

Reflections on the Pure Theory of Money of Mr. J. M. Keynes

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I

THE appearance of any work by Mr. J. M. Keynes must always be a matter of importance : and the publication of the *Treatise on Money*¹ has long been awaited with intense interest by all economists. None the less, in the event, the *Treatise* proves to be so obviously—and, I think, admittedly—the expression of a transitory phase in a process of rapid intellectual development that its appearance cannot be said to have that definitive significance which at one time was expected of it. Indeed, so strongly does it bear the marks of the effect of the recent discovery of certain lines of thought hitherto unfamiliar to the school to which Mr. Keynes belongs, that it would be decidedly unfair to regard it as anything else but experimental—a first attempt to amalgamate those new ideas with the monetary teaching traditional in Cambridge and pervading Mr. Keynes' own earlier contributions. That the new approach, which Mr. Keynes has adopted, which makes the rate of interest and its relation to saving and investing the central problem of monetary theory, is an enormous advance on this earlier position, and that it directs the attention to what is really essential, seems to me to be beyond doubt. And even if, to a Continental economist, this way of approach does not seem so novel as it does to the author, it must be admitted that he has made a more ambitious attempt to carry the analysis into the details and complications of the problem than any that has been attempted hitherto. Whether he has been successful here, whether he has not been seriously hampered by the fact that he has not devoted the same amount of effort to understanding those fundamental theorems of "real" economics on which alone any monetary explanation can be successfully built, as he has to subsidiary embellishments, are questions which will have to be examined later.

¹ J. M. Keynes : *A Treatise on Money*. Macmillan & Co. 2 Vols. 30s.

That such a book is theoretically stimulating goes without saying. At the same time, it is difficult to suppress some concern as regards the immediate effect which its publication in its present form may have on the development of monetary theory. It was, no doubt, the urgency which he attributes to the practical proposals which he holds to be justified by his theoretical reasoning, which led Mr. Keynes to publish the work in what is avowedly an unfinished state. The proposals are indeed revolutionary, and cannot fail to attract the widest attention: they come from a writer who has established an almost unique and well-deserved reputation for courage and practical insight; they are expounded in passages in which the author displays all his astonishing qualities of learning, erudition and realistic knowledge, and in which every possible effort is made to verify the theoretical reasoning by reference to available statistical data. Moreover, most of the practical conclusions seem to harmonise with what seems to the man in the street to be the dictates of common sense, and the favourable impression thus created will probably not be diminished at all by the fact that they are based on a part of the work (Books III and IV) which is so highly technical and complicated that it must for ever remain entirely unintelligible to those who are not experts. But it is this part on which everything else depends. It is here that all the force and all the weakness of the argument are concentrated, and it is here that the really original work is set forth. And here, unfortunately, the exposition is so difficult, unsystematic, and obscure, that it is extremely difficult for the fellow economist who disagrees with the conclusions to demonstrate the exact point of disagreement and to state his objections. There are passages in which the inconsistent use of terms produces a degree of obscurity which, to anyone acquainted with Mr. Keynes' earlier work, is almost unbelievable. It is only with extreme caution and the greatest reserve that one can attempt to criticise, because one can never be sure whether one has understood Mr. Keynes aright.

For this reason, I propose in these reflections to neglect for the present the applications, which fill almost the whole of Volume II, and to concentrate entirely on the imperative task of examining these central difficulties. I address myself expressly to expert readers who have read the book in its entirety.²

² If at any point my own analysis seems to English readers to take too much for granted, perhaps I may be permitted to refer to my *Prices and Production* in Chapters II and III of which I have attempted to provide a broad outline of the general theoretical considerations which seem to me indispensable in any approach to this problem.

II

Book I gives a description and classification of the different kinds of money which in many respects is excellent. Where it gives rise to doubts or objections, the points of difference are not of sufficient consequence to make it necessary to give them space which will be much more urgently needed later on. The most interesting and important parts consist in the analysis of the factors which determine the amounts of money which are held by different members of the community, and the division of the total money in circulation into "income deposits" and "business deposits" according to the purpose for which it is held. This distinction, by the way, has turned up again and again in writings on money since the time of Adam Smith (whom Mr. Keynes quotes), but so far it has not proved of much value.

Book II is a highly interesting digression into the problem of the measurement of the value of money, and forms in itself a systematic and excellent treatise on that controversial subject. Here it must be sufficient to say that it deals with the problem in the most up-to-date manner, treating index-numbers on the lines developed chiefly by Dr. Haberler in his *Sinn der Indexzahlen*, as expressions of the changes in the price-sum of definite collections of commodities—its main addition to the existing knowledge of this subject being an excellent and very much needed criticism of certain attempts to base the method of index numbers on the theory of probability. For an understanding of what follows, I need only mention that Mr. Keynes distinguishes as relatively less important for the purposes of monetary theory the Currency Standard in its two forms, the Cash Transactions Standard and the Cash Balances Standard (and the infinite number of possible secondary price-levels corresponding, not to the general purchasing power of money as a whole, but to its purchasing power for special purposes), from the "Labour Power" of Money and the Purchasing Power of Money proper, which are fundamental in a sense in which price-levels based on other types of expenditure are not, because "human effort and human consumption are the ultimate matters from which alone economic transactions are capable of deriving any significance" (Vol. I, p. 134).

III

It is in Books III and IV that Mr. Keynes proposes "a novel means of approach to the fundamental problem of monetary

theory" (Preface). He begins with an elaborate catalogue of the terms and concepts he wants to use. And here, right at the beginning, we encounter a peculiarity which is likely to prove a stumbling-block to most readers, the concept of entrepreneur's profits. These are expressly excluded from the category of money income, and form a separate category of their own. I have no fundamental objection to this somewhat irritating distinction, and I agree perfectly when he defines profits by saying that "when profits are positive (or negative) entrepreneurs will—in so far as their freedom of action is not fettered by existing bargains with the factors of production which are for the time being irrevocable—seek to expand (or curtail) their scale of operations" and hence depicts profits as the main-spring of change in the existing economic system. But I cannot agree with his explanation of why profits arise, nor with his implication that only changes in "total profits" in his sense can lead to an expansion or curtailment of output. For profits in his view are considered as a "purely monetary phenomenon" in the narrowest sense of that expression. The cause of the emergence of those profits which are "the main-spring of change" is not a "real" factor, not some maladjustment in the relative demand for and supply of cost goods and their respective products (i.e. of the relative supply of intermediate products in the successive stages of production) and, therefore, something which could arise also in a barter economy, but simply and solely spontaneous changes in the quantity and direction of the flow of money. Indeed, throughout the whole of his argument the flow of money is treated as if it were the only independent variable which could cause a positive or negative difference between the prices of the products and their respective costs. The structure of goods on which this flow impinges is assumed to be relatively rigid. In fact, of course, the original cause may just as well be a change in the relative supply of these classes of goods, which then, in turn, will affect the quantities of money expended on them.³

But though many readers will feel that Mr. Keynes' analysis of profit leaves out essential things, it is not at all easy to detect the flaw in his argument. His explanation seems to flow necessarily from the truism that profits can arise only if more money is received from the sale of goods than has been expended

³ The difference between Mr. Keynes' viewpoint and my own here is not, as may seem in the first instance, due to any neglect on my part of the fact that Mr. Keynes is dealing only with a short-run problem. It is Mr. Keynes rather, with his implied assumption that the real factors are in equilibrium, who is unconsciously introducing a long-run view of the subject.

on their production. But, obvious as this is, the conclusion drawn from it becomes a fallacy if only the prices of finished consumption goods and the prices paid for the factors of production are contrasted. And, with the quite insufficient exception of *new* investment goods, this is exactly what Mr. Keynes does. As I shall repeatedly have occasion to point out, he treats the process of the current output of consumption goods as an integral whole in which only the prices obtained at the end for the final products and the prices paid at the beginning for the factors of production have any bearing on its profitability. He seems to think that sufficient account of any change in the relative supply (and therefore in the value) of intermediate products in the successive stages of that process is provided for by his concept of (positive or negative) investment, i.e. the net addition to (or diminution from) the capital of the community. But this is by no means sufficient if only the total or net increment (or decrement) of investment goods in all stages is considered and treated as a whole, and the possibility of fluctuations between these stages is neglected; yet this is just what Mr. Keynes does. The fact that his whole concept of investment is ambiguous, and that its meaning is constantly shifting between the idea of any surplus beyond the reproduction of the identical capital goods which have been used up in current production and the idea of any addition to the total value of the capital goods, renders it still less adequate to account for that phenomenon.

When I come to the concept of investment I shall quote evidence of this confusion. For the present, however, let us assume that the concept of investment includes, as, in spite of some clearly contradictory statements of Mr. Keynes it probably should include, only the net addition to the value of all the existing capital goods. If we take a situation where, according to that criterion, no investment takes place, and therefore the total expenditure on the factors of production is to be counted as being directed towards the current production of consumers' goods, it is quite conceivable that—to take an extreme case—there may be no net difference between the total receipts for the output and the total payments for the factors of production, and no net profits for the entrepreneurs as a whole, *because* profits in the lower stages of production are exactly compensated by the losses in the higher stages. Yet, in that case, it will not be profitable for a time for entrepreneurs as a whole to continue to employ the same quantity of factors of production as before. We need only consider the quite conceivable case that

in each of the successive stages of production there are more intermediate products than are needed for the reproduction of the intermediate products existing at the same moment in the following stage, so that, in the lower stages (i.e. those nearer consumption) there is a shortage, and in the higher stages there is an abundance, as compared with the current demand for consumers' goods. In this case, all the entrepreneurs in the higher stages of production will probably make losses; but even if these losses were exactly compensated, or more than compensated, by the profits made in the lower stages, in a large part of the complete process necessary for the continuous supply of consumption goods it will not pay to employ all the factors of production available. And while the losses of the producers of those stages are balanced by the profits of those finishing consumption goods, the diminution of their demand for the factors of production cannot be made up by the increased demand from the latter because these need mainly semi-finished goods and can use labour only in proportion to the quantities of such goods which are available in the respective stages. In such a case, profits and losses are originally not the effect of a discrepancy between the receipts for consumption goods and the expenditure on the factors of production, and therefore they are not explained by Mr. Keynes' analysis. Or, rather, there are no total profits in Mr. Keynes' sense in this case, and yet there occur those very effects which he regards as only conceivable as the consequence of the emergence of net total profits or losses. The explanation of this is that while the definition of profits which I have quoted before serves very well when it is applied to individual profits, it becomes misleading when it is applied to entrepreneurs as a whole. The entrepreneurs making profits need not necessarily employ more original factors of production to expand their production, but may draw mainly on the existing stocks of intermediate products of the preceding stages while entrepreneurs suffering losses dismiss workmen.

But this is not all. Not only is it possible for the changes which Mr. Keynes attributes only to changes in "total profits" to occur when "total profits" in his sense are absent: it is also possible for "total profits" to emerge for causes other than those contemplated in his analysis. It is by no means necessary for "total profits" to be the effect of a difference between *current* receipts and *current* expenditure. Nor need every difference between current receipts and current expenditure lead to the emergence of "total profits." For even if there is neither positive nor negative invest-

ment, yet entrepreneurs may gain or lose in the aggregate because of changes in the value of capital which existed before—changes due to new additions to or subtractions from existing capital.⁴ It is such changes in the value of existing intermediate products (or “investment,” or capital, or whatever one likes to call it) which act as a balancing factor between current receipts and current expenditure. Or to put the same thing another way, profits cannot be explained as the difference between expenditure in one period and receipts in the *same* period or a period of equal length because *the result of the expenditure in one period will very often have to be sold in a period which is either longer or shorter than the first period.* It is indeed the essential characteristic of positive or negative investment that this must be the case.

It is not possible at this stage to show that a divergence between current expenditure and current receipts will always tend to cause changes in the value of existing capital which are by no means constituted by that difference, and that because of this, the effects of a difference between current receipts and current expenditure (i.e. profits in Mr. Keynes' sense), may lead to a change in the value of existing capital which may more than balance the money-profits. We shall have to deal with this matter in detail when we come to Mr. Keynes' explanation of the trade cycle, but before we can do that we shall have to analyse his concept of investment very closely. It should, however, already be clear that even if his concept of investment does not refer, as has been assumed, to changes in the value of existing capital but to changes in the physical quantities of capital goods—and there can be no doubt that in many parts of his book Mr. Keynes uses it in this sense—this would not remedy the deficiencies of his analysis. At the same time there can be no doubt that it is the lack of a clear concept of investment—and of capital—which is the cause of this unsatisfactory account of profits.

There are other very mischievous peculiarities of this concept of profits which may be noted at this point. The derivation of profits from the difference between receipts for the total output and the expenditure on the factors of production implies that there exists some normal rate of remuneration of invested capital which is more stable than profits. Mr. Keynes does not explicitly state this, but he includes the remuneration of invested capital in his more comprehensive concept of the “money rate of efficiency earnings of the factors of production”

⁴ Of course such changes need not only affect entrepreneurs. They may also affect other owners of capital.

in general, a concept on which I shall have more to say later on. But even if it be true, as it probably is, that the rate of remuneration of the original factors of production is relatively more rigid than profits, it is certainly not true in regard to the remuneration of invested capital. Mr. Keynes obviously arrives at this view by an artificial separation of the function of the entrepreneurs as owners of capital and their function as entrepreneurs in the narrow sense. But these two functions cannot be absolutely separated even in theory, because the essential function of the entrepreneurs, that of assuming risks, necessarily implies the ownership of capital. Moreover, *any new chance to make entrepreneurs' profits is identical with a change in the opportunities to invest capital, and will always be reflected in the earnings (and value) of capital invested.* (For similar reasons it seems to me also impossible to mark off entrepreneurs' profits as something fundamentally different from, say, the extra gain of a workman who moves first to a place where a scarcity of labour makes itself felt and, therefore, for some time obtains wages higher than the normal rate.)

Now this artificial separation of entrepreneurs' profits from the earnings of existing capital has very serious consequences for the further analysis of investment: it leads not to an explanation of the changes in the demand price offered by the entrepreneurs for new capital, but only to an explanation of changes in their aggregate demand for "factors of production" in general. But, surely, an explanation of the causes which make investment more or less attractive should form the basis of any analysis of investment. *Such an explanation can, however, only be reached by a close analysis of the factors determining the relative prices of capital goods in the different successive stages of production*—for the difference between these prices is the only source of interest. But this is excluded from the outset if only *total* profits are made the aim of the investigation. Mr. Keynes' aggregates conceal the most fundamental mechanisms of change.

IV

I pass now to the central and most obscure theme of the book, the description and explanation of the processes of investment. It seems to me that most of the difficulties which arise here are a consequence of the peculiar method of approach adopted by Mr. Keynes, who, from the outset, analyses complex dynamic processes without laying the necessary foundations by adequate

static analysis of the fundamental process. Not only does he fail to concern himself with the conditions which must be given to secure the continuation of the existing capitalistic (i.e. round-about) organisation of production—the conditions creating an equilibrium between the depreciation and the renewal of existing capital—not only does he take the maintenance of the existing capital stock more or less as a matter of course (which it certainly is not—it requires quite definite relationships between the prices of consumption goods and the prices of capital goods to make it profitable to keep capital intact) : he does not even explain the conditions of equilibrium at any given rate of saving, nor the effects of any change in the rate of saving. Only when money comes in as a disturbing factor by making the rate at which additional capital goods are produced different from the rate at which saving is taking place does he begin to be interested.

All this would do no harm if his analysis of this complicating moment were based on a clear and definite theory of capital and saving developed elsewhere, either by himself or by others. But this is obviously not the case. Moreover, he makes a satisfactory analysis of the whole process of investment still more difficult for himself by another peculiarity of his analysis, namely by completely separating the process of the reproduction of the old capital from the addition of new capital, and treating the former simply as a part of current production of consumption goods, in defiance of the obvious fact that the production of the same goods, whether they are destined for the replacement of or as additions to the old stock of capital, must be determined by the same set of conditions. New savings and new investment are treated as if they were something entirely different from the reinvestment of the quota of amortisation of old capital, and as if it were not the same market where the prices of capital goods needed for the current production of consumption goods and of additional capital goods are determined. Instead of a "horizontal" division between capital goods (or goods of higher stages or orders) and consumption goods (or goods of lower stages)—which one would have thought would have recommended itself on the ground that in each of these groups and sub-groups production will be regulated by similar conditions—Mr. Keynes attempts a kind of vertical division, counting that part of the production of capital goods which is necessary for the continuation of the current production of consumption goods as a part of the process of producing con-

sumption goods, and only that part of the production of capital goods which *adds* to the existing stock of capital as production of investment goods. But this procedure involves him, as we shall see, in serious difficulties when he has to determine what is to be considered as additional capital—difficulties which he has not clearly solved. The question is whether any increase of the value of the existing capital is to be considered as such an addition—in this case, of course, such an addition could be brought about without any new production of such goods—or whether only additions to the physical quantities of capital goods are counted as such an addition—a method of computation which becomes clearly impossible when the old capital goods are not replaced by goods of exactly the same kind, but when a transition to more capitalistic methods brings it about that other goods are produced in place of those used up in production.

This continual attempt to elucidate special complications without first providing a sufficient basis in the form of an explanation of the more simple equilibrium relations becomes particularly noticeable in a later stage of the investigation when Mr. Keynes tries to incorporate into his system the ideas of Wicksell. In Wicksell's system these are necessary outgrowths of the most elaborate theory of capital we possess, that of Böhm-Bawerk. It is *a priori* unlikely that an attempt to utilise the conclusions drawn from a certain theory without accepting that theory itself should be successful. But, in the case of an author of Mr. Keynes' intellectual calibre, the attempt produces results which are truly remarkable.

Mr. Keynes ignores completely the general theoretical basis of Wicksell's theory. But, none the less, he seems to have felt that such a theoretical basis is wanting, and accordingly he has sat down to work one out for himself. But for all this, it still seems to him somewhat out of place in a treatise on money, so instead of presenting his theory of capital here, in the forefront of his exposition, where it would have figured to most advantage, he relegates it to a position in Volume II and apologises for inserting it (Vol. II, p. 95). But the most remarkable feature of these chapters (27-29) is not that he supplies at least a part of the required theoretical foundation, but that he discovers anew certain essential elements of Böhm-Bawerk's theory of capital, especially what he calls (as has been done before in many discussions of Böhm-Bawerk's theory—I mention only Taussig's *Wages and Capital* as one of the earliest and best known instances) the "true wages fund" (Vol. II, pp. 127-129) and

earlier (Vol. I, p. 308) Böhm-Bawerk's formula for the relation between the average length of the roundabout process of production and the amount of capital.⁵ Would not Mr. Keynes have made his task easier if he had not only accepted one of the descendants of Böhm-Bawerk's theory, but had also made himself acquainted with the substance of that theory itself?

V

We must now consider in more detail Mr. Keynes' analysis of the process of investment. Not the least difficult part of this task is to find out what is really meant by the expression investment as it is used here. It is certainly no accident that the inconsistencies of terminology, to which I have alluded before, become particularly frequent as soon as investment is referred to. I must mention here some of the most disturbing instances, as they will illustrate the difficulties in which every serious student of Mr. Keynes' book finds himself involved.

Perhaps the clearest expression of what Mr. Keynes thinks when he uses the term investment is to be found where he defines it as "the act of the entrepreneur whose function it is to make the decisions which determine the amount of the non-available output" consisting "in the positive act of starting or maintaining some process of production or of withholding liquid goods. It is measured by the net addition to wealth whether in the form of fixed capital, working capital or liquid capital" (Vol. I, p. 172). It is perhaps somewhat misleading to use the term investment for the act as well as the result, and it might have been more appropriate to use in the former sense the term "investing." But that would not matter if Mr. Keynes would confine himself to these two senses, for it would not be difficult to keep them apart. But while the expression "net addition to wealth" in the passage just quoted clearly indicates that investment means the increment of the value of existing capital—since wealth cannot be measured otherwise than as value—somewhat earlier, when the term "value of investment" occurs for the first time (Vol. I, p. 126), it is expressly defined as "not the increment of value

⁵ According to Böhm-Bawerk (*Positive Theory*, 3rd. ed., p. 535, English translation p. 328) the stock of capital must be $\frac{x+1}{2}$ as great as the amount of consumption goods consumed during a period of time if x stands for the total length of the production process and if the original factors of production are applied at a steady rate. Mr. Keynes calls the magnitude which Böhm-Bawerk called x , $2r-1$ and, as $\frac{(2r-1)+1}{2}=r$, comes to the conclusion that the working capital (to which, for unaccountable reasons, he confines his formula) amounts to r times the earnings per unit of time.

of the total capital, but the value of the increment of capital during any period." Now, in any case, this would be difficult as, if it is not assumed that the old capital is always replaced by goods of exactly the same kind so that it can be measured as a physical magnitude, it is impossible to see how the increment of capital can be determined otherwise than as an increment of the value of the total. But, to make the confusion complete, side by side with these two definitions of investment as the increment of the value of existing capital and the value of the increment, four pages after the passage just quoted, he defines the "Value of the Investment" (should the capital V or the second "the" explain the different definition?) not as an increment at all but as the "value of the aggregate of Real and Loan Capital" and contrasts it with the increment of investment which he now defines as "the net increase of the items belonging to the various categories which make up the aggregate of Real and Loan Capital" while "the value of the increment of investment" is now "the sum of the values of the additional items."

These obscurities are not a matter of minor importance. It is because he has allowed them to arise that Mr. Keynes fails to realise the necessity of dealing with the all-important problem of changes in the value of existing capital; and this failure, as we have already seen, is the main cause of his unsatisfactory treatment of profit. It is also partly responsible for the deficiencies of his concept of capital. I have tried hard to discover what Mr. Keynes means by investment by examining the use he makes of it, but all in vain. It might be hoped to get a clearer definition by exclusion from the way in which he defines the "current output of consumption goods" for, as we shall see later, the amount of investment stands in a definite relation to the current output of consumers' goods so that their aggregate cost is equal to the total money income of the community. But here the obscurities which obstruct the way are as great as elsewhere. While on page 135, the cost of production of the current output of consumption goods is defined as total earnings *minus* that part of it which has been earned by the production of investment goods (which a few pages earlier (p. 130) has been defined as "non-available output *plus* the increment of hoards"), there occurs on page 130 a definition of the "output of consumption goods during any period" as "the flow of available output *plus* the increment of Working Capital which will emerge as available output," i.e. as including part of the as yet non-available output which, in the passage quoted before, has been included in investment goods and therefore

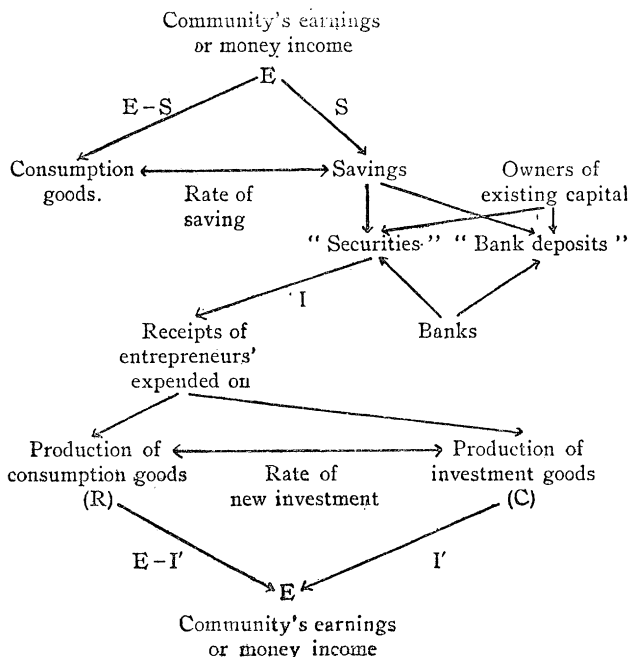
excluded from the current output of consumption goods. And still a few pages earlier (Vol. I, p. 127) a "flow of consumers' goods" appears as part of the available output, while on the same page "the excess of the flow of increment to unfinished goods in process over the flow of finished goods emerging from the productive prices" (which, obviously, includes "the increment of Working Capital which will emerge as available output" which, in the passage quoted before, is part of the output of consumption goods) is now classed as non-available output. I am afraid it is not altogether my fault if at times I feel altogether helpless in this jungle of differing definitions.

VI

In the preceding sections we have made the acquaintance of the fundamental concepts which Mr. Keynes uses as tools in his analysis of the process of the circulation of money. Now we must turn to his picture of the process itself. The skeleton of his exposition is given in a few pages (Vol. I, pp. 135-40) in a series of algebraic equations which, however, are not only very difficult, but can only be correctly understood in connection with the whole of Book III. In the adjoining diagram, I have made an attempt to give a synoptic view of the process as Mr. Keynes depicts it, which, I hope, will give an adequate idea of the essential elements of his exposition.

E , which stands at the top and again at the bottom of the diagram, represents (according to the definition which opens Book III) the total earnings of the factors of production. These are to be considered as identically one and the same thing as (*a*) the community's money income (which includes all wages in the widest sense of the word, the normal remuneration of the entrepreneurs, interest on capital, regular monopoly gains, rents and the like) and (*b*) "the cost of production." Though the definition does not expressly say so, the use Mr. Keynes makes of the symbol E clearly shows that that "cost of production" refers to current output. But here the first difficulty arises. Is it necessarily true that the E , which was the cost of production of current output, is the same thing as the E which is earned during the period when this current output comes on to the market and which therefore is available to buy that current output? If we take the picture as a crosscut at any moment of time, there can be no doubt that the E at the top and the E at the bottom of our diagram, i.e. income available for the purchase of output and the earnings of the factors of production, will be identical, but that

DIAGRAMMATIC VERSION OF MR. KEYNES' THEORY OF THE CIRCULATION OF MONEY⁶



⁶ The formulæ on which the above diagram is based are as follows :

$$\begin{aligned}
 R + C &= O \text{ (quantity of total current output)} \\
 \frac{E}{O} &= W_1 \text{ (rate of efficiency earnings)} = \frac{W}{e} \text{ (rate of earnings per unit of human} \\
 &\quad \text{effort } \div \text{ the co-efficient of efficiency)} \\
 Q_1 \text{ (Profit on consumption goods)} &= (E - S) - (E - I') = I' - S \\
 P \text{ (Price level of consumption goods)} &= \frac{E}{O} + \frac{I' - S}{R} = W_1 + \frac{Q_1}{R} \tag{1} \\
 Q_2 \text{ (Profit on investment goods)} &= I - I' \\
 P' \text{ (Price level of investment goods*)} &= \frac{E}{O} + \frac{I - I'}{C} = W_1 + \frac{Q}{C} \\
 Q \text{ (Profit on total output)} &= (E - S) + I - E = I - S \\
 \text{II (Price level of total output)} &= \frac{E}{O} + \frac{I - S}{O} = W_1 + \frac{Q}{O} \tag{2}
 \end{aligned}$$

(The numbers in brackets denote Mr. Keynes' first and second fundamental equations respectively.)

There is a disturbing lack of method in Mr. Keynes' choice of symbols, which makes it particularly difficult to follow his algebra. The reader should especially remember that while profits on the production of consumption goods, investment goods, and total profits are denoted by Q_1 , Q_2 , and Q respectively, the symbols for the corresponding price-levels are chosen without any parallelism as P , P' , and II . On the other hand, there is a misleading parallelism between P and P' and I and I' , where the dash does not stand for a similar relation, but in the former case serves to mark off the price-level of investment goods from that of consumption goods, and in the second case to distinguish the cost of production of the increment of new investment goods (I') from its value (I).

* This formula is not given by Mr. Keynes.

does not prove that the cost of *current output* need necessarily also be the same. Only if the picture were to be considered as representing the process in time as a kind of longitudinal section, and if then the two E's at the top and at the bottom (i.e. current money income and the remuneration of the factors of production which were earned from the production of current output) were still equal, would the assumption made by Mr. Keynes be actually given. But this could only be true in a stationary state : and it is exactly for the analysis of a dynamic society that Mr. Keynes constructs his formulæ. And in a dynamic society that assumption does not apply.

But whatever the relations of earnings to the cost of production of current output may be, there can be no doubt that Mr. Keynes is right when he emphasises the importance of the fact that the flow of the community's earnings of money income shows " a twofold division (1) into the parts which have been earned by the production of consumption-goods and investment-goods respectively and (2) into parts which are *expended* on consumption goods and savings respectively " (Vol. I, p. 134) and that these two divisions need not be in the same proportion, and that any divergence between them will have important consequences.

Clearly recipients of income must make a choice : they may spend on consumption goods or they may refrain from doing so. In Mr. Keynes' terminology the latter operation constitutes saving. In so far as they do save in this sense, they have the further choice between what one would ordinarily call hoarding and investing or, as Mr. Keynes (because he has employed these more familiar terms for other concepts) chooses to call it, between " bank-deposits " and " securities." In so far as the money saved is converted into " loan or real capital," i.e. is lent to entrepreneurs or used to buy investment goods, this means a choice for what Mr. Keynes calls " securities " while when it is held as money this means a choice for " bank deposits." This choice, however, is not only open to persons saving currently, but also to persons who have saved before and are therefore owners of

⁷ Vol. I, p. 141. Some readers may find it confusing that Mr. Keynes uses " bank deposits " and " savings deposits " interchangeably in this connection without explaining why a few lines after having introduced the term " bank deposits " in a special technical sense, he substitutes " savings deposits " for it. But as savings deposits are defined (Vol. I, p. 36) as bank deposits " held, not for the purpose of making payments, but as means of employing savings, i.e. as an investment," this substitution is quite consistent with the definition, though it is certainly irritating that the employment of savings " as an investment " in this sense is to be contrasted with their other possible use for " securities " which again means investment, but in another, special sense.

the whole block of old capital. But even this is not yet the end. There is a third and most important factor which may affect the relation between what is currently saved and what becomes currently available for the purposes of investment: the banks. If the demand of the public for bank deposits increases either because the people who save invest only part of the amounts saved, or because the owners of old capital want to convert part of their "securities" into "bank deposits," the banks may create the additional deposits and use them to buy the "securities" which the public is less anxious to hold, and so make up for the difference between current saving and the buying of securities. The banking system may, of course, also create deposits to a greater or a lesser extent than would be necessary for this purpose and will then itself be one of the three factors causing the divergence between savings and investment in "securities."

On the other hand, entrepreneurs will receive money from two sources: either from the sale of the output of consumption goods, or from the "sale" of "securities" (which means investment in the ordinary sense), which latter operation may take the form of selling investment goods they have produced or raising a loan for the purpose of holding old or producing new investment goods. I understand—I am not sure whether Mr. Keynes really intends to convey this impression—that the total received from these two sources will be equal to the value of new investment, but in this case it would be identical with the amount of the "securities," and there would then be no reason to introduce this latter term. If, however, I should be mistaken on that point, the symbol I (which stands for the value of new investments) would not belong to the place where I have inserted it in the diagram above.

In regard to this total of money at the disposal of entrepreneurs, these have a further and, as must be conceded to Mr. Keynes, to a certain extent independent choice: they have to decide what part of it shall be used for the current production of consumption goods and what part for the production of new investment goods. But their choice is by no means an arbitrary one; and the way in which changes in the two variables mentioned above and changes in technical knowledge and the relative demand for different consumption goods (those which require more or less capital for their production) influence the relative attractiveness of the two lines is the most important problem of all, a problem which can be solved only on the basis of a complete theory of capital. And it is just here, though, of course, Mr. Keynes

devotes much effort to the discussion of this central problem, that the lack of an adequate theoretical basis and the consequent obscurities of his concept of "investment," which I have noted before, make themselves felt. The whole idea that it is possible to draw in the way he does a sharp line of distinction between the production of investment goods and the current production of consumption goods is misleading. *The alternative is not between producing consumption goods or producing investment goods, but between producing investment goods which will yield consumption goods at a more or less distant date in the future.* The process of investment does not consist in producing side by side with what is necessary to continue current production of consumption goods on the old methods, additional investment goods, but rather in producing *other* machinery, for the same purpose but of a greater degree of efficiency, to take the place of the inferior machinery, etc., used up in the current production of consumption goods. And when the entrepreneurs decide to increase their investment, this does not necessarily mean that at that time more original factors of production than before are employed in the production of investment goods, but only that the new processes started will have the effect that, because of their longer duration, *after some time* a smaller proportion of the output will be "available" and a larger "non-available." Nor does it mean as a matter of course that even that part of the total amount spent on the factors of production which is not new investment but only reproduction of capital used up in the current production of consumption goods, will become available after the usual time.

VII

But, in addition to all these obscurities which are a consequence of the ambiguity of the concept of investment employed by Mr. Keynes, and which, of course, disturb all the apparent neatness of his mathematical formulæ, there is a further difficulty introduced with these formulæ. In order to provide an explanation of the changes in the price-level (or rather price-levels) he needs, in addition to his symbols denoting amounts of money or money-values, symbols representing the physical quantities of the goods on which the money is spent. He therefore chooses his units of quantities of goods in such a way that "a unit of each has the same cost of production at the base date" and calls O "the total output of goods in terms of these units in a unit of time, R the volume of liquid Consumption-goods and Services flowing onto

the market and purchased by the consumers, and C the net increment of investment, in the sense that $O=R+C$ " (Vol. I, p. 135). Now these sentences, which are all that is said in explanation of these important magnitudes, give rise to a good deal of doubt. Whatever "cost of production" in the first sentence means (I suppose it means money cost, in which case R would be identical with $E-I'$ and C with I' at the base date), *the fact that these units are based on a relation existing at an arbitrarily-chosen base date makes them absolutely unsuitable for the explanation of any dynamic process.* There can be no doubt that any change of the proportion between what Mr. Keynes calls production of consumption goods and what he calls production of investment goods will be connected with changes of the quantities of the goods of both types which can be produced with the expenditure of a given amount of costs. *But if, as a consequence of such a change, the relative costs of consumption goods and investment goods change, this means that the measurement in units which are produced at equal cost at some base date is a measurement according to an entirely irrelevant criterion.* It would be nonsense to consider as equivalent a certain number of bottles and an automatic machine for producing bottles because, before the fall in the rate of interest made the use of such a machine profitable, it cost as much to produce the one as the other. But this is exactly what Mr. Keynes would be compelled to do if he only stuck to his definitions. But, of course, he does not, as is shown by the fact that he treats $\frac{E}{O}R$

as identical with $E-I'$ and $\frac{E}{O}C$ as identical with I' throughout periods of change—which would only be the case if his units of quantity were neither determined by equality of money cost at the base date (money cost without a fixed base would give no measure of quantities) nor, indeed, by any cost at the base date at all, but by some kind of variable "real cost." This is probably what Mr. Keynes has in mind most of the time, though he never says so—but I cannot see how it will help him in the end.

But not only does the division of O into its component parts R and C give rise to such difficulties. The use which is made of O alone is also not free from objections. We shall see in a moment that $\frac{E}{O}$ (i.e. the total income divided by the total output) forms one of the terms of both his fundamental equations. Mr. Keynes calls this the "money rate of efficiency earnings of the

factors of production," or more shortly the "money rate of efficiency earnings." Now let me remind the reader for a moment that E means, as identically one and the same thing, (1) the community's money income, (2) the earnings of the factors of production and (3) the cost of production, and that it expressly includes interest on capital and therefore in any case interest earned on existing capital goods.⁸ I must confess that I am absolutely unable to attach any useful meaning to his concept of "the money rate of efficiency earnings of the factors of production" if capital is to be included among the factors of production and if it is *ex hypothesi* assumed that the amount of capital and therefore its productivity is changing. If the units in which O is measured are in any sense cost units, it is surely clear that interest will not stand in the same relation to the cost of production of the capital goods as the remuneration of the other factors of production to their cost of production? Or does there lie at the basis of the concept some attempt to construct a common denominator of real cost so as to include "abstinence"?

Mr. Keynes shows a certain inclination to identify efficiency earnings with efficiency wages (as when he speaks about the prevailing type of contracts between entrepreneurs and the factors of production being that of efficiency-earnings rather than effort-earnings—what does efficiency-earnings or even effort-earnings mean in regard to capital?—or when he speaks about the rate of earnings per unit of human effort (cf. Vol. I, pp. 135, 153, 166 *et seq.*), and in regard to wages the concept of efficiency earnings certainly has some sense if it is identified, as it is on page 166, with piece wages. But even if we assume that all contracts with labour were on the basis of piece wages, it would by no means follow that so long as existing contracts continue, efficiency wages would always be $\frac{E}{O}$. Piece rates relate only to a single workman or perhaps a group of workmen and their respective immediate output, but never to output as a whole. If, at unchanged piece rates for the individual workmen, total output rises as a consequence of an improved organisation of the total process of production, $\frac{E}{O}$ may change (because O is

⁸ On page 211 (Vol. 1) it is expressly stated in connection with some special problem that "in this case interest is simply the money-rate of earnings of one of the factors of production," but as E includes interest, and the money-rate of efficiency earnings of the factors of production is expressed by $\frac{E}{O}$ this must be true generally and not only in that particular context.

increased) without any corresponding change in the rate of money earnings of the individuals. A type of contract according to which the earnings of factors engaged in the higher stages of production automatically changed as their contribution to the output of the last stage changed not only does not exist, it is inconceivable. There is, therefore, no market where the "money rate of efficiency earnings of the factors of production" is determined, and no price or group of prices which would correspond to that concept. What it amounts to is, as Mr. Keynes himself states in several places (e.g. Vol. I, p. 136), nothing else but the average cost of production of some more or less arbitrarily-chosen units of output (i.e. such units as had "equal costs at the base date") which will change with every change of the price of the units of the factors of production (including interest) as well as with every change in the organisation of production, and therefore with every change not only in the average price of the factors of production, but also with every change in their relative prices—changes which generally lead to a change in the methods of production and therefore in the amount of output produced with a given amount of factors of production. To call this the "money rate of efficiency earnings of the factors of production" and occasionally even simply "rate of earnings" can have no other effect than to convey the misleading impression that this magnitude is determined solely by the existing contracts with the factors of production.

VIII

Mr. Keynes' picture of the circulation of money shows three points where spontaneous change may be initiated: (1) the rate of saving may change, i.e. the division of the total money income of the community into the parts which are spent on consumption goods and saving respectively; (2) the rate of investment may change, i.e. the proportion in which the factors of production are directed by entrepreneurs to the production of consumption goods and the production of additional investment goods respectively; (3) banks may pass on to investors more or less money than that part of the savings which is not directly invested (and that part of the old capital which is withdrawn from investment) but converted into bank deposits so that the total of money going to entrepreneurs as investment surpasses or falls short of total savings.

If only (1) changes, i.e. if the rate of saving changes without any corresponding change in (2) and (3) from the position

existing before the change in (1) (which is to be taken as an equilibrium position) took place the effect will be that producers of consumption goods receive so much more or less for their output than has been expended on its production as $E-S$ exceeds or falls short of $E-I'$. $(E-S) - (E-I')$ or $I' - S$, i.e. the difference between savings and the cost of investment, will be equal to the profits on the production of consumption goods; and as this magnitude is positive or negative entrepreneurs will be induced to expand or curtail output. Provided that (3) remains at the equilibrium position, i.e. that banks will pass on to the entrepreneurs exactly the amount which is saved and not invested directly, the effect on the production of investment goods will be exactly the reverse of the effect on the production of consumption goods. That is to say (positive or negative) profits made on the production of consumption goods will be exactly balanced by (negative or positive) profits on the production of investment goods. A change in (1) will, therefore, never give rise to total profits, but only to partial profits balanced by equal losses, and only lead to a shift between the production of consumption goods and the production of investment goods which will go on until profits on both sides disappear.

It is easily to be seen that the effect of changes of the type (2) will, if not accompanied by changes in either (1) or (3), be of exactly the same nature as of changes in (1). Positive profits on the one hand and negative profits on the other will soon show that the deviation from the equilibrium position existing before without a corresponding change in (1) is unprofitable and will lead to a re-establishment of the former proportion between the production of consumption goods and the production of investment goods.

Only a change in (3) will lead to total profits. (This is also shown by the formula for total profits, namely $Q = I - S$.) Now the causes why I may be different from S are of a very complex nature, and are investigated by Mr. Keynes in very great detail. We shall have to discuss his analysis of this problem when we come to his theory of the bank rate. For present purposes, it will, however, be more convenient to take the possibility of such a divergence for granted, and only to mention that the fact that more (or less) money is being invested than is being saved is equivalent to so much money being added to (or withdrawn from) industrial circulation, so that the total of profits, or the difference between the expenditure and the receipts of the entrepreneurs, which is the essential element in the second term of the funda-

mental equations, will be equal to the net addition to (or subtraction from) the effective circulation. It is here, according to Mr. Keynes, that we find the monetary causes working for a change in the price-level; and he considers it the main advantage of his fundamental equations that they isolate this factor.

IX

The aim of the fundamental equations is to "exhibit the causal process, by which the price-level is determined, and the method of transition from one position of equilibrium to another" (Vol. I, p. 135). What they say is essentially that the purchasing power of money (or the general price-level) will deviate from its "equilibrium position," i.e. the average cost of production of the unit of output, only if I' or I (if the price-level in general and not the purchasing power of money, or the price-level of consumption goods is concerned) is different from S . This has to be constantly kept in mind lest the reader be misled by occasional statements which convey the impression that this applies to every change in the price-level, and not only to changes relatively to cost of production⁹ or that the "equilibrium position" is in any way definitely determined by the existing contracts with the factors of production,¹⁰ and not simply the cost of production, or what means the same thing, the "money-rate of efficiency earnings of the factors of production."

The best short explanation of the meaning of the fundamental equations I can find is the following (Vol. I, pp. 152-3): "Thus, the long period equilibrium norm of the Purchasing Power of Money is given by the money-rate of efficiency earnings of the Factors of Production; whilst the actual Purchasing Power oscillates below or above this equilibrium level according as the cost of current investment is running ahead of, or falling behind, savings. . . . A principal object of this Treatise is to show that we have here the clue to the way in which the fluctuations of the price-level actually come to pass, whether they are due to oscillations about a steady equilibrium or to a transition from one equilibrium to another. . . . Accordingly, therefore, as the banking system is allowing the rate of investment to exceed or

⁹ Cf. e.g. on page 158 of Vol. I, where Mr. Keynes speaks simply of the "condition for the stability of the purchasing power" where he obviously does not mean absolute stability but permanent coincidence with the "equilibrium level."

¹⁰ Cf. on page 138 of Vol. I, where it is said that "these equations tell us that the price of consumption goods is equal to the rate of earnings of the factors of production *plus* the rate of profits per unit of output of consumption goods."

fall behind the rate of saving, the price-level (assuming that there is no spontaneous change in the rate of efficiency-earnings) will rise or fall. If, however, the prevailing type of contract between the entrepreneurs and the factors of production is in terms of effort-earnings W and not in terms of efficiency-earnings W_1 (existing arrangements probably lie as a rule somewhere between the two) then it would be $\frac{I}{e} P$, which would tend to rise or fall, where, as before, e is the coefficient of efficiency."

This says quite clearly that not all changes of the price-level need to be started by a divergence between I' (or I) and S , but that it is only one particular cause of such changes, i.e. the changes in the amount of money in circulation, which is isolated by this form of equation. But the peculiar substitution of the misleading term "the money-rate of efficiency earnings of the Factors of Production" for simply money cost of production seems at places to mislead Mr. Keynes himself. I cannot see any reason whatever why, as indicated in the passage just quoted, and elaborated at length in a later section (pp. 166-170), so long as the second term is in the equilibrium position, i.e. zero, the movement of the price-level should be at all dependent upon the prevailing type of contract with the factors of production. So long as the amount of money in circulation, or more exactly E , remains unchanged, the fluctuations in the price-level would by no means be determined by the existing contracts, but exclusively by the amount of factors of production available and changes in their efficiency, i.e. by the two factors affecting total output. All Mr. Keynes' reasoning on this point seems to be based on the assumption that existing contracts will be changed by entrepreneurs only under the inducement (or pressure) of positive (or negative) profits *created by a change in the second term*. But to me there seems, on the contrary, no doubt possible that if a change in the coefficient of efficiency (or the amount of the factors of production available) occurs, existing contracts will have to be changed unless there is a change in the second term. *The difference seems to lie in the fact that Mr. Keynes believes that it is possible to adapt the amount of money in circulation to what is necessary for the maintenance of existing contracts without upsetting the equilibrium between saving and investing*. But under the existing monetary organisation, where all changes in the quantity of money in circulation are brought about by more or less money being lent to entrepreneurs than is being saved, any change in the circulation *must* be accom-

panied by a divergence between saving and investing. I cannot see why "if such spontaneous changes in the rate of earnings as tend to occur require a supply of money which is incompatible with the ideas of the Currency Authority or with the limitations on its powers, then the latter will be compelled, in its endeavour to redress the situation, to bring influences to bear which will upset the equilibrium of Investment and Saving, and so induce the entrepreneurs to modify their offers to the factors of production in such a way as to counteract the spontaneous changes which have been occurring in the rates of earnings" (Vol. I, p. 167). To me it seems rather that if the currency authority wished to adapt the supply of money to the changed requirements, it could do so only by upsetting the equilibrium between saving and investment. But Mr. Keynes later on expressly allows for such increases in the supply of money as correspond to the increase of output and regards them as not upsetting the equilibrium. But how can the money get into circulation without creating a discrepancy between saving and investment? Is there any justification for the assumption that under these conditions entrepreneurs will borrow more just to go on with current production and not use the additional money for new investment? And even if they do use it only to finance the increased production, does not even this mean new investment in the interval of time until the additional products reach the consumer?

It seems to me that by not clearly distinguishing between stable cost of production per unit of output, stable contracts with the factors of production, and stable total cost (i.e. an invariable E) Mr. Keynes is led to connect two things which have nothing to do with one another: on the one hand the maintenance of a price-level which will cover costs of production while contracts with the factors of production are more or less rigid, and on the other hand the maintenance of an equilibrium between saving and investment. But without changes in the quantity of money and therefore without a divergence between I' and S , not only the Purchasing Power of Money, but also the Labour Power of Money, and therefore contracts with the factors of production would have to change with every change in total output.

There can, of course, be no doubt that every divergence between I or I' and S is of enormous importance. But that importance does not lie in the direction of its influence on the fluctuations of the *price-level*, be it its absolute fluctuations or its

fluctuations about an equilibrium position, determined by the existing contracts with the factors of production.

It is true that in this attempt to establish a direct connection between a divergence between I and S, or what amounts to the same thing, a divergence between the natural and the money rate of interest, and the changes in the price-level, Mr. Keynes is following the lead of Wicksell. But it is just on this point that—as has been shown by Mr. D. H. Robertson¹¹ among English economists, and by the present writer¹² on the Continent—Wicksell has claimed too much for his theory. And even if Mr. Keynes substitutes for the absolute stability of the price-level which Wicksell had in mind, a not clearly defined equilibrium price-level, he is still searching for a more definite relation between the price-level and the difference between saving and investment than can be found.

X

So far we have been mainly concerned with the tools which Mr. Keynes has created for the explanation of dynamic processes and the trade cycle. It is intended to discuss his actual explanation, beginning with the theory of the bank rate and including the whole of Book IV, in a second part of this article.¹³

There is just one word more I feel I should add at this point. It is very likely that in the preceding pages I have quite often clothed my comments in the form of a criticism where I should simply have asked for further explanation and that I have dwelt too much on minor inaccuracies of expression. I hope it will not be considered a sign of inadequate appreciation of what is undeniably in so many ways a magnificent performance that what I have had so far to say was almost exclusively critical. My aim has been

¹¹ D. H. Robertson, *Money*, New revised edition, London 1928, p. 99.

¹² *Geldtheorie und Konjunkturtheorie*, Vienna, 1929, pp. 61, 131 *et seq.*

¹³ Considerations of space have compelled the splitting up of this article. But there are other reasons which make me welcome the opportunity of delaying the second part of my criticism. As I had to confess at the beginning of this article, it is sometimes extremely difficult to find out exactly what the meaning of Mr. Keynes' concepts is. On several occasions I have had to point out that several conflicting definitions are given for the same concept, and on many other points I am by no means certain whether I have understood Mr. Keynes correctly. It is very difficult to follow his subsequent complicated analysis so long as these ambiguities are not cleared up. One has to distinguish at every point the different meanings the exposition assumes according as concepts like investment, etc., are interpreted according to this or to that of the several possible meanings it is given. There have accumulated so many questions of this kind which Mr. Keynes could certainly clear up that it is probably wiser to stop for the moment in the hope that further elucidations will in the meanwhile provide a firmer basis on which discussion may proceed. [Part II of this article will probably appear in *ECONOMICA*, November, 1931.—ED.]

throughout to contribute to the understanding of this unusually difficult and important book, and I hope that my endeavour in this direction will be the best proof of how important I consider it. It is even possible that in the end it will turn out that there exists less difference between Mr. Keynes' views and my own than I am at present inclined to assume. The difficulty may be only that Mr. Keynes has made it so extraordinarily hard really to follow his reasoning. I hope that the reviewer will be excused if, in a conscientious attempt to understand it, he may sometimes have been betrayed into impatience with the countless obstacles which the author has put in the way of a full understanding of his ideas.

VIENNA.

Reflections on the Pure Theory of Money of Mr. J. M. Keynes (*continued*)¹

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XI

TOWARDS the end of his summary of the argument contained in those sections of the *Treatise* which were discussed in the first part of this article, Mr. Keynes writes: "If the banking system controls the terms of credit in such a way that savings are equal to the value of new investment, then the average price-level of output as a whole is stable and corresponds to the average rate of remuneration of the factors of production. If the terms of credit are easier than this equilibrium level, prices will rise, profits will be made. . . . And if the terms of credit are stiffer than the equilibrium level, prices will fall, losses will be made. . . . Booms or slumps are simply the expression of the results of an oscillation of the terms of credit about their equilibrium position."² This brings us to the first and, in many respects, the most important question we have to consider in this second article, viz. Mr. Keynes' theory of the Bank Rate.

The fundamental concept, upon which his analysis of this subject is based, is Wicksell's idea of a natural, or equilibrium, rate of interest, i.e. the rate at which the amount of new investment corresponds to the amount of current savings—a definition of Wicksell's concept on which, probably, all his followers would agree. Indeed, when reading Mr. Keynes' exposition, any student brought up on Wicksell's teaching will find himself on what appears to be quite familiar ground until, his suspicions having been aroused by the conclusions, he discovers that, behind

¹ The first part of these "Reflections" was published in *ECONOMICA* No. 33 (August 1931). See also Mr. Keynes' reply and the author's rejoinder in *ECONOMICA* No. 34 (November 1931).

² *Treatise on Money*, pp. 183-4 of Vol. I. Unless otherwise stated, all page references in this article are to Vol. I of the *Treatise*.

the verbal identity of the definition, there lurks (because of Mr. Keynes' peculiar definition of saving and investment) a fundamental difference. For the meaning attached by Mr. Keynes to the terms "saving" and "investment" differs from that usually associated with them. Hence the rate of interest which will equilibrate "savings" and "investment" in Mr. Keynes' sense is quite different from the rate which would keep them in equilibrium in the ordinary sense.

The most characteristic trait of Mr. Keynes' explanation of a deviation of the actual short-term rate of interest from the "natural" or equilibrium rate is his insistence on the fact that this may happen independently of whether the effective quantity of money does, or does not, change. He emphasises this point so strongly that he could scarcely expect any reader to overlook the fact that he wishes to demonstrate it. But, at the same time, while he certainly *wants* to establish this proposition, I cannot find any proof of it in the *Treatise*. Indeed, at all the critical points, the assumption seems to creep in that this divergence is made possible by the necessary change in the supply of money.³

It is quite certain that his reason for believing that a difference between saving and investment can arise without the banks changing their circulation does not become clear in the first section of the relevant chapter. In this section he distinguishes three different strands of thought in the traditional doctrine—only the first and third of which are relevant to this point, so that the second, which is concerned with the effect of the Bank Rate on international capital movements, may be neglected here. According to Mr. Keynes, the first of these strands of thought "regards Bank Rate merely as a means of regulating the *quantity* of bank money" (p. 187) while the third strand "conceives of Bank Rate as influencing in some way the rate of investment and, perhaps, in the case of Wicksell and Cassel, as influencing the rate of investment relatively to that of saving" (p. 190). But, as Mr. Keynes himself sees in one place (p. 197), there is no necessary conflict between these two theories. The obvious relation between them, which would suggest itself to any reader of Wicksell—a view which was certainly held by Wicksell himself—is that since, under the existing monetary system, changes

³ I do not refer here to certain passages (e.g. on pp. 198, 272, II, 100) where this assumption is quite explicitly expressed; these are probably accounted for by the fact that Mr. Keynes actually believed something of this sort when he first began working on Book III of the *Treatise* (see his reply to the first part of this article, p. 389).

in the amount of money in circulation are brought about mainly by the banks expanding or contracting their loans, and since money so borrowed at interest is used mainly for purposes of investment, any addition to the supply of money, not offset by a reverse change in the velocity of circulation, is likely to cause a corresponding excess of investment over saving; and any decrease will cause a corresponding excess of saving over investment. But Mr. Keynes believes that Wicksell's theory was something different from this and, in fact, rather like his own, apparently because Wicksell thought that one and the same rate of interest may serve both to make saving and investment equal *and* to keep the general price-level steady. As I have already stated, however, this is a point on which, in my view, Wicksell was wrong. But there can be no doubt that Wicksell was emphatically of the opinion that the possibility of there being a divergence between the market rate and the equilibrium rate of interest is entirely due to the "elasticity of the monetary system" (see *Geldzins und Güterpreise*, p. 101, *Vorlesungen*, p. 221 of Vol. II) i.e. to the possibility of adding money to, or withdrawing it from, circulation.

XII

Mr. Keynes' own exposition of the *General Theory of the Bank Rate* (pp. 200 to 209) does not, by any means, solve the problem of how a divergence between the Bank Rate and the equilibrium rate should affect prices and production otherwise than by means of a change in the supply of money. Nowhere more than here, is one conscious of the lack of a satisfactory theory as to the effects of a change in the equilibrium rate; and of the confusion which results from the fundamentally different treatment of fixed and working capital. In most parts of his analysis, one is not clear whether he is speaking of the effects of *any* change in the Bank Rate, or whether what he says applies only to the effect of the Bank Rate being different from the market rate; nowhere does he make it clear that a central bank is in a position to determine the rate only because it is in a position to increase or decrease the amount of money in circulation.

But the least satisfactory part of this section is the oversimplified account of how a change in Bank Rate affects investment or, rather, the value of *fixed* capital—since, for some unexplained reason, he here substitutes this latter concept for the

former. This explanation consists merely in pointing out that, since " a change in Bank Rate is not calculated to have any effect (except, perhaps, a remote effect of the second order of magnitude) on the prospective yield of fixed capital " and since the conceivable effect on the price of that yield may be neglected, the only " immediate, direct and obvious effect " of a change in the Bank Rate on the value of fixed capital will be that its given yield will be capitalised at the new rate of interest (p. 202). But capitalisation is not so directly an *effect* of the rate of interest; it would be truer to say that both are effects of one common cause, viz. the scarcity or abundance of means available for investment, relative to the demand for those means. Only by changing this relative scarcity will a change in the Bank Rate also change the demand price for the services of fixed capital. If a change in the Bank Rate corresponds to a change in the equilibrium rate it is only an expression of that relative scarcity which has come about independently of this action. But if it means a movement away from the equilibrium rate, it will become effective and influence the value of fixed capital only in so far as it brings about a change in the amount of funds available for investment.

It is not difficult to see why Mr. Keynes came to neglect this obvious fact. For it is scarcely possible to see how a change in the rate of interest operates at all if one neglects, as Mr. Keynes neglects in this connection, the part played by the circulating capital which co-operates with the fixed capital; only in this way can one see how a change in the amount of free capital will affect the value of invested capital. To over-emphasise the distinction between fixed and circulating capital, which is, at best, merely one of degree, and not by any means of fundamental importance, is a common trait of English Economic Theory and has probably contributed more than any other cause to the unsatisfactory state of the English theory of capital at the present time. In connection with the present problem it is to be noted that his neglect of working capital not only prevents him from seeing in what way a change in the rate of interest affects the value of fixed capital, but also leads him to a quite erroneous statement about the degree and uniformity of that effect. It is simply not true to state that a change in the rate of interest will have no noticeable effect on the yield of fixed capital; this would be to ignore the effect of such a change on the distribution of circulating capital. The return attributable to any piece of fixed capital, any plant, machinery, etc., is, in

the short run, essentially a residuum after operating costs are deducted from the price obtained for the output, and once a given amount has been irrevocably sunk in fixed capital, even the total output obtained with the help of that fixed capital will vary considerably, according to the amount of circulating capital which it pays at the given prices, to use in co-operation with the fixed capital. Any change in the rate of interest will, obviously, materially alter the relative profitableness of the employment of circulating capital in the different stages of production, according as an investment for a longer or shorter period is involved; so that it will always cause shifts in the use of that circulating capital between the different stages of production, and bring about changes in the marginal productivity (the "real yield") of the fixed capital which *cannot* be so shifted. As the price of the complementary working capital changes, the yield and the price of fixed capital will, therefore, vary; and this variation may be different in the different stages of production. The change in the price of working capital, however, will be determined by the change in the total means available for investment in all kinds of capital goods ("intermediate products"), whether of durable or non-durable nature. Any increase of means available for such investment will necessarily tend to lower the marginal productivity of any further investment of capital, i.e. lower the margins of profit derived from the difference between the prices of the intermediate products and the final products by raising the prices of the former relatively to the prices of the latter.

It would appear that Mr. Keynes' failure to see these interrelations is due to the fact that he does not clearly distinguish, in the passage referred to above, between the *gross* and the *net* yield of fixed capital. If he had concentrated on the effects of a change in the rate of interest on the net yield, as being the only relevant phenomenon, he could hardly have failed to see that the effect of such a change on fixed capital is not quite as direct and uniform as he supposes; and he would certainly have remembered also that there exists a tendency for the net money yield of real capital and the rate of interest to become equal. Thus, the process of capitalisation at any given rate of interest means merely that, while money is obtainable at a rate of interest lower than the rate of yield on existing capital, borrowed money will be used to purchase capital goods until their price is so enhanced that the rate of yield is lowered to equal the rate of interest; and *vice versa*.

XIII

Although these deficiencies account for the fact that Mr. Keynes has not seen what I think is the true effect of a divergence between Bank Rate and equilibrium rate of interest, their existence does not give an explanation of Mr. Keynes' own solution to this problem. This has to be sought elsewhere, viz. as already indicated, in Mr. Keynes' peculiar concept of saving. He believes that, in order to maintain equilibrium, new investment must be equal not only to that part of the money income of all individuals which *exceeds* what they spend on consumers' goods *plus* what must be re-invested in order to maintain existing capital equipment (which would constitute saving in the ordinary sense of the word); but also to that portion of entrepreneurs' "normal" incomes by which their actual income (and, therefore, their expenditure on consumption goods) has fallen short of that "normal" income. In other words, if entrepreneurs are experiencing losses (i.e. are earning less than the normal rate), and make up for such losses either by cutting down their own consumption *pari passu*, or by borrowing a corresponding amount from the savers, then, argues Mr. Keynes, not only do these sums make replacement of the old capital possible, but there should also be a further amount of *new* investment corresponding to these sums.⁴ And as Mr. Keynes obviously thinks that saving (i.e. the refraining from buying consumers' goods) may, in many cases, actually cause some entrepreneurs to suffer losses which will absorb some of the savings which would otherwise have gone to new investment, this special concept of saving probably explains why he suspects almost *any* increase in saving of being conducive to the creation of a dangerous excess of saving over investment.

In order to arrive at a clearer understanding of this point, let us try to see what usually happens when people begin to save. The first effect will be that *less* consumers' goods are sold at existing prices. This does not mean that their prices must fall, still less that their prices must decline in proportion to the decrease in demand. Actually, the first effect will probably be that the sellers of consumers' goods, being unable to retail as much as before at existing prices, will, rather than sell at a loss,

⁴ As regards the inclusion of such sums in Mr. Keynes' concept of saving, cf. *Treatise*, Vol. I, p. 139, and my Rejoinder, *ECONOMICA* No. 34, p. 400. That Mr. Keynes actually wants additional new investments to correspond to savings in this sense, has now become quite clear from his definition of net investment, to be found at the top of page 397 of the same issue of *ECONOMICA*.

decide to increase temporarily their holdings of these goods and to slow down the process of production.⁵ This is not only to be expected for psychological reasons, but it is important to note here that this action on the part of entrepreneurs is not only in their own interest, but is necessary in order to make the desire to save effective. Saving must involve a reduction in consumption, in order that there may be accumulated, in finished or semi-finished form, a stock of consumers' goods, which will serve to bridge the gap between the time when the last products of the former (shorter) process of production are consumed and the time when the first products of the new, more capitalistic, process reach the market.⁶ And by holding their goods for some time, entrepreneurs will probably be able (if the saving has led to new investment) to dispose of them at the former price.

If, however, we assume that, for some reason or other, producers of consumers' goods prefer to go on producing at full capacity, selling at a loss in the hope that the demand will ultimately revive and that they will suffer smaller losses than a reduction of output might have involved, then, as Mr. Keynes rightly points out, if production is to be maintained at the same level, they must make up for their losses in one of four possible ways: they must cut down their own expenditure (or, in Mr. Keynes' terminology, they must *save* in order to cover their losses); reduce their bank balances; borrow from the people who save; or sell to these people other capital, such as securities. According to Mr. Keynes, it is in these cases that investment will remain below saving and it is, therefore, these cases which we must consider more closely.

The task of finding out whether, in any given situation, saving will or will not exactly correspond to investment in Mr. Keynes' sense, is rendered somewhat difficult because, as I have repeatedly pointed out, he has not provided us with a clear and unequivocal definition of what he means by "investment." But, for the present purpose, we can surmount the difficulty by simply taking his account of what happens when investment falls short of saving and then investigating whether these effects manifest themselves in our particular case. Now, the effect of an excess of saving over investment, according to Mr. Keynes,

⁵ This tendency is likely to be modified only to the extent that the cost of carrying goods makes it advisable to reduce prices so as to dispose of them more quickly. But it must be remembered that these costs, also, will be reduced as a consequence of the fall of interest and that this will act as an inducement to merchants to carry larger stocks.

⁶ Cf. Vol. I, p. 283, and my *Prices and Production*, p. 79.

will be that total incomes will not be sufficient to purchase total output at prices which cover costs. (If I and $I' = S$, then the rate of efficiency earnings, $W_1 = \frac{E}{O}$, is constant and identical with P and Π , the price level of consumption goods and the price level of output as a whole, respectively.) The question now, is whether an excess of saving over investment in Mr. Keynes' sense, caused by a part of savings being used to cover losses in any of the above-mentioned ways, will cause total incomes to fall below total cost of production.

The answer to this question seems to me to be an emphatic negative. Two cases are conceivable according to the way in which production is financed by producers of consumption goods who do not reduce their output but suffer losses and go on producing as much as before. When the same output of consumption goods is made possible by the decreased expenditure of the entrepreneurs, incomes derived from the production of consumption goods will not fall off by more than the initial decline in the demand for consumption goods, as the decreased consumption of the entrepreneurs will to the same extent offset the effects of the initial decrease on incomes. In the other case, where producers of consumption goods do not reduce their own consumption but cover their losses by borrowing or selling capital assets, clearly the income derived from the production of consumption goods will not decline at all.⁷ In the former case, therefore, the total income-stream will remain the same as when an amount equal to the new savings is being used for new investment and, in the latter case, the same will be true provided that the excess (if any) of saving over what has been lent or paid to the losing entrepreneurs is used for new investment. Mr. Keynes, however, seems to believe that a reduction in entrepreneurs' expenditure on consumption goods constitutes a net decrease in the demand for these goods, different from, and in addition to, that shift of incomes from producers of consumption goods to producers of capital goods, which will always be the initial effect of an increase in saving; and that, in order to prevent undesirable disturbances, this reduction in consumption should be offset by a corresponding amount of additional new investment, to be made possible by increased loans from the banks.

Let us, for the moment, concentrate on this example in which

⁷ I neglect in this connection, as Mr. Keynes neglects, the third possible case where entrepreneurs reduce their balances in order to continue production. The effect here would, obviously, be similar to that of an increase in the quantity of money.

the entrepreneur, who is making losses, cuts down his consumption, this being the only available means of maintaining his capital and of recovering it for re-investment. If, in spite of the fact that he is making losses, he re-invests it in the same line of production, instead of shifting it to some more profitable employment, then his sacrifice will be in vain because, after the next turn-over of this capital, he will be face to face with a new loss equal in amount to the old. What is wanted in order to make effective not only his efforts to maintain his capital, but also the initial saving, is a reduction in his output, in order to set free the factors which are needed for the new investment. But, so long as he insists upon maintaining his output at the old level, his saving (in Mr. Keynes' sense) not only cannot, but certainly *should not* give rise to any new investment. In the other case, where the losing entrepreneur obtains from other savers the capital necessary to make up for his losses, it is, no doubt, true that these individual savings are wasted, i.e. make no increase of the capital equipment possible. But this is so only because it is *assumed* that the losing entrepreneur is consuming his capital and (since the savings of other people are required to compensate for this) is thus preventing any net saving. But since, on balance, there is no excess of incomes over net earnings, *there is no reason why any new investment should take place*; this is also shown by the fact that, because the production of consumption goods is going on at an unchanged rate, no factors of production can be set free for use in the production of new investment goods. *Any attempt to bring about an increase in investment to correspond to this "saving" which is already required to maintain the old capital, would have exactly the same effect as any other attempt to raise investment above net saving; inflation, forced saving, misdirection of production and, finally, a crisis.* It must be remembered that, so long as entrepreneurs insist on producing consumption goods at the old rate, and selling them below normal cost, no restriction of consumption and, therefore, no real saving is effected; and no stock of consumption goods will be accumulated to bridge the time gap to which we referred above (p. 28).

At the same time, it is, of course, true that under Mr. Keynes' assumption saving will lead to a fall in the general price level, because this assumption implies that, in spite of the decreased demand for the available part of the output, the money which is not spent on consumers' goods is injected into a higher stage of the process of production of these consumers' goods in order to maintain

the output and price there. The only effect of saving, on this assumption, would, therefore, be that the money would, as it were, skip the last stage of the productive process (consumers' goods), and go directly to the higher stage to maintain the demand there; and the consequence would be that no increase in demand would occur anywhere to offset the decreased demand for consumers' goods, and there would be no rise of other prices to compensate for the effect produced on the price level by the fall in the price of consumption goods.

All this is, however, true only because it is *assumed* from the outset that, in spite of the fact that investment in the production of consumption goods has become less profitable (or even, perhaps, a losing proposition), entrepreneurs insist on investing just as much here as before and (in so far as they do not provide the capital themselves by reducing their consumption) offer to the savers better terms than the producers of capital goods. I cannot help feeling that Mr. Keynes has been misled here by his treatment of interest as part of the "rate of efficiency earnings of the factors of production" which he considers to be fixed by existing contracts, so that capitalists will get the same return wherever they invest and only the incomes of entrepreneurs will be affected. In any case, it seems to me that a complete neglect of the part played by rate of interest is involved in the assumption that, after investment in the production of consumption goods has become relatively less profitable, some other openings for investment which are now more profitable, will not be found.

The most curious fact is that, from the outset, all of Mr. Keynes' reasoning which aims at proving that an increase in saving will not lead to an increase in investment is based on the assumption that, in spite of the decrease in the demand for consumption goods, the available output is not reduced; this means, simply, that he assumes from the outset what he wants to prove. This could be shown by many quotations from the *Treatise* and it would be seen that some of his most baffling conclusions, such as the famous analogy between profits and the widow's cruse and losses and the Danaid jar, are expressly based on the assumption "merely (*sic!*) that entrepreneurs were continuing to produce the same output of investment goods as before" (pp. 139-40). But in his recent Rejoinder to Mr. D. H. Robertson (*Economic Journal*, December 1931, p. 412), Mr. Keynes admits that he did not, in his book, deal in detail "with the train of events which ensues when, as a consequence of mak-

ing losses, entrepreneurs reduce their output." This is really a most surprising admission from an author who has set out to study the shifts between available and non-available output and wants to *prove* that saving will not lead to the necessary shifts.

To sum up the somewhat prolonged discussion of this point; in none of the cases which we have considered will there occur those effects which should follow if saving and investment (in the ordinary sense) diverge, viz. total income exceeding or falling short of the cost of total output; and *there is no reason why saving and new investment, in Mr. Keynes' sense, should correspond.* By arbitrarily changing the meaning of familiar concepts, Mr. Keynes has succeeded in making plausible a proposition which nobody would accept were it stated in ordinary terms. In the form stated by Mr. Keynes, this proposition certainly has nothing to do with Wicksell's theory, nor can Wicksell be held responsible for Mr. Keynes' interpretation.

XIV

The point discussed in the last section shows what is, obviously, the main reason for Mr. Keynes' belief that a divergence between saving and investment may arise without a change in the amount of the effective circulation. But there are two further reasons given in the *Treatise*. One of these, although it is (as Mr. Keynes himself points out) of but negligible importance, is indeed a conceivable case in which such a divergence may arise for non-monetary reasons; while the other, which is, no doubt, of great importance, clearly relies on a change in the effective circulation. I shall try to dispose of the less important point here and deal more thoroughly with the second in the next section.

The conceivable case in which saving might exceed investment without a change in the effective circulation is where part of the savings might be permanently absorbed by the security market. If this occurred to any considerable extent, i.e. if Mr. Keynes' Business-deposits B, or that part of his Financial Circulation which serves to effect the transfer of securities were to vary by large amounts, this would indeed mean that a corresponding part of the savings would not lead to new investment because of the "Financial Circulation stealing resources from the Industrial Circulation" (p. 254). But since Mr. Keynes himself argues (pp. 244, 249, 256, 267) that the *absolute* variability of Business deposits B is, as a rule, only small in proportion to the total quantity of money, and since his utterances have even been inter-

preted, probably justly, as a denial of the view that security speculation can absorb any credit,⁸ we could safely ignore this possibility if Mr. Keynes' later exposition, particularly his Rejoinder to Mr. D. H. Robertson, did not create the impression that he is now inclined to attach more importance to this point. The particular case, in which security transactions seem to assume this new importance to him, is, however, one of the cases already discussed in the last section and not one of the typical cases which might, at first thought, spring to the mind. It is the case in which the producers of consumption goods cover the losses, which they have suffered as a result of the increased saving, by selling securities. In this case, it might be said that the fall in prices is due to the fact that the money saved finds its way to the producers of consumption goods *via* the purchase of securities instead of *via* the purchase of consumption goods, so that a security transaction has taken the place of a commodity transaction and the total stream of money directed to the purchase of commodities (and, therefore, the price level of those commodities) has fallen. What I think about this case has already been said in the last section.

XV

The last and, perhaps, the most important cause of a disequilibrium between saving and investment, given by Mr. Keynes, is a change in the effective circulation—not a change in the *amount* of money, but merely in its effectiveness or in the velocity of circulation. Just as the potential saver has to make a double choice and decide, firstly, whether he will save at all and, secondly, whether he will invest or hoard what he has saved; so there are, also, two ways in which his decisions may cause savings to exceed investment: either because he saves more than entrepreneurs are willing to use for new investment or because he hoards his savings instead of making them available for investment. The first factor, which is the one discussed above in section XIII and which is only very inadequately characterised in the preceding sentence, is christened by Mr. Keynes "the excess saving factor," while he calls the second, which we must now study, "the excess bearish factor" (p. 145). As already indicated, the problem to be studied here is the problem of hoarding; not, however, the hoarding of cash but the much more complicated and interesting problem of "hoarding"

⁸ Professor J. H. Williams in *The Quarterly Journal of Economics* (XLV/4), August 1931, p. 569.

in a society where all current money consists of bank deposits.⁹

It is undeniably true that economists in general still make too much use of the assumption that saving means, in the first instance, that people accumulate cash which they will soon bring to their bank if they do not invest it otherwise. Little attention has been given to the fact that, since a large part of our current money is now in the form of bank deposits, there is no need for people to bring their savings to the bank; and that, therefore, an increase in the amount of money left at the banks as savings, need not increase the power or willingness of the banks to lend. This is particularly true if people leave their savings on current account—as is often the case where interest is paid on these; and to a considerable extent, also, if they transfer them from current account to deposit account, since this will increase the lending power of the bank only in proportion to the difference, if any, between the percentage of reserve held against current accounts and deposit accounts respectively.¹⁰ One of the great merits of Mr. D. H. Robertson's work is that he has forcefully drawn attention to this fact—the existence of which makes any practical solution to these problems extremely difficult. I think, however, that it should be theoretically clear that what happens in such a case is essentially the same thing as hoarding (i.e. a decrease in the velocity of circulation of money) and that these particular considerations only show that the practical importance of this phenomenon is much greater than most economists used to suppose.

Mr. Keynes' elaboration of this contribution of Mr. Robertson is, in many respects, the most interesting part of his theoretical analysis. His contribution consists mainly of a detailed analysis of the causes which will lead people to prefer hoarding to investment or *vice versa*; and, since this depends mainly on the people's expectations about the future price of securities, the analysis becomes an extensive study of the relations between

⁹ It should be remembered, throughout the following discussion, that, in Mr. Keynes' theoretical exposition, it is assumed that bank deposits are the only form of money in general circulation and that the cash, held by the banks as reserve against these deposits, never enters the general circulation (p. 31).

¹⁰ If, for instance, the reserve held against current accounts (demand deposits) is 9 per cent. and the reserve held against deposit accounts (time deposits) is only 3 per cent., then the transfer of any given amount from current account to deposit account will free two-thirds of the reserves formerly held and enable the bank to create additional demand deposits equal to two-thirds of the amount transferred to deposit account. Mr. Keynes would, therefore, be quite consistent if he thought it desirable that banks should not be compelled to hold any reserves against deposit accounts (see II, 13).

bank credit and the stock market. And even if Mr. Keynes is not quite clear, and his solution of the problem not quite satisfactory, there is no doubt that he is here breaking new ground and that he has opened up new vistas.

At the same time, his exposition of this point, which is contained mainly in Chapter X (section III) and Chapter XV, is by no means less difficult than the parts of his discussion to which we have already referred, and I doubt whether anybody could gather, from the text of the *Treatise* alone, the exact meaning of the author's theory on this point. For my own part, I must confess that it is only after studying the further elucidation of this point, provided by the author in his Rejoinder to Mr. D. H. Robertson, that I venture to believe that I see what he is driving at. For the purpose of this discussion, therefore, I shall use his exposition in this rejoinder as much as the original text of the *Treatise*.

Before we can enter upon a discussion of the main problem, however, we must acquaint ourselves with the author's special terminology which, in this connection, is as rich and varied as elsewhere. As mentioned (*ECONOMICA*, No. 33, p. 284), his initial terms for the alternatives which are commonly called "hoarding" and "investing" are "bank deposits" and "securities." But, instead of "bank deposits" (or "savings deposits" or "inactive deposits"), the terms "liquid assets," "hoarded money" or "hoards" are frequently used, while the "securities" become "non-liquid assets." "Active deposits" correspond, of course, to "current accounts" or "demand deposits."

Only a part of the total savings-deposits, viz. "savings deposits B," is an alternative to securities in the sense that the holder takes an adverse view of the prospects of the money value of securities. It constitutes what Mr. Keynes calls the "bear position," "a 'bear' being, therefore, one who, at the moment, prefers to avoid securities and to lend cash; while a 'bull' is one who prefers to hold securities and borrow cash. The former anticipates that securities will fall in cash value and the latter that they will rise" (p. 250). This is quite clear; but when Mr. Keynes goes on to elaborate his concept of the "state of preference for savings deposits" or "state or degree of bearishness" or "degree of propensity to hoard," particularly in his *Economic Journal* article, we find suddenly that it depends not on the expectations with regard to the future price of securities, but on the present price of securities, in the sense that, at any moment of time, a curve expressing the "degree of propensity to hoard" could

be drawn in a system of co-ordinates where the ordinate expresses the "price of non-liquid assets in terms of liquid assets" and the abscissa the quantity of "inactive deposits" or "liquid assets" held by the community (*Economic Journal*, XLI, p. 412). This curve which, according to the explanation given on pages 250-1 of the *Treatise*, probably has a shape somewhat similar to a parabola with an axis parallel to the abscissa and convex towards the ordinate (though the case discussed here may be one of a shift, or change in the shape, of the curve) is, therefore, based on the assumption that, within certain limits, in a given situation any *fall* in the price of securities will cause a *decrease* in the propensity to hoard or, in other words, that any such fall in the price level of securities will strengthen the expectation of a future rise. To me, it seems very doubtful whether any change in present security prices will lead, immediately, to a reverse change in the expectations concerning future price movements.

This demand curve for securities or non-liquid assets assumes importance in connection with Mr. Keynes' further assumption that the banking system is in a position to determine the amount of savings deposits, and that "given the volume of savings deposits created by the banking system, the price level of investment goods"¹¹ (whether new or old) is solely determined by the disposition of the public towards "hoarding money." If we concede both assumptions: the direct dependence of the demand for securities on their present price, and the power of the banking system to determine the volume of savings deposits, then,

¹¹ There is considerable obscurity and contradiction with regard to the relation between the price level of "investment goods" and the price level of "securities." In the passage quoted in the text (and in many other places as, for example, at the top of page 418 in the *Economic Journal* article) the two are, obviously, treated as identical and the sub-section which deals with the determination of the prices of "securities," from which this passage is taken, is headed "The Price-level of New Investment-goods" (p. 140). Here "securities" are expressly defined as "loan or real capital" (p. 141) and the conclusion of the section is summarised in the following sentence: "The price level of investments as a whole and hence of new investments, is that price level at which the desire of the public to hold savings deposits is equal to the amount of savings deposits which the banking system is willing and able to create." Essentially the same statement is made on page 413 of Mr. Keynes' *Economic Journal* article, regarding the determination of the price of "non-liquid assets" which, as we know, is only another name for "securities." But on page 253 it is said that, when security prices are rising, "this is *likely*—in general, but not necessarily—to *stimulate* a rise in *P*, the price level of *new* investment," and on page 249 the following statement occurs: "Nor does the price of existing securities depend at all closely, over short periods, either on the cost of production or on the price of new fixed capital" (my italics). This last passage is the more remarkable in view of the fact that, in the sections dealing with the effect of the bank rate on investment, the effect on the production of fixed capital was alone considered—to the exclusion of all other kinds of investment goods (p. 202).

indeed, this conclusion certainly follows. But both assumptions are highly questionable.

To the former, it need only be answered that any fall in the price of securities is just as likely to create a fear of a further fall as the expectation of a rise. The second is more difficult to refute because, so far as I can see, Mr. Keynes has merely stated it without making any attempt to prove it. It depends, obviously, on the assumption (which, curiously enough, smacks of the fundamental error of the adherents of the banking principle) that the amount of money (or "deposits") required by the industrial circulation is determined independently of the terms on which the banking system is willing to lend; so that any excess of deposits created by the banking system beyond this given amount will necessarily go into "hoards," while any deficiency will come out of these hoards and leave the general industrial circulation unaffected.¹² But this position is not only untenable (which hardly needs proving); it is, also, a curious contradiction of other parts of Mr. Keynes' argument. What can the banking system do to keep savings deposits constant if the public become "bullish" and reduce their savings deposits in order to buy securities? Certainly a reduction in the rate of interest will serve only to stimulate the bull movement. And how could the banking system have any influence on investment at all if all deposits it creates in excess of the given "requirements" of industry become inactive?

The cloud which envelops this part of the activities of the banking system becomes even thicker when Mr. Keynes discusses the function of the banks as intermediaries in the situation in which "two opinions develop between different schools of the public, the one favouring bank deposits more than before and the other favouring securities" (pp. 143, 251). The banking system can do this "by creating deposits, not against securities, but against short-term advances" ("brokers' loans") (*Ibid.*). Now, to take only one case in which, according to Mr. Keynes, an increase in savings deposits may take place at the expense of the Industrial Circulation: viz. an abnormal rise in savings deposits accompanied by a rise in security prices; this may indicate a *difference* of opinion as to the prospects of securities, the party on the "bull" tack in effect buying securities and borrowing money *via* the banking system from the party on the "bear"

¹² "The amount of inactive deposits or hoards actually held, is determined by the banking system, since it is equal to the excess of total bank money created over what is required for the active deposits," *Economic Journal*, Vol. XL1, p. 413; cf. also *Ibid.*, pp. 414, 415 and 419.

tack (p. 251). I am not sure whether, at this point, Mr. Keynes has in mind the fact that the banks re-lend these savings deposits as "loans for account of others" or whether he thinks that the increase in savings deposits will lead the banks to grant additional credits to speculators on their own account. But, be this as it may, I cannot see how this process can, on balance, decrease the amount of active deposits. So long as the preference of one party for savings deposits is offset by a corresponding additional lending to the party preferring securities, any increase in inactive deposits, involved in this process, will *not* mean a corresponding decrease in active deposits.

On the whole, this discussion of the relation between the Industrial and the Financial Circulations accomplishes little beyond showing that any increase in inactive deposits at the expense of active deposits will lead to an excess of saving over investment and that these changes are likely to be affected by changes in expectations as to the future course of security values—a result which is not particularly surprising. What Mr. Keynes says besides this (in particular his *obiter dictum* on the duty of a Central Bank, pp. 254-6) is so closely bound up with the obscurities just mentioned that it is scarcely possible to follow its meaning.

The "excess bearish factor" discussed in this section is the last of the different causes of "the mysterious difference between saving and investment" which Mr. Keynes discusses. The last major subject of his theoretical analysis which we shall discuss here, is the interaction of these different factors during the credit cycle. Before we turn to this problem, however, a few remarks may be made on a point which fits in better here than at any other place in these Reflections.

XVI

The point in question concerns a statement so extraordinary that, if it were not clearly in his book in black and white, one would not believe Mr. Keynes to be capable of making it. In the historical illustrations given in Vol. II, he devotes a whole section to what he calls "the Gibson Paradox," i.e. "the extraordinarily close correlation over a period of more than one hundred years between the rate of interest, as measured by the yield of Consols, and the level of prices as measured by the Wholesale Index Number."¹³ Mr. Keynes reproaches economists

¹³ Vol. II, p. 198.

in general for not having recognised the significance of this phenomenon and urges that it provides a verification of his theory. Without his theory, he contends, it is incapable of explanation, particularly not by "Professor Irving Fisher's well-known theorem as to the relation between the rate of interest and the appreciation or depreciation of the value of money."¹⁴ According to this theorem, he suggests, we should expect just the contrary. Surely this is a definite fallacy, for it can be shown quite easily that this alleged paradox is nothing but an example of Professor Fisher's theorem. In the case of a sum of money, borrowed to-day and repayable a year hence, Mr. Keynes thinks that, "if real interest is 5 per cent. per annum and the value of money is falling 2 per cent. per annum, the lender requires the repayment of 107 a year hence in return for 100 loaned to-day." But the movements to which Mr. Gibson calls attention, so far from being compensatory, are, in fact, aggravating in their effect on the relation between lender and borrower; so that the purchaser of long-dated securities will, if prices rise 2 per cent. per annum, in a year's time possess a sum which is worth 2 per cent. less in money terms, money itself being 2 per cent. less valuable, so that he is 4 per cent. worse off than before. Now this is exactly what one would expect according to Professor Fisher's theorem, because, in the case of long-dated securities, a sale before the date when they become due is not the fulfilment of a contract in which the owner as lender would be in a position to ask for some compensation for the anticipated fall in the value of money; but, *on the contrary, the buyer is in the position of the lender, who (since the amount of the ultimate repayment is given) will naturally offer less if he expects the value of money to fall.* Only if the present holder, at the time when he bought the securities, foresaw the fall in the value of money (and if he found somebody who also foresaw it and was ready to sell) would he have been able to protect himself by offering less for a security which represented a claim to fixed payments in a depreciating money. But I find it utterly impossible to understand why one should expect, as Mr. Keynes obviously does, that a man holding a fixed-interest security should be in a position to ask more interest if the value of money falls. "Gibson's Paradox" is, therefore, no paradox at all and proves nothing in favour of Mr. Keynes' theory.¹⁵

¹⁴ *Ibid.*, p. 202.

¹⁵ While reading the proofs of this article I notice that Professor Irving Fisher himself, in his new *Theory of Interest* (1930, pp. 417 *et seq.*) uses the very same figures of Mr. Gibson which are used by Mr. Keynes, as evidence confirming his theory.

XVII

Within the limits of this article, it is impossible to deal, in the same detail with which the fundamental concepts have been discussed, with the last major subject upon which I wish to touch: viz. the explanation of the credit cycle. It is only natural that, when one tries to use all these concepts as tools for the purpose for which they were forged, all the difficulties which have been pointed out, not only recur but increase. To show in detail how they affect the results, would require a discussion many times longer than that contained in the respective sections of the *Treatise*. All I can do is to take up a few central points and leave unexamined not only the more intricate problems which arise out of the combination of the difficulties already noted but also some further important problems connected with the traditional English concept of capital, particularly the over-emphasised distinction between fixed and circulating capital, an adequate discussion of which would require a separate article.

The first point which must strike any reader, conversant with the writings of Wicksell and of what Mr. Keynes calls the Neo-Wicksell school, is how little use he finally makes of the effects of a monetary dis-equilibrium on *real* investment—which he has been at such pains to develop. What he is really interested in is merely the shifts in the money streams and the consequent changes in price levels. It seems never to have occurred to him that the artificial stimulus to investment, which makes it exceed current saving, may cause a dis-equilibrium in the real structure of production which, sooner or later, must lead to a reaction. Like so many others who hold a purely monetary theory of the trade cycle (as, for example, Mr. R. G. Hawtrey in this country and Dr. L. A. Hahn in Germany), he seems to believe that, if the existing monetary organisation did not make it impossible, the boom could be perpetuated by indefinite inflation. Though the term “over-investment” occurs again and again, its implications are never explored beyond the first conclusion that, so long as total incomes less the amount saved exceed the cost of the available output of consumers’ goods (because investment is in excess of saving), the price level will have a tendency to rise. In Mr. Keynes’ explanation of the cycle, the main characteristic of the boom is taken to be, not the increase in investment, but this consequent increase in the prices of consumers’ goods and the profit which is therefore obtained. Direct inflation for consumption purposes would, therefore, create a boom quite as effec-

tively as would an excess of investment over saving. Hence, he was quite consistent when, despairing of a revival of investment brought about by cheap money, he advocated, in his well-known broadcast address,¹⁶ the direct stimulation of the expenditure of consumers on the lines suggested by other purchasing-power theorists such as Messrs. Abbati, Martin, and Foster and Catchings; for, on his theory, the effects of cheap money and increased buying of consumers are equivalent.

Since, according to this theory, it is the excess of the demand for consumers' goods over the costs of the available supply which constitutes the boom, this boom will last only so long as demand keeps ahead of supply and will end either when the demand ceases to increase or when the supply, stimulated by the abnormal profits, catches up with demand. Then the prices of consumers' goods will fall back to costs and the boom will be at an end, though it need not, necessarily, be followed by a depression; yet, in practice, deflationary tendencies are usually set up which will reverse the process.

This seems to me to be, in broad outline, Mr. Keynes' explanation of the cycle. In essence it is not only relatively simple, but also much less different from the current explanations than its author seems to think; though it is, of course, much more complicated in its details. To me, however, it seems to suffer from exactly the same deficiencies as all the other, less elaborate, purchasing-power theories of the cycle.

The main objections to these theories—I cannot go into details here and must beg permission, therefore, to refer to my other attempts to do so¹⁷—seem to me to be three in number. *Firstly*, that the original increase in investment can be maintained only so long as it is more profitable to increase the output of capital goods than to bid up the prices of the factors of production in the effort to satisfy the increased demands for consumers' goods. *Secondly*, that the increase in the demand for consumers' goods, if not offset by a new increase in the amount of money available for investment purposes, so far from giving a new stimulus to investment, will, on the contrary, lead to a decrease in investment because of its effect on the prices of the factors of production. *Thirdly*, that the very fact that processes of investment have been begun but have become unprofitable as a result of the rise in the price of the factors and must, therefore, be discontinued, is, of itself, a sufficient cause to

¹⁶ Cf. his *Essays in Persuasion*, London, 1931, p. 148 *et seq.*

¹⁷ Cf. my *Prices and Production*, London, 1931; and "The Paradox of Saving," *ECONOMICA*, No. 32, May 1931.

produce a decrease of general activity and employment (in short, a depression) without any new monetary cause (deflation). In so far as deflation is brought about—as it may well be—by this change in the prospects of investment, it is a secondary or induced phenomenon caused by the more fundamental, real, disequilibrium which cannot be removed by new inflation, but only by the slow and painful process of readjustment of the structure of production. While Mr. Keynes has occasional glimpses of the alternative character of an increase in the output of consumers' goods and investment goods,¹⁸ he does not follow up this idea; and, in my view, it is this alone which could lead him to the true explanation of the crisis. But it is not surprising that he fails to do so, for it is precisely in the elucidation of these inter-relations that the tools he has created become an altogether inadequate and unsuitable equipment. The achievement of this object is, indeed, impossible with his present concepts of capital and "investment" and without a clear notion of the change in the structure of production involved in any transition to more or less capitalistic methods. An adequate criticism of Mr. Keynes' explanation of the cycle would, therefore, require a somewhat elaborate description of that process. This I have tried to give in the places referred to. All I shall attempt here will be some further explanation of the three points already mentioned.

XVIII

From Mr. Keynes' Reply to the first part of these Reflections (see *ECONOMICA*, November 1931, p. 395), I gather that he considers what I have called changes in the structure of production (i.e. the lengthening or shortening of the average period of production) to be a long-run phenomenon which may, therefore, be neglected in the analysis of a short-period phenomenon, such as the trade cycle. I am afraid that this contention merely proves that Mr. Keynes has not yet fully realised that *any* change in the amount of capital per head of working population is equivalent to a change in the average length of the round-about process of production and that, therefore, all his demonstrations of the change in the amount of capital during the cycle prove my point (see *Treatise*, Vol. II, Chapters XXVII-XXIX).

¹⁸ For example, when he says (p. 289), that "the incentive to an increased output of capital goods should diminish, just as the incentive to the production of consumption goods increases," or again in the passage at the top of page 310, which clearly implies that it is the quick, and therefore less capitalistic, production of consumers' goods which has become relatively more profitable as a consequence of their higher prices.

Any increase in investment means that, on the average, a longer time will elapse between the application of the factors and the completion of the process and, what is particularly important in this connection, the period is not lengthened only while *new* investment is going on; it will have to be permanently longer if the increased capital is to be maintained, i.e. *total* investment (new and renewed) will have to be constantly greater than before. But if the increase of investment is not the consequence of a voluntary decision to reduce the possible level of consumption for this purpose, there is no reason why it should be permanent and the very increase in the demand for consumers' goods which Mr. Keynes has described will put an end to it as soon as the banking system ceases to provide additional cheap means for investment. Here, his exclusive insistence on new investment and his neglect of the process of re-investment makes him overlook the all-important fact that an increase in the demand for consumers' goods will not only tend to stop new investment, but may make a complete reorganisation of the existing structure of production inevitable—which would involve considerable disturbances and would render it impossible, temporarily, to employ all labour.

So long as the absolute rise in the price of consumption goods is relatively smaller than the rise in the price of investment goods due to a continued expansion of credit, it is true that the upward phase of the cycle will continue. But as soon as the rise in the former overtakes the rise in the latter, this will certainly not mean that "the upward phase of the cycle will have made its appearance" (p. 283). On the contrary it must mean a period of declining investment.¹⁹ And, as all inductive evidence shows, it is the decline in investment (or in the production of producers' goods) and not the impossibility of selling consumers' goods at remunerative prices, which characterises the beginning of the slump. Indeed, it is the experience of all depressions and especially of the present one, that the sales of consumption goods are maintained until long after the crisis; industries making consumption goods are the only ones

¹⁹ Something like this seems to be going on at the present time in Russia where, after the burden imposed by the Five Years' Plan on the consumer was found to be intolerable, the authorities have decided to change their arrangements and speed up the output of consumers' goods. I should not have been surprised if this had led to unemployment just as in a capitalistic society; and in fact, if I have been informed correctly, this has already taken place. This does not, however, lead to an increase in the figure for unemployment, but only in the numbers of so-called unemployable—since workmen are only dismissed on the pretence of inefficiency.

which are prosperous and even able to absorb, and return profits on, new capital during the depression. The decrease in consumption comes only as a result of unemployment in the heavy industries, and since it was the increased demand for the products of the industries making goods for consumption which made the production of investment goods unprofitable, by driving up the prices of the factors of production, it is only by such a decline that equilibrium can be restored.

If the real trouble is that the proportion of the total output which, as a consequence of entrepreneurs' decisions, has become "non-available" is too great relative to what consumers are demanding to have "available"; and if, therefore, the production of "non-available" output has to be cut down, then, certainly, the resulting unemployment is due to more deep-seated causes than mere deflation and can be cured only by such a reduction of consumption relative to saving as will correspond to the existing proportion between "available" and "non-available" output; or by adapting this latter proportion to the former, i.e. by returning to less capitalistic methods of production and thus reducing total output. I do not deny that, during this process, a tendency towards deflation will regularly arise; this will particularly be the case when the crisis leads to frequent failures and so increases the risks of lending. It may become very serious if attempts artificially to "maintain purchasing power" delay the process of readjustment—as has probably been the case during the present crisis. This deflation is, however, a secondary phenomenon in the sense that it is caused by the instability in the real situation; the tendency will persist so long as the real causes are not removed. Any attempt to combat the crisis by credit expansion will, therefore, not only be merely the treatment of symptoms as causes, but may also prolong the depression by delaying the inevitable real adjustments. It is not difficult to understand, in the light of these considerations, why the easy-money policy which was adopted immediately after the crash of 1929 was of no effect.

It is, unfortunately, to these secondary complications that Mr. Keynes, in common with many other contemporary economists, directs most attention. This is not to say that he has not made valuable suggestions for treating these secondary complications. But, as I suggested at the beginning of these Reflections, his neglect of the more fundamental "real" phenomena has prevented him from reaching a satisfactory explanation of the more deep-seated causes of depression.