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Notes on consumption, investment and effective demand: II

Pierangelo Garegnani*

PART II: MONETARY ANALYSIS

In Part I we looked for the premises from which traditional theory derived the assertion that aggregate demand would adjust to productive capacity. These premises were found to lie ultimately in the conception of capital as a 'factor of production' employable in increasing proportion to other factors as the rate of interest falls—the basis, as we argued, of the idea of a demand schedule for 'saving' determining the rate of interest in conjunction with the supply schedule of full employment saving. The deficiencies of that conception of capital led us to the conclusion that, contrary to what is often argued, an analysis conducted in 'real' and 'static' terms provides no basis for the belief that investment decisions can, in the long period, adjust to decisions to save.

In this second Part of the paper, the problem will be approached in terms of the 'monetary' analysis of Keynes' *General Theory* and the subsequent controversy. In section 1, we shall use Wicksell's theory of the price level as an example of how traditional theories would link their 'real' analysis of distribution with their analysis of the money rate of interest. We shall then argue, in section 2, that Keynes's different conclusions concerning the effects of deficiencies in aggregate demand are explained by his rejection of the orthodox theory of the interest rate, and not by the assumption of money-wage rigidity. The examination, in section 3, of the deficiencies of Keynes's own critique of that theory of interest will then pave the way for a discussion, in section 4, of the subsequent attempts to rehabilitate traditional theory. We shall thus finally arrive, in section 5, at those questions of 'real' theory to which the differences between the conclusions of Keynes and those of the orthodox economists are ultimately traceable, and we shall conclude the article by referring back to the results of our analysis in Part 1.

1. An example of the marginalist analysis of the market for loans: Wicksell's monetary theory

While the economic theories prevailing before Keynes's critique assumed a spontaneous tendency to the full employment of productive capacity, they nevertheless had to explain the fact that periods of prosperity alternate with periods of depression, in which there is unemployment and in which production in many sectors falls below

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productive capacity. The explanation of these phenomena was found in obstacles—not unlike the 'frictions' recognised in other branches of economic theory—which retarded the action of the underlying forces described by the theory, obstacles which were generally attributed to the working of the credit system. The treatment of these problems thus came to be part of a theory of money, separate from the main body of economic theory concerned with distribution and relative prices.

One kind of explanation of the alternation between periods of prosperity and of depression saw its origin in fluctuations of the psychological state of confidence, intensified by the speculative purchasing of commodities financed by bank loans when prices rise, and by the inevitable subsequent sales as soon as a downturn in prices is foreseen. This appears to have been Marshall's position. He saw the sole effective remedy for unemployment due to depression as lying in the greatest possible restriction of 'reckless inflations of credit', which are 'the chief cause of all economic malaise', in that they are followed by liquidations and bankruptcies which shake the 'general state of confidence'. In the subsequent period, marked by lack of confidence, individuals, while having the power to purchase, can choose not to exercise that power; and, in particular, they can choose not to lend capital to new firms. Unemployment results in the industries which produce investment goods; unemployment which then tends to spread to the consumer goods industries as well (Marshall, 1920, VI, XIII, 10; see also Marshall, 1965, IV, III, 3, pp. 249–251). Thus, according to Marshall, no real limits to the possibility of employing additional capital in production are involved; the limit consists only in an overestimation of risk, which is bound to disappear as soon as the consequences of the previous wave of optimism have exhausted themselves.

By contrast, an alternative explanation of these phenomena stressed objective factors and, in particular, the discontinuous character of technical progress. This was Wicksell's approach. He wrote: 'The principal and sufficient cause of cyclical fluctuations should rather be sought in the fact that in its very nature technical or commercial advance cannot maintain the same even progress as does, in our days, the increase in needs . . . but is sometimes precipitate, sometimes delayed' (Wicksell, 1935, p. 211; see also Wicksell, 1907, pp. 223–239), which results, according to Wicksell, in fluctuations in the profitability of investment, to which the structure of interest rates on money loans adjusts only with a lag, causing price variations meanwhile. Here we meet Wicksell's monetary theory, to which we must now proceed. This theory constitutes perhaps the most important pre-Keynesian attempt to ground by means of a systematic analysis of the money loan market (the market in which the rate of interest is actually observed) the marginalist concept of interest as the supply-and-demand determined price of the productive factor 'capital'. Moreover, Wicksell's analysis is akin to that of the *General Theory*, in that it is focused on the source and the effects of variations in *aggregate* monetary expenditure: it will thus prove useful as a term of comparison below, when we consider the 'real' or 'monetary' nature of the hypotheses underlying the different conclusions reached by Keynes.

Fundamental to Wicksell's theory is the concept of an interest rate referred to as 'natural', 'normal' or 'real': the rate, that is, at which '*the demand for loan capital and the supply of savings* exactly agree' (Wicksell, 1935, p. 193).† The 'natural' rate, Wicksell

† Savings, the supply of which is referred to by Wicksell in the above passage, should be understood to be the planned gross savings (cf. Pt. I, footnote on p. 393), given by the difference between gross income and consumption under the assumption of full employment of resources with equilibrium relative prices and distribution. (See footnote on p. 66 below, for a discussion of alternative interpretations of these equilibrium prices.)

writes, 'more or less corresponds to the expected yield on the newly created capital' or, as he puts it elsewhere, to the return on capital which becomes 'free' in the course of the period considered, and can thus be 'invested' in the most profitable physical form.† Since the expected return on 'newly created capital' will tend to coincide, under normal conditions, with the return which will be realised, the 'natural' rate of interest is the rate of interest which Wicksell had related, in the real part of his theory, to the data concerning the available quantities of factors, technical knowledge and the tastes of consumers (cf. Wicksell, 1935, pp. 205–206). It follows that the natural rate of interest is liable to vary as a result of changes in any of these data. The explanation of variations in the price level can then be found, Wicksell argues, in the slowness with which the banks adjust their lending rates of interest to variations in the natural rate.

Before proceeding with Wicksell's argument, let us stop to emphasise two aspects of it which are important for us here. The first is the assertion that the market rate of interest can differ from the 'natural' rate for non-negligible periods of time. The second is that the possibility of this is attributed to the existence of the banking system. Wicksell maintains in fact that if money loans were to take place directly, from person to person, their supply would be largely determined by money savings. The forces of demand for, and supply of savings could then act *directly* on the market for money loans and bring the rate of interest back to the level of the natural rate, as soon as the former began to diverge from the latter. Thus if, for example, there were an increase in the profitability of investment, the increased 'demand for loan capital' would encounter the limit to the supply of loans set by the flow of savings: an increase in the market rate of interest, towards the new level of the 'natural' rate, would result. The situation is quite different when there is a developed banking system. Indeed, the volume of bank loans is independent of the flow of money savings: 'By the concentration in their hands of private cash holdings . . . [the banks] possess a fund for loans which is always elastic and, on certain assumptions, inexhaustible' (Wicksell, 1935, p. 194). Hence the banks can accommodate any variation in the demand for loans without changing their rates of interest and can thus sever the link between the market rate of interest and the 'natural' rate which would otherwise have operated through demand and supply in the loan market.

† Wicksell's concept of 'free' capital merits closer consideration because it highlights some difficulties which are implicit in the traditional concepts of the demand for and the supply of saving. At the time of *Geldzins und Güterpreise* (1898), Wicksell assumed that money lent to entrepreneurs for investment would, in the final analysis, be spent solely on consumption goods, to be 'advanced' as wages and rents to the 'original' factors (see, for example, Wicksell, 1965, pp. 102–103); such goods would have constituted a 'free' or 'liquid' capital, which is to be distinguished from 'invested' capital, represented by capital goods. Yet this concept of investment expenditure is invalid, unless one supposes an economy in which the production of consumption goods takes place in annual cycles and starts each year with land and labour unassisted by any capital goods. Under any other assumption, investment expenditure will be largely upon capital goods. Then the consumption goods which the saver has 'forgone' are not produced at all when the investment process develops smoothly; the rôle of such 'forgoing' being only that of freeing for the production of capital goods the resources which would otherwise have been required for the production of the 'forgone' consumption goods. In this case, as Wicksell recognises in the *Lectures* (Wicksell, 1935, p. 192), 'free' capital does not take any *physical* form at all; and the concept merely serves to mark the fact that, in so far as the decisions in question were *correctly foreseen in the past*, the relevant sums of money may be spent on capital goods of any type whatever.

The qualification concerning the necessity that the current saving and investment decisions were correctly foreseen in the past is important: demand for, and supply of saving involve the decisions of *three* groups of people and not just of two, as might appear at first sight. The idea of a 'supply of savings' presupposes the coincidence of the savings decisions of income recipients and the decisions of producers concerning the division of aggregate supply between consumption and capital goods. Similarly, the idea of a demand for saving or investment presupposes that the producers of capital goods correctly foresee the physical composition of the investment demand.

Yet if this direct link between the two rates is broken, Wicksell continues, another, far less rigid link will nevertheless continue to hold good and will act *via* the price level. Let us in fact consider an initial situation of real and monetary equilibrium, in which there occurs an increase in the profitability of investment, and suppose that the banks meet the increased demand for loans by an expansion of credit, leaving the rate of interest unchanged. As the loans come to be used for the purchase of means of production, the flow of aggregate money expenditure will increase: to an initially unchanged consumption expenditure there will be added the increased investment expenditure. This increased aggregate expenditure, meeting a virtually unchanged volume of output, will lead to an increase in money prices: the increase will at first be in the prices of investment goods, but then, when the increased money income thus generated permits increases in consumption expenditure, the prices of consumer goods will also increase—and this latter increase may be contributed to by transfers of resources from the production of consumer goods to that of investment goods (see Wicksell, 1935, p. 194).† If we assume that the money rates of payment to primary factors tend to increase in the same proportion as prices, the profitability of investments will continue to exceed the market rate of interest and, as long as this condition holds good, the inflationary process will continue (ibid., pp. 195–197). An analogous process will take place, but in the opposite direction, when the 'natural' rate of interest falls and the banks keep the market rate unchanged (ibid., p. 200). But, Wicksell concludes, it will be these very cumulative processes of inflation or deflation which will compel the banks eventually to raise, or lower, the market rate of interest towards its 'natural' level (ibid., p. 201), the only level at which there will be price stability.

The theory briefly set out above brings to light the (often implicit) grounds on which the marginalist theorists maintained that the separation between savings decisions and investment decisions—or the influence of monetary factors in the loan market—could not endanger, other than temporarily, the claimed tendency to the full employment of the factors of production. At the basis of their argument there lay the postulate of the elasticity of the demand for capital with respect to the rate of interest.‡ This elasticity,

† To the extent that monetary expansion transfers resources from the production of consumption goods to the production of investment goods, real accumulation will be higher than it would have been at the 'natural' rate. To this extent, the 'natural' rate itself would tend to fall and approach the market rate. Wicksell admits this effect, but considers it to be of secondary importance (evidently because of his implicit assumption of a highly elastic demand for capital) (cf. Wicksell, 1935, pp. 198–199).

‡In *Geldzins und Güterpreise* Wicksell seems to explain the increase in the demand for 'loan capital' that results from a decrease in the rate of interest in terms of the incentive that the growing difference between the rate of profits obtainable in production (equal to the 'natural' rate of interest) and the market rate of interest gives entrepreneurs to expand the *scale* of aggregate output (cf. Wicksell, 1965, pp. 89–90, and Wicksell, 1935, pp. 195–196).

This explanation brings us to the question hinted at above (footnote on p. 64) concerning the relative prices and distribution underlying the schedules of the demand for and supply of saving in traditional theory. Two alternative assumptions are conceivable: (a) that relative prices and factor remunerations are those ruling in the given situation and do not change as we move along the schedules; (b) that wages, the rents of natural resources and the relative product prices are those which would obtain in the equilibrium situation corresponding to the rate of interest assumed for the loan market (see Part I of these Notes, footnote on p. 346). According to assumption (a), used in *Geldzins*, the rate of profits obtainable in production being given, independently of the assumed rate of interest on loans, the search for maximum profits would lead, not only to changes in production methods adopted (factor proportions), but also to changes in the *scale* of every line of production. This explanation of the demand for investible funds does not, however, appear to be acceptable. Since the traditional theory assumes that labour and natural resources always tend to be fully utilised, the tendency to increase the scale of production in the aggregate could only lead to changes in the real remuneration of labour and natural resources. The investment planned to change the scale of production would thus be countermanded when, as it began to be carried

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it was thought, would make it possible for the rate of interest to adjust planned investment to planned savings through the play of demand and supply in the market for money loans. But if this first demand-and-supply mechanism were seriously hampered by monetary factors, that same elasticity would ensure that changes in the rate of interest would suffice to re-establish equilibrium in the face of variations of aggregate expenditure due to inequality between planned savings and investment. It is Wicksell's merit to provide a systematic and rigorous version of this line of thought; even if, in doing so, he shows that the link between saving and investment decisions must often be the indirect one.†

It is not surprising, therefore, that Wicksell did not find, in his analysis of the loan market, any factors which might bring into question the conclusions of the 'real' theory on the tendency to full employment of factors: variations of monetary expenditure are seen to have effects on the level of prices, but not on the levels of production and of factor employment. The rationale for this lay in two complementary elements. On the one hand, there was the idea that on the appearance of unemployment of the primary factors, competition would lead to a decrease in their monetary rates of remuneration; this made plausible the hypothesis that prices would fall in step with monetary expenditure, leaving the volume of output virtually unchanged. On the other hand, this hypothesis did not entail admitting an absurd process of unending deflation or inflation of prices: the elasticity of demand for investible funds in fact ensured the existence of a 'natural' rate of interest to which the banks would be able, and eventually compelled, to bring back the money rate of interest. It was thus natural for Wicksell to suppose that any under-utilisation of productive equipment and primary factors could only be temporary and could therefore be neglected in an analysis of value and distribution conducted at the level of general principles.‡

2. Keynes's theory and the rigidity of money wages

What we must now consider is why Keynes, although starting from premises not unlike those of Wicksell, arrives at radically different conclusions.

The picture which Keynes's *General Theory* draws is well known. As in Wicksell, the system of interest rates is proximately determined by monetary factors. Keynes

† Similar suggestions were frequent in other marginalist writers. Consider, for example, Marshall's argument in *Money, Credit and Commerce* that an influx of precious metals would initially produce a fall in the rates of interest, which would then rise again as a result of the rise in prices that that influx had brought about (Marshall, 1965, IV, II, 2, p. 255).

‡ The possibility is mentioned in the *Lectures* that increases in money demand might be satisfied, in part, by increases in output made possible by the presence of previously unemployed productive resources. Such a possibility is judged to be of secondary importance and is ignored in the rest of Wicksell's discussion (Wicksell, 1935, p. 195).

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out, distribution and relative prices adapt themselves to the rate of interest ruling in the loan market. The demand for investible funds will then in fact turn out to be determined exclusively by the tendency to change the ratio of capital to 'original' factors, i.e. according to assumption (b), as was assumed in the argument of Part I of these Notes (cf. pp. 346–347). (Similar considerations hold for the supply of savings, which will also be influenced by changes in distribution and relative prices.)

In the *Lectures* Wicksell seems to take account of this and to modify somewhat his earlier position (cf., for example, the reference in Wicksell, 1935, p. 195, to 'increasing roundaboutness which is undoubtedly invoked by a fall in interest rates'). Wicksell's reluctance to adopt this second point of view exclusively is probably due to the difficulty of admitting a rapid adjustment of distribution and relative prices to the rate of interest on loans or, alternatively, of assuming correct entrepreneurs' forecasts of such effects. But since assumption (a) is even less acceptable, it would seem that this difficulty is inseparable from the idea of supply and demand schedules for savings.

approaches the problem of the rate of interest from the angle of the demand for and supply of the stock of money. The demand for money, or 'liquidity preference', is explained in terms not only of the two traditional 'transactions' and 'precautionary' motives, but also in terms of the 'speculative motive', which expresses the preference for money, as a means of holding wealth, of those who expect falls in the value of bonds (= increases in the rate of interest). According to Keynes, the demand for money due to this third motive must be elastic with respect to the rate of interest, since the lower is that rate, the greater is the risk that it will rise, and the smaller is the compensation for such risk provided by the interest rate (Keynes, 1936, pp. 201–202). The rate of interest is thus the price which will bring into equality, not the demand for and supply of saving, but rather the desire to hold wealth in the form of money and the quantity of money made available by the monetary authorities. It is therefore determined once 'liquidity preference' and the quantity of money are known. Planned investment, on the other hand, depends on the rate of interest in the manner shown by the 'marginal efficiency of capital schedule'. Once the rate of interest is determined, therefore, the volume of planned investment is also determined, when expressed in 'real' terms, i.e. in wage-units.†

There is thus no reason why the amount of investment should coincide with the amount of saving out of full employment income. Yet equilibrium requires equality between planned investment and planned saving; if that equality is not satisfied, aggregate monetary expenditure will tend to change over time.

It is necessary to distinguish, at this point, between the case in which planned investment exceeds full employment savings and the opposite case. In the former, equilibrium would be reached, according to Keynes, *via* an inflationary process not unlike that found in Wicksell: because of the increase of prices and money wages, the money value of national income (and thus the 'transactions' demand for money) would increase until it caused a rise in the rate of interest great enough to eliminate the cause of the inflation (see, for example, ibid., p. 202). For the analysis of the second case, however, Keynes introduces the 'propensity to consume' and, therewith, the most original part of his analysis. It is assumed that, other things being equal, when employment increases the community will increase aggregate consumption, but by less than income has increased. It is then shown how, when planned investment falls short of planned saving, equality between investment and saving will be achieved through a contraction of the national product. The possibility of 'equilibria' characterised by unemployment of labour and under-capacity working of equipment is thus asserted.‡

Keynes's conclusions concerning his second case stand in sharp contrast to those which Wicksell had reached for the case in which the rate of interest was initially above the 'natural rate'. The search for the sources of this difference cannot but start from the

† Keynes reduces the different qualities of labour to homogeneity by multiplying the quantity of each by the ratio which its wage bears to that of a standard type of labour. These ratios are assumed to be constant (ibid., p. 41).

‡ On the assumption given above concerning the behaviour of consumption, the aggregate demand function will intersect the aggregate supply function from above and the equilibrium can be supposed to be stable. Thus, if employment happened to be higher than is indicated by the equilibrium point, entrepreneurs would have an incentive to reduce the number of workers employed, since the aggregate expenditure in wage units would be *less* than the 'aggregate supply price' of that output. This would be so *if* this expenditure were that shown by the aggregate demand function, i.e. that which would obtain with a disposable income equal to the supply price; *a fortiori*, expenditure will be less than supply price if, as a result of the failure to realise the full supply price, the disposable income is itself less than the 'supply price'. Similarly, entrepreneurs would have an incentive to increase output whenever employment was initially below the equilibrium level.

most obvious difference between the assumptions underlying the two analyses: the high flexibility of money wages assumed by Wicksell but denied by Keynes. As we have seen, Wicksell assumed a tendency for prices and wages to fall in the same proportion as aggregate expenditure; it was precisely this process of price and wage deflation that would eventually oblige the banks to bring the rate of interest down to its 'natural' level. By contrast, Keynes assumes that any shortfall of planned investment relative to planned saving is followed by decreases in total expenditure *measured in wage-units*: he assumes, that is, that money wages do not fall or, more exactly, do not fall in the same proportion as money expenditure has fallen. Given this assumption, there must be a shrinking of output, since the entrepreneurs will not continue to produce at below normal profits. It must now be asked to what extent Keynes's thesis would remain valid were we to admit, with Wicksell, that competition amongst unemployed workers would give rise to a continuous fall in the money wage. Must we then conclude that under-employment 'equilibria' exist only during the time required for a sufficient fall in money wages?

As is well known, Keynes denied that the novelty of his conclusions turned on the hypothesis of money wage rigidity and chapter XIX of the *General Theory* is devoted to this question. The argument develops in two stages. Keynes assumes at first that the fall in the money wage rate will cause a shift in neither the consumption function nor the marginal efficiency of capital schedule. He also assumes that it will not affect the rate of interest. In this case, the fall in wages could not lead to permanent increases of employment and real income (Keynes, 1936, pp. 261–262). Thus, Keynes concludes, the fall in wages could affect employment *only* through its effects on the propensity to consume, on the marginal efficiency of capital schedule, and on the rate of interest.

Keynes then proceeds to the second stage of his argument and considers the effects of a fall in wages on the consumption function and on the marginal efficiency of capital schedule. He concludes that, in a closed economy, these effects will be negative, rather than positive, in their implications for employment. He therefore turns to consider the effects on the rate of interest, remarking that it is to these effects alone that reference can be made by those who claim that wage flexibility will lead to full employment. Yet if the available quantity of money contracts in step with money income, 'there is . . . nothing to hope in this direction'. If the quantity of money remains approximately constant, however, Keynes continues, there will be effects on the rate of interest analogous to those which the monetary authorities can achieve by purchasing bonds on the 'open market'. In either case the quantity of money increases relative to money income: a greater quantity of money thus becomes available to meet the demand for money deriving from the 'speculative motive' and, given the speculative demand schedule, the interest rate must fall. It follows, says Keynes, that, leaving aside the disadvantages specific to this particular method of increasing the relative supply of money, decreases in money wages encounter limits to their effect on the rate of interest analogous to those specific to open market operations. Just as open market operations can have but a limited influence on long-term rates of interest when the increase in the quantity of money is moderate, whereas they can have unfavourable effects on the state of confidence when the increase is large, so a moderate fall in money wage rates will prove insufficient, whereas a large fall could shatter the state of confidence. Keynes thus concludes by asserting firmly that: 'There is, therefore, no ground for the belief that a flexible wage policy is capable of maintaining a state of continuous full employment—any more than for the belief that an open-market monetary policy is capable, unaided,

of achieving this result' (Keynes, 1936, p. 267; but see also p. 27 and our own footnote on p. 71 below).

We shall have reason to return to this argument of Keynes later on and to discuss its limitations. Here we need only note that the hypothesis of money wage rigidity does not suffice to explain the difference between Keynes's conclusions and those of the traditional economists; the flexibility of prices and wages would lead to the full employment of factors *only if* the resulting decrease in the rate of interest could so affect planned investment as to make it equal to full employment savings. Keynes denied that the rate of interest could play that equilibrating role and it is *here*, in the theory of the rate of interest, that he diverges from Wicksell and the other 'orthodox' economists.

Thus two results begin to emerge from this preliminary discussion of Keynes's analysis.

The first result is to confirm what we maintained in Part I of these Notes (see pp. 343–344): the source of the difference between Keynes and the orthodox economists is to be sought in the theory of the rate of interest.

The second result concerns the precise *nature* of this difference in the theory of the rate of interest. Keynes's conclusions rest, in fact, not so much on the particular theory of the rate of interest which he put forward, as on his rejection of the traditional theory, which determined the rate of interest by the demand for and the supply of savings. An interesting expression of this negative rôle which the theory of the rate of interest plays in the *General Theory* may perhaps be found in a seldom noted passage written by Keynes one year after that book. Referring to his own theory and to its genesis, he says:

> the initial novelty lies in my maintaining that it is not the rate of interest, but the level of incomes which ensures equality between saving and investment. The arguments which lead up to this initial conclusion are independent of my subsequent theory of the rate of interest, and in fact I reached it before I had reached the latter theory. But the result of it was to leave the rate of interest in the air. If the rate of interest is not determined by saving and investment in the same way in which price is determined by supply and demand, how is it determined? . . . It was only when [attempts in other directions failed] . . . that I hit on what I now think to be the true explanation (Keynes, 1937, p. 250).

It is then in the *critique* of the traditional theory of interest, rather than in the hypothesis of money wage rigidity, that the roots of Keynes's conclusions are to be sought. It is to that critique, contained in chapter XIV of the *General Theory*, that we must now direct our attention. Indeed, if the critique were well founded, the hypothesis of money wage rigidity would appear to be a consequence, and not a premise of the thesis that there exists no tendency to the full employment of factors. To assume wage flexibility, in the absence of a rate of interest capable of adjusting planned investment to full employment saving, would compel us to allow for an absurd process of unending deflation of prices and wages when investment is less than full employment savings.†

3. Keynes's critique of the traditional theory of interest

Keynes's critique of the traditional theory of interest appears to contain two strands. On the one hand, there is the charge that the theory is indeterminate. To each level of utilisation of productive capacity there corresponds a different real income and hence a different supply of savings schedule: given the marginal efficiency of capital schedule, there are therefore not one but many rates of interest at which planned

† Keynes's conclusions concerning the effects of money wage decreases on the propensity to consume have been questioned in terms of the so-called 'Pigou effect': the significance of the latter for our argument will be discussed below, p. 75, n. †.

investment and planned saving are equal—one for each level of real income (Keynes, 1936, pp. 179–182). On the other hand, there is the thesis that the rate of interest constitutes not the price of savings but, rather, the price needed to induce individuals to hold wealth in forms other than money.

The first criticism does not seem to be well founded. Let us begin by accepting, in accord with traditional theory, the following two propositions: (a) that at each level of real income the action, in the loan market, of the demand for savings and the supply forthcoming at that real income, creates a tendency for the rate of interest to move towards the level at which the two schedules intersect;† (b) that the money wage is flexible in the presence of unemployment.

We now assume a level of investment insufficient to ensure the full employment of labour; by assumption (b) the money wage will fall. As Keynes admits in his discussion of falls in money wages, one can now suppose that the entrepreneurs react initially by increasing output in the expectation of a demand for their products which is unchanged in money terms. Under our present hypothesis, this expectation could not be entirely disappointed, since, the supply of 'real' savings being shifted to the right, there will, by assumption (a), be a tendency for the rate of interest to fall; the consequent increase in investment will make possible the maintenance, at least in part, of the initial increase in employment. Since, by assumption (b), there will be decreases in the money wage as long as there is unemployment, this process will eventually lead to the achievement of full employment. As a result the full-employment supply schedule of savings is the *only* supply of savings to which the theory under examination need refer in the determination of the equilibrium rate of interest: the dependence of the supply of savings on the level of employment does not warrant the charge of indeterminacy laid by Keynes.‡ (Analogous conclusions would be reached if traditional theory were to maintain, with Wicksell, that the presence of the banking system makes assumption (a) unacceptable, but were to admit, at the same time, the possibility, and eventually the necessity, that the banks should bring the rate of interest to its 'natural' level.)

We may therefore confine our attention to the second strand of Keynes's criticism of the received theory of interest. This may be summarised by saying that the traditional theory of interest ignored the effects deriving from the rôle of money as a store of value. When this rôle is given due weight, Keynes states, one must recognise that the aggregate demand for money depends on the rate of interest, as well as on the total money volume of transactions. For a given money value of output, the demand for money will be greater the lower is the rate of interest: the latter will then have the rôle of bringing

† If this assumption is not accepted, the critique of the traditional theory will lie in the reasons for which the assumption is rejected and not in any indeterminacy of the theory.

‡ Keynes himself appears at times to imply that variations in money wages could justify the traditional theory of interest when this refers to a full employment income for defining the supply schedule of saving. Thus he writes, 'the position could only be saved by some complicated assumption providing for an automatic change in the wage-unit of an amount just sufficient in its effect on liquidity-preference to establish a rate of interest which would just offset the supposed shift [of the marginal efficiency of capital], so as to leave output at the same level as before' (Keynes, 1936, pp. 179–180). But in introducing the idea of 'liquidity preference', Keynes here forces his own theory on the traditional one. More relevant to the latter would seem to be another passage: 'If, however, there is a negligible demand for cash from the speculative-motive except for a short transitional interval, an increase in the quantity of money will have to lower the rate of interest almost forthwith, in whatever degree is necessary to raise employment and the wage-unit sufficiently to cause the additional cash to be absorbed by the transactions-motive and the precautionary-motive' (ibid., p. 171). Keynes is here referring to increases in the quantity of money, but the same conclusions hold for reductions in the money wage, given the quantity of money; it is then difficult to see how this position can be reconciled with the assertion that the traditional theory is indeterminate.

about equality between the quantity of money made available by the monetary authorities and the demand for money, not that of equating the demand for and the supply of saving (see, for example, Keynes, 1936, p. 167).

Keynes therefore confines himself, in this second criticism, to counterposing his own theory of interest to the traditional one, and the force of his argument is thus merely that of the theory which he puts forward. The idea that the demand for money depends on the rate of interest—which is quite in accord with marginalist principles when it is presented in terms of equality, at the margin, between the sacrifice of liquidity and the payment therefore—has been generally accepted in subsequent literature. The same has not occurred for the critique of the traditional theory of interest which Keynes wished to base on that idea. Indeed, we shall see in the next section how it has been argued that the rate of interest can equalise *both* the demand for and supply of the stock of money *and* the demand for and supply of savings.

These attempts to reinstate the traditional analysis were undoubtedly encouraged by the feeling that Keynes's theory of interest would not conflict with orthodox theory properly interpreted. As exemplified above by reference to Wicksell, the orthodox theory of interest was only meant to refer to long-run tendencies, destined to assert themselves against the short-term obstacles raised by a number of other factors.

When examined from this standpoint, Keynes's theory of interest appears to be unsatisfactory. The quantity of money demanded on account of the speculative motive depends, Keynes says, not on the absolute level of the rate of interest but, rather, on the extent to which that rate lies below the rates which the various holders of wealth expect in the future (see ibid., p. 201). The position of the speculative demand for money schedule, and hence the rate of interest, thus come to depend on expectations about the future course of the latter. However, in the absence of their ulterior explanation, these expectations introduce a serious element of indeterminacy into the theory. Thus if it were assumed that expected rates of interest tend, albeit with a certain lag, to move parallel to the actual rate of interest, the principal reason advanced by Keynes for the interest-elasticity of the speculative demand for money—the growing divergence between expected rates and the current rate when the latter falls—would lapse. This point is reinforced when it is noted that the supply of money which is to satisfy the speculative demand can only change due to *either* changes in the money value of aggregate output *or* the policy of the monetary authorities: and it is difficult to imagine, in either case, that there will not be some effect on expected interest rates. Keynes does in fact recognise this possible instability of the expectations on which the market rate of interest would depend and he takes it into account by admitting the possibility of shifts in the speculative demand for money schedule in the face of, for example, a central bank policy of monetary expansion (see, for example, ibid., pp. 197–198). Yet it is clear that, in so far as it is probable that speculative demand shifts as the supply of money changes, Keynes's analysis loses much of its force: like any other analysis in terms of demand and supply, it presupposes a sufficient mutual independence of the two schedules.

Keynes's theory appears therefore to rest on the assumption of a considerable degree of stability of the expectations concerning the rate of interest: a stability which can only be based on stable views, on the part of the owners of wealth, as to what constitutes a 'normal' level of the interest rate. This seems in fact to be Keynes's rationale for the 'speculative' demand for money. Yet when it is interpreted in this way, the inadequacy of the liquidity preference theory as a long-period analysis of the rate of interest becomes

even clearer; the average value, over time, of the rate of interest on long-term loans proves to be largely determined by views about the 'normal' rate of interest, views which the theory does not explain (cf. ibid., p. 201).

This deficiency of Keynes's theory was, for example, the starting point for a more direct defence of the traditional theory than that which we shall consider in the next section; the prevailing views about the normal level of the interest rate were explained by some authors in terms of a substantially correct estimation of the rate of interest needed to adjust investment to the economy's full employment level of saving (taken as an average over the long period).† This defence of traditional theory does not appear to be adequately argued, but the very fact that it could be put forward serves to indicate the *lacuna* left by Keynes in his long-period analysis of the rate of interest; a *lacuna* which had to be filled, either by a return to the traditional theory or by its more radical rejection.‡

4. The attempts to rehabilitate traditional theory

If the *General Theory* left the theory of interest at this parting of the ways, Keynes's concept of the marginal efficiency of capital made it easy to return to the traditional theory. Keynes had already considered this possibility when he affirmed that those believing in the re-equilibrating tendencies of the economic system must base their argument on the effects which falls in money wages and prices, or open market operations of the central bank, could have in increasing the quantity of money available for meeting the speculative demand. As was seen in section 2, Keynes had denied that one could thus reach full employment. However, his arguments to this effect—based principally on the negative effects which significant falls in money wages or increases in the quantity of money would have on the 'state of confidence'—lose much of their force when the issue is, not the recovery of the economy from a situation of cyclical depression, but rather the possibility of keeping the average level of investment sufficiently close to the full employment volume of savings over a long period. In this latter context, once it is admitted (on the basis of marginalist principles) that the marginal efficiency of capital schedule is highly elastic with respect to the rate of interest, the decreases in money wages, or increases in the quantity of money, required to ensure a sufficiently high average level of employment no longer appear drastic, as they can now be spread out over a long period of time. Besides, in the long period. the psychological factors summed up in the 'state of confidence' lose much of their force by comparison with the objective factors on which the real profitability of investment is supposed to depend.

† 'What this seems to point to is that [the normal rate of interest] must be determined by people's estimate of the pressure of outside forces of some kind; and it seems natural to suggest that in a free enterprise economy these forces are none other than our old friends productivity and thrift' (Robertson, 1963, p. 388).

‡ There are hints in this latter direction in the *General Theory*. Keynes, in fact, asserts the 'conventional' character of the rate of interest, and hence the capacity of the monetary authorities to control the average level of the interest rate on long-term loans, if they act with sufficient 'persistence and consistency of purpose' (cf. Keynes, 1936, p. 204). This idea which, if consistently developed, would lead to a theory of value and distribution radically different from the marginalist theory (see below, pp. 80–81) does not seem to have been taken up in the subsequent literature.

This is in fact the line of argument taken in the attempts to rehabilitate traditional theory, which we referred to in the previous section.† The dominant concern of these authors with long period tendencies‡ allowed them to ignore the negative psychological effects of falls in wages and prices, or increases in the quantity of money. That same concern explains, in part, a subtle but important shift in the interpretation of the 'speculative' demand for money. This demand is now made to depend not so much on views of what constitutes a normal level of the rate of interest, but rather on the convenience and security deriving from the holding of one's wealth in the form of money; the security in question is relative to those risks of changes in the value of bonds, entirely due to uncertainty, which would exist even when a rise in the rate of interest appeared no more probable than an equal fall.§ By this change in the interpretation of liquidity preference, a sufficient stability is attributed to the demand for money without having recourse to views about a 'normal' rate of interest, which are not explained within the theory. Moreover, one thereby avoids consideration of the possibility of a high elasticity of the demand for money, with respect to the rate of interest, at rates above the minimum level to which we shall refer below; a possibility to which Keynes had attached considerable importance‖ and which can be explained only in terms of sufficiently unanimous views of wealth holders about what constitutes the normal level of the interest rate.

Given these premises, it is not difficult to conclude that, if unemployment of labour leads to the continuous fall of money wages, one will eventually reach—subject to the exception to be considered shortly—a state of equilibrium. In this equilibrium, the ratio between the money value of output and the available quantity of money permits a level of the interest rate at which investment is equal to full employment savings.

The significance of this argument does not depend on the assumption of a high flexibility of money wages, an assumption generally held to be of doubtful applicability. If the flexibility of money wages would permit the achievement of full employment in the way just described, then the same result can be obtained with an expansionary monetary policy. As Modigliani puts it, 'It is the fact that money wages are too high relative to the quantity of money that explains why it is unprofitable to expand employment to the "full employment" level'; and the remedy can take the form of *either* a decrease in money wages *or* an increase in the quantity of money, money wages being constant (cf. Modigliani, 1944, p. 225, and Hicks, 1937, p. 465 and pp. 473–475).

† Hicks (1937) seems to have opened up this line of argument by distinguishing between Keynes's 'special theory' and his 'general theory'. In the former, one would not consider the effect of changes in the money value of output on the demand for money; in the latter, admitting this influence, one would, by contrast, reach 'appreciably more orthodox' conclusions—amongst others, the possibility of increasing employment via money wage reductions, as well as by increases in the quantity of money (Hicks, 1937, pp. 467–470; and p. 465 for the effects of money wage flexibility). The argument was then taken up and rendered more explicit by Modigliani (1944); Haberler (1939), ch. 8 and (1964), pp. 240–243; by Tobin (1955), etc. The conclusions of this line of argument have provided the theoretical basis of the numerous theories of economic growth on traditional lines (see, for example, Solow, 1956, pp. 91–93; Swan, 1956, p. 335; Meade, 1961, pp. 3–5).

‡ Thus in Modigliani (1944, p. 187) the analysis is said to be conducted 'under "static" assumptions', since its object is the 'determinants of equilibrium and not . . . the explanation of business cycles'.

§ On the distinction between these two interpretations of 'liquidity preference', see Robertson (1963), pp. 382–383. For the tendency to adopt the second interpretation of 'liquidity preference' in these rehabilitations, see Hicks (1937), p. 467, and Modigliani (1944), p. 193.

‖ Cf. for example, 'opinion about the future of the rate of interest may be so unanimous that a small change in present rates may cause a mass movement into cash' (Keynes, 1936, p. 172; see also p. 203).

We referred above to an exception to these conclusions. The authors in question in fact admit only one situation in which money wage flexibility, or an expansionary monetary policy, cannot lead the economy back to full employment. This is the so-called 'Keynesian case': a situation in which the rate of interest required to ensure full employment is negative or, at least, lower than that rate of interest which, in the view of the majority of wealth holders, would be barely sufficient to compensate for the risk and inconvenience of holding any part of their wealth in any form other than money. At this level of the interest rate the elasticity of the demand for money would tend to become infinite (cf. Modigliani, 1944, p. 222n; Hicks, 1939, pp. 470–472), and decreases in money wages or increases in the quantity of money could not lead to any further fall in the rate of interest. However, these authors attribute limited importance to this possibility—and here we find, yet again, the basic marginalist idea of a demand for capital which is, under normal conditions, highly elastic with respect to the rate of interest. The inelasticity and position of the schedule of the marginal efficiency of capital which would be needed to explain a full-employment rate of interest lying below that minimum level are held to be possible only in deep depressions, when they would be due to the conditions of uncertainty and over-estimation of risks characteristic of such situations. These authors in fact maintain, agreeing here with Keynes, that a situation in which the preceding accumulation of capital has reduced the actual yield of capital almost to zero has never yet occurred (Modigliani, 1944, p. 222n; Keynes, 1936, p. 207).

The relevance of the 'Keynesian case' is thus confined to the analysis of short-period phenomena and the same is true for the importance of the psychological factors to which Keynes had referred, in chapter XIX of the *General Theory*, in order to deny the possibility of reaching full employment through falls in money wages or increases in the quantity of money. In the former as in the latter context, the psychological state of lack of confidence characteristic of depressions would, as long as it persisted, constitute the obstacle which prevents a return to the full employment of factors, following an argument not unlike that which had been put forward by Marshall long before.†

5. Novel and traditional elements in Keynes's theory: the marginal efficiency of capital

The line of argument considered in the previous section thus leads to a substantial rehabilitation of traditional theory for the long period and, in particular, for accumu-

† A different attempt to rehabilitate the principle of the tendency to full employment is that based on the so-called 'Pigou Effect'. When money wages and prices fall, the aggregate net credit of the private sector of the economy—equal to the total net debt of the government and the central bank (banknotes and government stock) in a closed economy—will increase in real terms. The propensity to save of wealth-holders will consequently fall until the full employment level of savings equals the level of investment forthcoming in the situation under consideration. (Cf. Pigou, 1947, pp. 249–251; Haberler, 1969, pp. 483–489; Patinkin, 1948, pp. 258–270.) This argument does not support the traditional doctrine that the level of investment is determined by the community's propensity to save and is thus of limited interest to us here. One remark concerning it may however be made. It is reasonable to suppose that the greater part of saving comes from high income recipients and that this group will also hold a large fraction of both the public debt and idle money balances. Thus what the 'Pigou Effect' implies is an increase in wealth of high income recipients (whose incomes will also increase in real terms at the expense of tax payers so long as the state pays a constant rate of interest on its debt) such as to lead them to reduce their savings by the required amount. Now—even admitting that the redistribution of wealth and income against private debtors and the redistribution of income through the government's interest payments do not impede the reduction in the propensity to save—it seems hard not to conclude that long before the community comes to accept such a redistribution of wealth, other methods of solving the problem of unemployment will have become inevitable, which will be of more direct and less uncertain effect.

lation. The schema of the long-run inter-relation between 'real' and monetary forces which that argument presents does not differ essentially from that which Wicksell had presented earlier. In the former, as in the latter, it is admitted that monetary factors can, temporarily, keep the market rate of interest at a level other than the full employment rate†—equivalent to the 'natural' rate in Wicksell's theory. In both schemata, however, the full-employment—or 'natural'—rate of interest continues to be the equilibrium one towards which the market rate of interest tends to gravitate. The divergence between the two rates would cause inflationary or deflationary tendencies, whether the latter consist principally of falls in prices and wages or mainly of unemployment of labour; these tendencies would then induce the monetary authorities, who are credited, in both arguments, with proximate control over the rate of interest, to adjust the ruling rate to its 'natural', or full employment, level.‡

When compared with these similarities in the conclusions, the concepts of liquidity preference and of the consumption function—the specifically Keynesian elements of the above rehabilitations of the traditional theory—are of relatively minor importance. These elements are accorded a dominant role only for the analysis of the short period and the trade cycle. In this more limited context, the effects of the rate of interest on the demand for money highlight an obstacle capable of retarding the action of the 'real forces' on the rate of interest, particularly in the case of deflation. The consumption function then allows a theoretical treatment of the effects on real income and employment of decreases in money expenditure in the presence of rigid money wages. Thus, in Hicks's words, Keynes's theory appears to be 'the Economics of Depression'; and, in this perspective, Keynes's specific contribution consisted of laying 'enormous emphasis' on the qualifications to traditional theory, the need for which had already been admitted by Marshall or by his successors (Hicks, 1937, p. 472 and p. 465).

We have clearly moved far from the meaning which Keynes himself attributed to his theory when he contrasted it with the traditional theory, which he held to be applicable only in the 'special case' of full employment. And what is most remarkable is that this reversal of meanings is achieved without rejecting the basic assumptions of the *General Theory*, but, on the contrary, by moving within its conceptual framework. This possibility of attributing contrasting meanings to Keynes's theory would therefore seem to arise from within that theory itself, and it will be of interest, at this point in our argument, to seek to identify its source.

To note that the theory had been formulated by Keynes on the basis of short-period assumptions, and thus left open problems concerning long-period tendencies, does not appear to go to the root of the matter. Indeed, it remains to be explained why Keynes restricted to the short period an argument whose implications would, he thought, reach far beyond the theory of cyclical phenomena.§ Above all, we have to explain why the long-period implications which Keynes thought he could deduce have proved to be open to contradiction within his own theoretical framework.

† It is interesting to note how the concept of a full-employment rate of interest, though a consequence of the idea of a marginal-efficiency-of-capital, is given very little prominence in the *General Theory*, where it just crops up here and there almost accidentally (cf., e.g., Keynes, 1936, pp. 202, 236, 375).

‡ The 'spontaneous' tendency to equilibrium in the case of wage flexibility, asserted in these arguments, still requires that the monetary authorities hold the stock of money constant and thus permit the *ratio* of the available quantity of money to the money value of the national product to rise.

§ For the long-period consequences that Keynes drew from his theory, consider Keynes (1936), pp. 372–373; see also the passage quoted in n. †, p. 81 below as well as, more generally, the first two sections of ch. 24 of the *General Theory*.

It seems that the root of this ambivalence must rather be sought in the composite character of Keynes's theory. The *General Theory* might be said to contain two fundamentally heterogeneous strands of thought, the one superimposed on the other. A vision of the mode of operation of the economic system, which is in radical conflict with that of the dominant theory, is imposed, as if by force, upon a conceptual basis which is to a large extent still the traditional one, thus giving rise to an inherently unstable compromise. The novel part of Keynes's theory centres on the thesis that it is principally variations in the level of aggregate output that equilibrate investment and saving in a capitalist economy,† a thesis which is suggested directly by an unprejudiced observation of the facts. But this thesis was in conflict with the generally accepted theory of distribution on both the latter's main flanks: that of the labour market—where Keynes had to deny that wages would be determined by the equilibrium between the demand for and supply of labour—and that of the capital market—where Keynes had similarly to deny that the rate of interest would be determined by the equilibrium between the demand for and supply of savings. Thus, in order to develop his initial idea and to get it accepted, Keynes had to work out a critique of the traditional theory of distribution and it is in the way in which he conducted that critique that the compromise referred to above finds its origin.

As was seen in Part I of these Notes, one can distinguish two successive logical stages in the traditional analysis of distribution (cf. Pt. I, p. 350). In the first, from the marginalist premises concerning production and consumption one derives the idea that, given the quantities employed of all factors but one, the quantity employed of this latter factor increases as its real rate of remuneration falls. In the next step, it is maintained that, as a result of competition both amongst the entrepreneurs and amongst the owners of factors, there will be a tendency towards rates of remuneration at which the quantity employed will equal the quantity supplied for each factor. Now, in his critique, Keynes accepts the first stage of the argument: in this way he inherits the traditional part of his theory, which is epitomised by the two schedules of the marginal efficiency of capital and of the marginal product of labour. His critique has then to turn exclusively on the second stage of the argument. And at the second stage—with the conclusions from the first stage having already been admitted—the capacity of traditional theory to resist attack proved to be greater than Keynes had thought.

The traditional strand of Keynes's thought does not, of course, merely represent a remnant of received modes of thought which can readily be separated from the remainder of his theory, leaving the latter unaffected. Indeed, it is the schedules of the marginal product of labour and of the marginal efficiency of capital which determine the level of real wages and the volume of investment within the system. One may perhaps wonder how acceptable these determinations are and, above all, how consistent they are with the other parts of Keynes's theory, as soon as problems which are not strictly confined to the short period have to be confronted.‡ The fact remains, nevertheless, that it is thanks to this particular conjunction of traditional elements and short-period assumptions that Keynes is able to develop, to some extent, the novel strand of

† In this connection see the passage from the *General Theory* quoted on p. 70 above.

‡ In Keynes's theory the money rate of interest is made to depend on factors which are largely independent of those affecting the real wage. While this may be admissible in a short-period analysis, in which the distributive variables may be said to diverge from their long-period levels, the same could not be admitted for these latter levels without contradicting the unique, inverse relation which must obtain in the long period between the real wage and the rate of profits (and hence the average long-period rate of

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his thought, without having simultaneously to face the fundamental problems of value and distribution.

However, the price which Keynes has to pay for the traditional strand in his thought becomes clear with respect to the schedule of the marginal efficiency of capital.† As was seen in section 2, the conflict with traditional theory over the tendency to an equilibrium between demand and supply in the labour market is, in effect, reducible to that over the determination of the rate of interest. The critique of the traditional theory of interest becomes then the key to an acceptance of Keynes's arguments—and the concept of the marginal efficiency of capital proves to be the Achilles' heel of that very critique. Keynes sees the rate of interest as determined by monetary factors: but, as Wicksell's earlier analysis had shown, the idea of an investment demand schedule constitutes an obstacle which a monetary theory of interest cannot easily overcome. Indeed, admitting an elastic investment demand schedule leads to maintaining, on the

† An opinion about the nature of the 'marginal efficiency of capital' different from that in the text—and from that of Keynes, who saw his notion as a version of the traditional one (cf., e.g., Keynes, 1936, pp. 139–140)—is advanced by L. Pasinetti, when he writes that such a Keynesian concept reveals a 'different origin' than marginal economic analysis (1974, p. 43). Pasinetti assumes in fact that the prospective yields of capital assets are *independent* of the rate of interest ruling in the loan market (cf., e.g., p. 37). The investment projects could then be always ordered according to a decreasing rate of profitability, independent of the interest rate, thus ensuring the existence of a decreasing relation between the interest rate, and the volume of investment.

We have, however, seen in n. ‡, p. 66 above, that there are some arguments for which the assumption of prospective yields and prices independent of the ruling interest rate does not seem acceptable. We may now add that Keynes himself allowed for the effect of the interest rate on prospective yields (e.g., Keynes, 1936, p. 143). We may also observe that the dependence of prospective yields on the ruling interest rate follows from Pasinetti's own analogy between the marginal efficiency of capital and 'Ricardo's ranking of all lands in a decreasing order of fertility' (Pasinetti, 1974, p. 43): the ordering of lands according to fertility must in fact take into account the changes in interest and prices associated with the extension of cultivation.

Now, when we admit that the prospective yields of capital assets and the ruling interest rate can, and sooner or later will, adjust to each other, it does not seem that a generalised inverse relation between the rate of interest and the volume of investment can find a theoretical basis other than the marginalist notion of an increase in the proportion of capital to other factors as the rate of interest falls. In particular, there seems to be no general reason why the construction of new plant for previously unemployed workers (to which Pasinetti refers on p. 43) should be permanently favoured by a fall of the interest rate rather than by its rise (a rise might indeed raise the long-term profitability of investment and thus provide an incentive for it).

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interest) (cf., e.g., Sraffa, 1960, section 49). Doubts about Keynes's determination of the wage are strengthened when one considers that the assumption of decreasing returns on which it is based may be questioned as soon as we admit: (a) that the degree of utilisation of the existing productive equipment will generally vary with the quantity of labour employed; and (b) that, in the short period, the quantity employed of some types of labour is constant, or varies less than in proportion to the quantity of output. But if the returns to labour were constant or increasing, up to or near full utilisation of existing equipment, then a real wage equal to the marginal product of labour would imply that gross profits remain constant or fall as the level of activity increases, which is clearly contrary to experience. It will also be clear that this same determination of the wage is of no relevance when we leave a strict short-period analysis and must therefore first explain why the productive equipment is what it is rather than some other.

Keynes's use of the marginal efficiency of capital also presents difficulties. In particular, it is not clear in what sense decreasing returns to increases in the stocks of the different capital goods can be assumed, as is done by Keynes (p. 136), when, there being unemployment, additional equipment be used together with additional labour.

These deficiencies regarding the marginal productivity of labour and marginal efficiency of capital may serve to confirm the difficulties Keynes had in reconciling the innovatory and the traditional parts of his thought in the *General Theory*. They can also explain how the desire to bring consistency back into economic theory might have encouraged the attempts to confine the implications of Keynes's theory strictly to short-period analysis.

one hand, the existence of a full-employment level of the rate of interest and, on the other, the presence of inflation, or deflation and unemployment, when the actual rate of interest is not the full employment one; the idea that the market rate of interest tends to gravitate towards its full employment level then acquires plausibility.

It thus seems that the origin of the contrasting meanings attributed to Keynes's theory is to be sought in the doubtful compatibility, from the standpoint of an analysis of long-period tendencies, between the concept of the marginal efficiency of capital and the argument that the level of output plays the leading role in equilibrating planned savings and planned investment. Once the former idea is accepted, it is difficult not to confine the importance of the latter argument to the explanation of the trade cycle and other short-period phenomena. On the other hand, the different conclusions to which Keynes was pointing can be sustained in so far as investment is assumed to be insensitive to the rate of interest, even in the long period. But this assumption is in sharp conflict with the presuppositions of the traditional theory of distribution and cannot find a firm foundation until the critique of that theory has undermined those presuppositions.

If this is so, the conflict between the traditional thesis and that of Keynes, concerning the dependence of investment on the propensity to save, cannot be resolved solely on the terrain of monetary theory, which Keynes chose for his critique. Rather, this conflict leads us back to the questions of 'real' theory discussed in Part I of these Notes. And to the conclusions which were reached there we must now return.

6. Conclusions

Our argument in Part II has thus brought us to an alternative, the central element of which is the acceptance or the rejection of the traditional representation of capital as a productive factor, employable in the economy in quantities which increase relative to the quantities of the other factors as the rate of interest falls. If one accepts this representation and, consequently, the traditional thesis with respect to the dependence of investment on the rate of interest, it becomes difficult to reject the traditional doctrine concerning the long-period relation between the propensity to save and the level of investment; unless, that is, one assumes either capital saturation or a long-period deflationary policy on the part of the monetary authorities. By contrast, if the validity of that representation of the productive process is found wanting, the doctrine that the community's propensity to save determines the level of investment is thereby deprived of its foundation.

Now, the argument presented in Part I leads us to maintain that the second possibility is that which permits a better understanding of the facts and we may conclude that, in a long-period analysis no less than in a short-period one, the level of investment should be considered as independent of the propensity to save.

It is then necessary to distinguish between two possible situations. The first is that in which the incentive for private investment remains, for long periods of time, at such a level that aggregate demand presses on the limits of available productive capacity, in almost all major sectors of the economy. There will then tend to be a price inflation, one effect of which could be that of reducing consumption, thus making room for the high level of investment. In such conditions, a fall, or a reduced increase, in consumption—especially of those goods which draw on productive equipment which could be

used for investment goods†—may have the effect of reconciling the high level of investment with greater price stability.

The more usual situation would, however, be a second one, in which private investment does not reach the limit set by available productive capacity. In this case a fall, or a reduced increase, in consumption could not have any *direct* effect in increasing investment, and the indirect effects could well be negative through the contraction of demand for consumer goods and the consequently reduced incentive to invest.‡

The above conclusion, like any adoption for long-period analysis of the Keynesian thesis concerning the relationship between saving and investment, inevitably implies a rejection of the traditional theory of production and distribution. It thus re-opens the problem of the long-period determination of both the volume of the social product and its distribution between profits and wages. A treatment of these problems is beyond the scope of these Notes, but before concluding we may indicate a few points which directly follow from what we have said so far.

With respect to the long-period determination of the level of social product and labour employment we may return to a question we raised in section 1 of Part I. We there assumed that the productive equipment in the economy was sufficient to employ the entire supply of labour.§ As will be remembered, this was done in order to follow the Keynesian controversy without having to take care of the dominant explanation of 'structural unemployment' in terms of rigid real wages.

We might now note that rigid *real* wages, entailing, as they generally will, rigid *money* wages, could only have strengthened any negative conclusions concerning the long-period dependence of investment on the propensity to save; monetary policy alone would have to be relied on for the necessary adjustments in the interest rate. But when the ground for rejecting the idea of an aggregate demand tending to adjust to productive capacity is that advanced in these Notes, the possibility of 'structural' unemployment emerges quite independently of any rigidity of real wages. The critique of the concept of a demand for capital (investible resources) which is elastic with respect to the rate of interest is, in fact, at one and the same time a critique of the 'twin' concept of a demand for labour which is elastic with respect to the real wage rate (cf. Pt. I, p. 351). If that critique is well founded, no absorption of 'structural' unemployment could be hoped for from lower real wages and any consequent changes in the physical form of the given 'capital endowment'. This also implies that real wages cannot be relied on to ensure that employment possibilities will increase over time in step with the supply of labour. The factors capable of keeping long-period unemployment within socially tolerable limits are then to be sought not in any spontaneous tendency of the demand for labour to adapt to an autonomous growth of population. They have rather

† In the short period, the limited adaptability of the existing productive equipment prevents any global alternative between consumption and investment. This alternative becomes increasingly important beyond the period required to set up new plant. Then, however, it applies chiefly to economies without 'structural' unemployment. Where there is unemployment, the labour required to man the new equipment need not be drawn from other productions which can accordingly continue with older equipment.

‡ 'The growth of capital depends not at all on a low propensity to consume but is, on the contrary, held back by it; and only in conditions of full employment is a low propensity to consume conducive to the growth of capital' (Keynes, 1936, pp. 372–373).

§ Keynes's assumption of a decreasing marginal product from the labour employed with *given productive equipment* has generally been interpreted to mean that the marginal product falls very little as long as there is some unused productive equipment and then falls sharply; a reasonably definite limit to the quantity of labour that can be employed with a given productive equipment is accordingly also implied in that notion.

to be sought in the complex economic and demographic phenomena of mutual adjustment between the demand for and the supply of wage labour, which the history of the capitalistic economies has long presented for study.†

With respect then to the problem of distribution—which is also opened up by any adoption of the Keynesian thesis for long-period analysis—we may notice the relevance here of that relation, often used in these Notes, between the wage and the rate of profits, which, asserted by Ricardo, has recently been taken up again, overcoming the problems encountered by Ricardo and then by Marx for its exact formulation. This relation may in fact provide a basis for the necessary work of reconstruction. Thus, given such a relation, Keynes's suggestion that the average level of the rate of interest on long-term loans will be determined by conventional factors, ultimately subject to the policy of the monetary authorities (Keynes, 1936, pp. 203–204), would suffice to constitute the nucleus of a theory of distribution. Indeed, it seems reasonable to suppose that, as a result of competition in product markets, the average rate of profit and the average rate of interest on long-term loans will tend, over a sufficiently long period of time, to move in step with one another. If, then, the rate of interest depends on the policy of the monetary authorities, both the long-term movement of the average rate of profit‡ and, through the relation just mentioned, that of real wages are explained by that policy. This does not entail maintaining afresh that the wage bargain has no power to change real wages: the policy of the monetary authorities is not conducted in a vacuum and the movement of prices and of the money wages determined in the wage bargain will be amongst the most important considerations in the formulation of that policy.

Bibliography

Haberler, G. 1939. *Prosperity and Depression* (2nd ed.), Geneva, League of Nations
Haberler, G. 1964. *Prosperity and Depression* (4th ed.), London, Allen and Unwin
Hicks, J. R. 1937. Mr Keynes and the classics: a suggested interpretation, *Econometrica*, as reprinted in *Readings in the Theory of Income Distribution*, Toronto (1946)
Hicks, J. R. 1946. *Value and Capital* (2nd ed.), Oxford, Clarendon Press
Keynes, J. M. 1936. *The General Theory of Employment, Interest and Money*, London, Macmillan
Keynes, J. M. 1937. Alternative theories of the rate of interest, *Economic Journal*, June
Marshall, A. 1920. *Principles of Economics* (8th ed.), London, Macmillan
Marshall, A. 1965. *Money, Credit and Commerce*, New York, Kelley (first published 1923)
Meade, J. 1961. *A Neo-Classical Theory of Economic Growth*, London, Allen and Unwin
Modigliani, F. 1944. Liquidity preference and the theory of interest and money, *Econometrica*, as reprinted in *Readings in Monetary Theory*, London, Unwin (1952)
Pasinetti, L. 1974. *Growth and Income Distribution: Essays in Economic Theory*, Cambridge, CUP
Patinkin, D. 1948. Price flexibility and full-employment, *American Economic Review*, as reprinted in *Readings in Monetary Theory*, London, Unwin (1952)
Pigou, A. C. 1947. Economic progress in stable environment, *Economica*, as reprinted in *Readings in Monetary Theory*, London, Unwin (1952)
Robertson, D. H. 1963. *Lectures on Economic Principles*, London, Fontana (first published 1957–59)
Solow, R. 1956. A contribution to the theory of economic growth, *Quarterly Journal of Economics*, February
Sraffa, P. 1960. *Production of Commodities by Means of Commodities*, Cambridge, CUP
Swan, T. 1956. Economic growth and capital accumulation, *Economic Record*, November

† The possibility of what is today called structural unemployment is in fact admitted by Keynes. Cf. e.g., the passage '[The rate of interest] may fluctuate for decades about a level which is chronically too high for full employment' (Keynes, 1936, p. 204; see also ibid., p. 217).

‡ Cf. the hint in this direction given by Sraffa (1960), p. 33.

Tobin, J. 1955. A dynamic aggregative model, *Journal of Political Economy*
Wicksell, K. 1907. The enigma of business cycles, as reprinted in Wicksell, *Interest and Prices*, New York, Kelley (1965)
Wicksell, K. 1935. *Lectures on Political Economy*, vol. II, London, Routledge and Kegan Paul
Wicksell, K. 1965. *Interest and Prices*, New York, Kelley (first published 1898)