it is above all for reasons of competition that the bank which first feels the effect of an increased demand for credits cannot afford to reply by putting up its interest charges; for it would risk losing its best customers to other banks which had not yet experienced a similarly increased demand for credits. There can be little doubt, therefore, that the bank or banks which are the first to feel the effects of new credit requirements will be forced to satisfy these even at the cost of reducing their liquidity.

VIII

But once one bank or group of banks has started the expansion, then all the other banks receive, as already described, a flow of cash which at first enables them to expand credit on their own account without impairing their liquidity. They

make use of this possibility the more readily since they, in turn, soon feel the increased demand for credit. Once the process of expansion has become general, however, the banks soon realize that, for the moment at any rate, they can safely modify their ideas of liquidity. While expansion by a single bank will soon confront it with a clearing-house deficit of practically the same magnitude as the original new credit, a general expansion carried on at about the same rate by all banks will give rise to clearing-house claims which, although larger, mainly compensate one another and so induce only a relatively unimportant cash drain. If a bank does not at first keep pace with the expansion it will, sooner or later, be induced to do so, since it will continue to receive cash at the clearing house as long as it does not adjust itself to the new standard of liquidity.

So long as this process goes on, it is practically impossible for any single bank, acting alone, to apply the only control by which the demand for credit can, in the long run, be successfully kept within bounds; that is, an increase in its interest charges. Concerted action in this direction,

which for competitive reasons is the only action possible, will ensue only when the increased cash requirements of business compel the banks to protect their cash balances by checking further credit expansion, or when the Central Bank has preceded them by raising its discount rate. This, again, will only happen, as a rule, when the banks have been induced by the growing drain on their cash to increase their re-discount. Experience shows, moreover, that the relation between cheque-payments and cash payments alters in favour of the latter as the boom proceeds, so that an increased proportion of the cash is finally withdrawn from the banks.*

This phenomenon is easily explained in theory by the fact that a low rate of interest first raises the prices of capital goods and only subsequently those of consumption goods, so that the first

* Cf. the statements contained in the well-known 10th yearly Report of the Federal Reserve Board, for 1923 (Washington, 1924) p. 25: 'This is the usual sequence – an increase in deposits followed by an increase in currency. Ordinarily the first effect of an increase in business activity on the banking position is a growth in loans and deposits . . . Then comes a time when the increase in business activity and the fuller employment of labour and increased pay-roll call for an increase in actual pocket money to support the increased wage disbursements and the increased volume of purchases in detail.'

increases occur in the kind of payments which are effected in large blocks.* It may lead to the consequence that banks are not only prevented from granting new credits, but even forced to diminish credits already granted. This fact may well aggravate the crisis; but it is by no means necessary in order to bring it about. For this *it is quite enough that the banks should cease to extend the volume of credit;* and sooner or later this must happen. Only so long as the volume of circulating media is increasing can the money rate of interest be kept below the equilibrium rate; once it has ceased to increase, the money rate must, despite the increased total volume in circulation, rise again to its natural level and thus render unprofitable (temporarily, at least) those investments which were created with the aid of additional credit.†

* Neisser (*op. cit.*, p. 162) doubts this, but his criticism results from an inadequate grasp of the effects of an unduly low money rate of interest. But even if he were right on this point, the arguments of monetary Trade Cycle theory would remain unaffected, since the latter, as is shown in the text, does not depend on this assumption for its proof.

† We need not stay to examine the case of a continuous increase in circulating media, which can only occur under a free paper standard.

IX

The assertion which forms the starting point of the 'Additional Credit Theory of the Trade Cycle', and whose proof has been attempted in the preceding pages, has never in fact been seriously questioned; but hardly any attempts have been made to follow up all the unpleasant consequences of the state of affairs it indicates. Yet what is implied when the beneficial effects of bank credits are praised but that thanks to the activities of banks an increased demand for credit is followed by a greater increase in its supply than would be warranted by the supply of contemporary saving? Wherein lie the often praised effects of credit, if not in the fact that it provides means for enterprises for which no provision could be found if the choices of the different economic subjects were strictly followed? By creating additional credits in response to an increased demand, and thus opening up new possibilities of improving and extending production, the banks ensure that impulses towards expansion of the productive

apparatus shall not be so immediately and insuperably balked by a rise of interest rates as they would be if progress were limited by the slow increase in the flow of savings. But this same policy stultifies the automatic mechanism of adjustment which keeps the various parts of the system in equilibrium, and makes possible disproportionate developments which must, sooner or later, bring about a reaction.

Elasticity in the credit supply of an economic system, is not only universally demanded but also — as the result of an organization of the credit system which has adapted itself to this requirement — an undeniable fact, whose necessity or advantages are not discussed here.* But we must be quite clear on one point. *An economic system with an elastic currency must, in many instances, react to external influences quite differently from an economy in which economic forces impinge on goods in their full force — without any intermediary; and we must,* a priori, *expect any process started by an*

* Cf. K. Wicksell, *Geldzins und Güterpreise*, p. 101, 'The more elastic is the currency system the longer can a more or less constant difference persist between the two interest rates and the greater, therefore, will be the influence of this discrepancy on prices.'

outside impulse to run an entirely different course in such an economy from that described by a theory which only takes into account changes originating on the side of goods. Once, owing to the disturbing influence of money, even a single price has been fixed at a different level from that which it would have formed in a barter economy, a shift in the whole structure of production is inevitable; and this shift, so long as we make use of static theory and the methods proper to it, can only be explained as an exclusive consequence of the peculiar influence of money. The immediate consequence of an adjustment of the volume of money to the 'requirements' of industry is the failure of the 'interest brake' to operate as promptly as it would in an economy operating without credit. This means, however, that new adjustments are undertaken on a larger scale than can be completed; a boom is thus made possible, with the inevitably recurring 'crisis.' *The determining cause of the cyclical fluctuation is, therefore, the fact that on account of the elasticity of the volume of currency media the rate of interest demanded by the banks is not necessarily always equal to the*

*equilibrium rate, but is, in the short run, determined by considerations of banking liquidity.**

* In a previous work (*Die Währungspolitik der Vereinigten Staaten, op. cit.*, p. 260), I have already dealt with the elasticity of bank credit as *the* cause of cyclical fluctuations. This view of its determining importance is now also put forward by Professor F. A. Fetter in a very interesting essay, 'Interest Theories and Price Movements' (*American Economic Review*, vol. xvii, supplement, March 1927; see especially, pp. 95 *et seq.*). Prof. Fetter, of course, is also under the influence of the prevailing dogma which holds that the existence of a stable price level is sufficient proof of the absence of all monetary influences. The crucial part of his argument, not having received the attention which it deserves in recent monetary literature, is reprinted here:

'The foregoing presents the extreme case of the expansion and contraction of bank loans in relation to prices, *but in principle quite small changes in the loan policies of banks affecting the volume of commercial loans*, discount rates, and percentages of reserves, *are of the same nature*. They cause and constitute inflation and deflation of the exchange medium and of commercial purchasing power, not originating in the amount of standard money but in the elasticity of banking loan funds. *This word "elasticity" has long been used in discussions of banking policy to designate a quality assumed to be wholly desirable in bank note issues and customers' credits*, but with only vague suggestions as to what is the need, standard, or means, with reference to which bank loans should expand and contract.

'Rather, it may be more exact to say, the tacit assumption has been that the bank loan funds should be elastic in response to the "needs of business." *But "the needs of business" appears to be nothing but another name for changes in customers' eagerness for loans;* and this eagerness increases when prices are beginning, or are expected, to rise and often continues to gather momentum while prices rise and until, because of vanishing reserve percentages (and other factors), the limit of this elasticity and also the limit of price increase are in sight. In this situation the most conservative business operations become intermixed with elements of investment speculation, motivated by the

The main question set by this inquiry is thus answered. A deductive explanation embracing all the phenomena of the Trade Cycle would require far-reaching logical investigations entirely transcending the scope of this work, which aims merely at an exposition of the monetary basis of Trade Cycle theory. For the present, we must content ourselves with a reference to existing literature on the subject.* In the present work

rise of prices and the hope of profit that will be made possible by a further rise. *Throughout this process the much-esteemed elasticity of bank funds is the very condition causing, or making possible, the rising prices which stimulate the so-called "needs of business". Truly a vicious circle, to be broken only by crisis and collapse when bank loans reach a limit and prices fall.'* (My italics.)

Further, we should point out the connection between our theory and a famous thesis of Mr. R. G. Hawtrey. The phrase 'so long as credit is regulated with reference to reserve proportions, the trade cycle is bound to recur' (*Monetary Reconstruction*, 2nd edit., London, 1926, p. 135) is undoubtedly correct, though perhaps in a sense somewhat different from that intended by the author; for a regulation of this volume of loans exclusively from the point of view of liquidity can never effect a prompt adjustment of the rates charged on loans to the changes in the equilibrium rate, and thus cannot help providing opportunities for the temporary creation of additional credits as soon as (at a given rate of interest) the demand for credit surpasses the accumulation of savings; that is, when the natural rate of interest has risen. See, finally, the remarks of Professor W. Röpke, *Kredit und Konjunktur*, *op. cit.*, p. 274.

* Besides Professor Mises' *Theorie des Geldes und der Umlaufsmittel* we must mention the last chapter of S. Budge's *Gründzuge der Theoretischen Nationalökonomie* (Jena, 1925) and Prof. Strigl's

we shall only draw a few conclusions which follow from our previous arguments, some with regard to practical policy, some with regard to further scientific research. Before going on to this, however, we shall venture a few remarks on the question whether the result of our investigations unequivocally settles the controversy between the protagonists and opponents of the monetary Trade Cycle theory in favour of the former.

X

It must be emphasized first and foremost that there is no necessary reason why the initiating change, the original disturbance eliciting a cyclical fluctuation in a stationary economy, should be of monetary origin. Nor, in practice, is this even generally the case. The initial change need have no specific character at all, it may be any one among a thousand different factors which may at

paper on "Die Produktion unter dem Einfluss einer Kreditexpansion' in vol. 173-ii of the *Schriften des Vereins für Sozialpolitik*, concerning Trade Cycle theory and business research (Münich and Leipzig, 1928), a volume which has been repeatedly quoted above. Since the above was written, I have tried to carry the analysis of these phenomena a step further in *Prices and Production* (London, 1931).

any time increase the profitability of any group of enterprises. For it is not the occurrence of a 'change of data' which is significant, but the fact that the economic system, instead of reacting to this change with an immediate 'adjustment' (Schumpeter) — i.e. the formation of a new equilibrium — begins a particular movement of 'boom' which contains, within itself, the seeds of an inevitable reaction. This phenomenon, as we have seen, should undoubtedly be ascribed to monetary factors, and in particular to 'additional credits' which also necessarily determine the extent and duration of the cyclical fluctuation. Once this point is agreed upon, it naturally becomes quite irrelevant whether we label this explanation of the Trade Cycle as a monetary theory or not. What is important is to recognize that it is to monetary causes that we must ascribe the divergences of the pricing process, during the Trade Cycle, from the course deduced in static theory.

From the particular point of view from which we started, our theory must be regarded most decisively as a monetary one. As to the incorpor-

ation of Trade Cycle theory into the general framework of static equilibrium theory (for the clear formulation of which we are indebted to Professor A. Löwe, one of the strongest opponents of monetary Trade Cycle theory), we must maintain, in opposition to his view, not only that our own theory is undoubtedly a monetary one but that a theory other than monetary is hardly conceivable.* It must be conceded that the monetary theory as we have presented it – whether one prefers to call it a monetary theory or not, and whether or not one finds it a sufficient explanation of the empirically determined fluctuations – has this definite advantage: *it deals with problems which must, in any case, be dealt with for they are necessarily given when the central apparatus of economic analysis is applied to the explanation of the existing organization of exchange. Even if we had never noticed cyclical fluctuations, even if all the actual fluctuations of history were accepted as the consequences of natural events, a*

* Cf. my report: 'Uber den Einfluss monetärer Faktoren auf den Konjunkturzyklus' (*Schriften des Vereins für Sozialpolitik*, vol. 173-ii, p. 362 *et seq.*).

consequential analysis of the effects which follow from the peculiar workings of our existing credit organization would be bound to demonstrate that fluctuations caused by monetary factors are unavoidable.

It is, of course, an entirely different question whether these monetary fluctuations would, if not reinforced by other factors, attain the extent and duration which we observe in the historical cycles; or whether in the absence of these supplementary factors they would not be much weaker and less acute than they actually are. Perhaps the empirically observed strength of the cyclical fluctuations is really only due to periodic changes in external circumstances, such as short-period variations of climate, or changes in subjective data (as e.g., the sudden appearance of entrepreneurs of genius) or perhaps the interval between individual cyclical waves may be due to some natural law.* Whatever further hypothetical causes are adduced to explain the empirically observed course of the fluctuations, there can be no doubt

* From now to the end of the section the exposition follows, in part word for word, my contribution to the Zürich discussion of the 'Verein für Sozialpolitik.' (*op. cit.*, p. 372 *et seq.*)

(and this is the important and indispensable contribution of monetary Trade Cycle theory) that the modern economic system cannot be conceived without fluctuations ascribable to monetary influences; and therefore any other factors which may be found necessary to explain the empirically observed phenomena will have to be regarded as causes *additional* to the monetary cause. In other words, any non-monetary Trade Cycle theory must superimpose its system of explanation on that of the monetarily determined fluctuations; it cannot start simply from the static system as presented by pure equilibrium theory.

Once this is admitted, however, the question whether the monetary theory of the Trade Cycle is correct or not must, at any rate, be presented in a different form. For if the correctness of the interconnections described by monetary theory is unquestioned, there still remains the problem whether it is also sufficient to explain all those phenomena which are observed empirically in the course of the Trade Cycle; it may perhaps need supplementing in order to make it an instrument suitable to explain the working of the modern

economic system. It seems to me, however, that before we can successfully tackle this problem we ought to know exactly how much of the empirically observed fluctuations is due to the monetary factor, which is actually always at work; and therefore we shall have to work out in the fullest detail the theory of monetary fluctuations. It is hardly permissible, methodologically speaking, to go in search of other causes whose existence we may conjecture, before ascertaining exactly how far, and to what extent, the monetary factors are operative. It is our duty to work out in detail the necessary consequences of those causes of disturbance which we know, and to make this train of thought a definite part our logical system, before attempting to incorporate any other factors which may come into play.

XI

The fact, simple and indisputable as it is, that the 'elasticity' of the supply of currency media, resulting from the existing monetary organization, offers a sufficient reason for the genesis and

recurrence of fluctuations in the whole economy is of the utmost importance — for it implies that no measure which can be conceived in practice would be able entirely to suppress these fluctuations.

It follows particularly from the point of view of the monetary theory of the Trade Cycle, that it is by no means justifiable to expect the total disappearance of cyclical fluctuations to accompany a stable price-level — a belief which Professor Löwe* seems to regard as the necessary consequence of the Monetary Theory of the Trade Cycle. Professor Röpke is undoubtedly right when he emphasizes the fact that 'even if a stable price level could be successfully imposed on the capitalist economy the causes making for cyclical fluctuations would not be removed.'† But to realize this, as the preceding argument shows, is by no means 'equivalent to a rejection of a 100 per cent monetary Trade Cycle theory.'‡ On the contrary, on this view, we must regard Professor Röpke's theory, which coincides in the

*'Uber den Einfluss monetärer Faktoren auf den Konjunkturzyklus.' *op. cit.*, p. 369.

† *Op. cit.*, p. 265. ‡ Ibid., p. 278

more important points with our own,* as itself constituting such a 100 per cent monetary Trade Cycle theory.

Once this is realized, we can also see how nonsensical it is to formulate the question of the causation of cyclical fluctuations in terms of 'guilt,' and to single out, e.g., the banks as those 'guilty' of causing fluctuations in economic development.† Nobody has ever asked them to pursue a policy other than that which, as we have seen, gives rise to cyclical fluctuations; and it is not within their power to do away with such fluctuations, seeing that the latter originate not from their policy but from the very nature of the modern organization of credit. So long as we make use of bank credit as a means of furthering economic development we shall have to put up with the resulting trade cycles. They are, in a sense, the price we pay for a speed of development exceeding that which people would voluntarily make possible through their savings, and which

* Cf. especially pp. 274 *et seq.* of the work mentioned.

† As Prof. S. Budge seems inclined to do (*op. cit.*, p. 216). His exposition in other respects largely coincides with ours.

therefore has to be extorted from them. And even if it is a mistake — as the recurrence of crises would demonstrate — to suppose that we can, in this way, overcome all obstacles standing in the way of progress, it is at least conceivable that the non-economic factors of progress, such as technical and commercial knowledge, are thereby benefited in a way which we should be reluctant to forgo.

If it were possible, as has been repeatedly asserted in recent English literature,* to keep the total amount of bank deposits entirely stable, that would constitute the only means of getting rid of cyclical fluctuations. This seems to us purely Utopian. It would necessitate the complete abolition of all bank-money — i.e. notes and cheques — and the reduction of the banks to the role of brokers, trading in savings. But even if we assume the fundamental possibility of this state of things, it remains very questionable whether many would wish to put it into effect if they were clear about its consequences. The stability of the economic system would be obtained

* Certain statements of Mr. R. G. Hawtrey seem to point to this, especially *op. cit.*, p. 121.

at the price of curbing economic progress. The rate of interest would be constantly above the level maintained under the existing system (for, generally speaking, even in times of depression some extension of credit takes place)*. The utilization of new inventions and the 'realization of new combinations' would be made more difficult, and thus there would disappear a psychological incentive towards progress, whose importance cannot be judged on purely economic grounds. It is no exaggeration to say that not only would it be impossible to put such a scheme into practice in the present state of economic enlightenment of the public, but even its theoretical justification would be doubtful.

As regards the practical bearing of our analysis on the Trade Cycle policy of the banks, all that can be deduced from it is that bankers will have to weigh carefully the relative advantages and disadvantages of granting credits on an increasing

* Cf. Professor A. C. Pigou *Industrial Fluctuations*, 2nd edit., p. 145: 'Banks do not in bad times reduce the amount of new real capital flowing to business men below what it would have been had there been no banks, but merely increase it to a smaller extent than they do in good times.'

scale, and to take into account the demand, now fairly widespread, for the early application of a check to credit expansion. But the utmost that can be achieved on these lines is only a mitigation, never the abolition, of the Trade Cycle. Apart from this, the only way of minimizing damage is through a far-reaching adjustment of the economic system to the recognized existence of cyclical movements; and for this purpose the most important condition is an increased insight into the nature of the Trade Cycle and a knowledge of its actual phase at any particular moment.*

* In this connection, apart from empirical research, the greatest consideration should be given to the plea made by O. Morgenstern (*op. cit.*, p. 123 *et seq.*) for giving increased publicity to company developments.