TIGHT BINDING BOOK

ESSAYS IN THE THEORY
OF EMPLOYMENT

Essays in the Theory of Employment

BY
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FOREWORD

THERE have been considerable developments since these essays were written, both in theory and in experience. From the point of view of theory, they belong to the period of the first impact upon economic thought of Keynes' *General Theory of Employment, Interest and Money*. From the point of view of experience, they belong to a period when the existence of unemployment over-shadowed all economic problems. I think that they are most easily to be understood in the light of their historical setting, and that any attempt to bring them up to date by shifts of emphasis would be confusing. At the same time I believe that they are not without relevance to the dominant problems of the present day. I have therefore 'not made any substantial changes in the text of the first edition.

I have, however, made a few alterations which might equally well have been made in the first instance. . I have removed an error from the argument on Mobility of "Labour (p. 33), I have simplified the exposition of the effect of inventions on employment (p. 96), and I have amplified the discussion of the influence of exchange depreciation on the balance of trade (p. 143).

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FOREWORD TO FIRST EDITION

THESE essays represent an attempt to apply the principles of Mr. Keynes' *General Theory of Employment, Interest and Money* to a number of particular problems. References to the *General Theory* are provided for the convenience of the reader, not by way of acknowledgment to Mr. Keynes, for the very existence of this book, for what it is worth, must be regarded as an acknowledgment to the work of Mr. Keynes.

The following are reprinted (each with some alteration) by

permission of the editors concerned: 'Disguised Unemployment from the *Economic Journal*, 'The Long-Period Theory of Employ ment' (except Section 5) from the *Zeitschrift für Nationalökonomie* and the first part of 'Some Reflections on Marxist Economics from the *Economic Journal*. 'An Economist's Sermon' wa: originally delivered to a study circle of the Student Christiar Movement at Peterhouse, Cambridge.

<div align="right">JOAN ROBINSON</div>

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PART I

FULL EMPLOYMENT

I

BEFORE discussing the definition and the characteristics of full employment, it is necessary to say something about the factors which influence changes in money wages. A problem which has caused much perplexity is presented by the relationship, as it exists in the minds of employees, between changes in real wages and changes in money wages. As to what actually occurs there is no dispute. A cut in money wages will always be resisted by Trade Unions with whatever force they may command; while a rise in prices, such as occurs when there is an increase in effective demand, does not normally lead to the demand for a rise in money wages sufficient to prevent real wages from falling. Even when Trade Unions are strong enough to prevent money wages from falling, they frequently submit to a fall in real wages, brought about by a rise in prices and accompanied by an increase in employment. Now, any one Trade Union, by allowing its money wage to fall, can in normal circumstances secure an increase in employment for its members, at the expense of a fall in their real wage rate; yet a cut in money wages is usually accepted only under duress. Thus it appears that a fall in real wages, accompanied by an increase in employment, is more universally and more strenuously resisted if it is offered in the form of a cut in money wages than if it is brought about by a rise in prices. If Trade Unions are regarded as thinking in terms of real wages their conduct appears highly inconsistent.

The explanation offered by Mr. Keynes[1] is that the

[1] *General Theory of Employment, Interest and Money*, p. 14.

Trade Unions are concerned, in effect, solely with *relative* real wage rates and, within wide limits, pay no attention to the *general* level of real wages. While another school of thought, of which Professor Pigou[1] is an exponent, holds that the Trade Unions conceive themselves to be stipulating for a real wage rate, but that, owing to a habit of thinking too much in terms of money, they fail to realise (except after a lapse of time) that a rise in prices brings about a fall in real wages. Each of these explanations appears to offer an interpretation of Trade Union psychology which is both dubious and unnecessarily complicated. It seems simpler to say that since Trade Unions, in the nature of the case, can only deal in terms of money wages, they concentrate their attention upon them, and demand a rise, and resist a cut, whenever they feel strong enough to do so. In any actual situation the effect upon employment of a change in money wages is obscure and difficult to diagnose, and the suggestion that a cut in wages will do them good is naturally regarded by the Trade Unions with the utmost suspicion. Their business is to secure the best terms they can for their members and to prevent employers from taking advantage of their monopsonistic position[2] *vis-à-vis* the workers. To carry out these functions they must be on the alert to demand a rise in wages whenever there is a favourable situation for doing so.

On this view, a constant upward pressure upon money wages is exercised by the workers (the more strongly the better they are organised) and a constant downward pressure by employers, the level of wages moving up or down as one or other party gains an advantage.

In any actual situation employment is likely to h.

[1] *Theory of Unemployment*, p. 294. Mr. Champernowne ('Unemployment, Bar and Monetary,' *Review of Economic Studies*, June 1936) adheres, on the whole, to t; Pigovian school, but much of his argument is vitiated by a failure to distingui? between real wage rates and real earnings. Real wage rates fall as employme' increases, but the 'representative' worker (*loc. cit.*, p. 202) must represent both t', employed and the unemployed, and the representative worker's real income v i nominally rise, not fall, as employment increases.

[2] See my *Economics of Imperfect Competition*, p. 282.

increasing and wages rising in some industries at the same time as they are falling in others. The present discussion is confined to a simplified case in which there is perfect mobility of labour, so that the extent of unemployment and the pressure upon money wages is the same at any moment in all trades and all localities.[1] ✓

The effect upon bargaining power of a fall in real wages, in itself—that is to say, the effect of a rise in the cost of living relatively to money wages which is not a symptom of an increase in employment—is double-edged. On the one hand, a fall in the standard of life and a reduction in reserve resources weakens the bargaining position of workers; on the other hand, indignation both cements the bonds of Trade Union organisation and makes the demand for higher wages more insistent.[2] Thus a rise in the cost of living, in itself, may lead either to a rise or to a fall in the level of money wages according to the strength and policy of the Trade Unions. •

An increase in effective demand, given the state of Union organisation and the general conditions of the labour market, will be favourable, for several reasons, to a rise in money wages. First, a man who is secure of his job suffers a loss of real wages when effective demand increases and the cost of living rises; he consequently becomes more anxious than before to demand a higher money wage. A man who is out of work or who holds a precarious job would prefer not to open the question of money wages and to allow the increase in employment to

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[1] Some problems connected with imperfect mobility are discussed below, p. 29.

[2] Similar contradictory tendencies are seen at work in the determination of vomen's wages. It is commonly said that women's wages are relatively low because ney have no family obligations. In itself the carefree state of women should improve neir bargaining position, since unemployment for them is less to be dreaded than it for men. But the fact that their needs are less reduces the incentive to organise, .akes their demands less insistent, and deprives them of the backing of general ıblic opinion, with the result that their bargaining power is generally weaker than at of men. The relatively backward state of women's organisations is not wholly be accounted for in this way, but is also partly due to the fact that a woman does 't normally look forward to spending her whole life in industry, and so has less ᴺtive to demand improvements in the conditions of employment, and, we are to the lack of co-operative spirit characteristic of the female sex.

take its course. As unemployment falls off, men of the first type increase, and of the second type decrease, in numbers and influence. A Trade Union which takes the interests of both types into account will therefore be gradually moved in the direction of demanding higher wages as unemployment falls off. Second, the existence of unemployment weakens the position of the Trade Unions by reducing their financial resources and awakening the fear of competition from non-union labour. Thus even a Union which at the moment represents only employed workers will be more restrained in its action the greater the amount of unemployment outside. Third, the strategic and moral position of Trade Unions is strengthened when profits are rising and real wages falling. Conversely when effective demand declines. Thus movements of the level of employment are the chief influence determining movements in the level of money wages. ⏤

It is idle to attempt to reduce such questions as Trade Union policy to a cut-and-dried scheme of formal analysis,[1] but it is plausible to say, in a general way, that in any given conditions of the labour market there is a certain more or less definite level of employment at which money wages will rise, and a lower level of employment at which money wages fall. Between the two critical levels there will be a neutral range within which wages are constant.

It is sometimes argued that movements in money wages tend in the long run to eliminate unemployment, for a fall in money wages, by reducing the demand for money, tends to lower the rate of interest, and so to increase employment.[2] But the most that can be hoped, in a community where Trade Unions exist, from a policy of

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[1] Cf. below, p. 171.

[2] *General Theory*, p. 263. Cf. below, p. 86. It is by no means a corollary of this argument that the level of employment would tend to be higher in a community in which there were no Trade Unions to resist a fall in wages when unemployment occurs. For without Trade Unions monopsony is more powerful, the ratio of real wages to real profits is smaller, thriftiness is greater and the level of employment with a given rate of interest consequently lower (see p. 94). This effect will te' strongly against the influence of low money wages in increasing employment.

maintaining a constant supply of money and allowing wages to find their own level, is that employment shall be maintained inside the neutral range within which money wages are constant, which is by no means the same thing as the point at which unemployment is tending to disappear.

When employment stands above the upper critical level, then, if conditions are such that a general rise in money wages sets up no reaction to reduce effective demand, there will be a progressive rise in wages with a constant level of employment, for prices and profits will rise with money wages and all the circumstances which led to a first rise in wages will remain in force and lead to a second.[1] But the existence of unemployed workers anxious to find jobs exercises a drag upon the Trade Unions, and the rise in money wages will be slight and gradual. An increase in employment, in this situation, will strengthen the Trade Union position and tend to speed up the rise in money wages, but so long as unemployment remains appreciable the upward movement cannot become overwhelmingly powerful. Thus there is no paradox in the fact that effective demand may increase, and real wages fall, in a situation in which the Trade Unions are both able and willing to prevent a fall in money wages, or even to procure a rise. The connection between movements in money wages and movements in real wages is largely accidental. There is a certain level of employment, determined by the general strategical position of the Trade Unions, at which money wages rise, and at that level of employment there is a certain level of real wages, determined by the technical conditions of production and the degree of monopoly. In demanding a rise of money wages the Trade Unions are

[1] Our formal scheme, in terms of the critical levels of employment, involves a high degree of simplification, for the movement in wages will not only depend upon the absolute level of employment but also upon recent changes in it. It is reasonable to say, however, that the upper critical level is such that, so long as employment stands appreciably above it, a small fall in employment will give only a temporary check to the rise in wages, and that when employment has continued for some time at its reduced level the tendency for rising money wages will resume its force.

not taking a view upon how much unemployment they want to have, but merely seizing advantage of the fact that unemployment is low. The paradox of Trade Union policy only appears when we regard the Trade Unions as thinking in terms of the real wage corresponding to a given level of unemployment, instead of regarding movements in the cost of living as merely one element in their bar-gaining position. The economists have created a puzzle for themselves by inventing the answer of the Trade Unions to a question which they do not ask.[1]

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ν Under conditions of perfect competition with no labour organisation and perfect mobility, there is no difficulty in defining full employment. In these conditions the two critical levels coincide at the point of full employment. So long as any unemployment exists money wages are falling, and when full employment is reached they rise abruptly.ν The movement of money wages then serves to indicate the existence of unemployment. But when workers are prevented, even by tacit agreement, from under-bidding each other for jobs this criterion fails.

It would, indeed, be permissible, from one point of view, to say that there is no 'involuntary' unemployment as long as unemployed individuals are not so anxious to find work that they are prepared to offer themselves at cut wage rates. But this use of terms would be extravagant. From a common-sense point of view it would be absurd to say that there was no involuntary unemployment in Great Britain in 1933 because at that date money wage rates were stable, or that there was no unemployment in coal mining in 1936 because a demand was then made for higher money wages. If the term 'involuntary unemploy-ment' is confined to the sense of a degree of unemployment

[1] A Trade Union policy conceived in terms of real wages is discussed below, p. 27.
[2] The conception of full employment where mobility is not perfect is discussed below, p. 41.

so severe as to break through the feeling of loyalty and the Trade Union regulations which forbid money wages to be cut, then some other term must be found to correspond to the common-sense notion of unemployment. But the term 'involuntary unemployment' is obviously suitable for the latter purpose, and it seems most satisfactory simply to say that the amount of involuntary unemployment is the amount of work which, in existing conditions, the population is willing but unable to perform. No absolutely precise measure of this quantity can be found, but for all practical purposes a common-sense definition will suffice. In this sense unemployment may exist even when money wages are rising.

Mr. Keynes describes the point of full employment in terms of the level of real wages. In his view, as effective demand increases and real wages fall, a point is reached at which the real wage rate is so low that workers refuse to supply labour at a lower rate. At this point the expansion of effective demand must come to an end, because beyond it labour refuses to go. This conception involves certain difficulties. On the one hand, the individual breadwinner without private means can never be in a position to refuse to work because real wages are too low to be worth the effort. He must earn what he can get or starve altogether. Even if he could retain his right to the dole after refusing a job at the ruling wage rate, he would find that the real dole had fallen as much as the real wage. On the other hand, a Trade Union will threaten to withdraw its labour, not when any particular level of real wages is reached, but whenever the general situation (in which the level of real wages is only one element) appears to offer a favourable opportunity for doing so.

It is true that pin-money girls may not be lured into the labour market by the offer of a wage that will buy less than so many pins, it is true that if workers are free to decide their hours of work they may refuse to work an additional hour unless the additional earnings seem worth the effort.

and it is true that the same individual may work with greater or less intensity in different circumstances. But there is little support to be gained from these facts for Mr. Keynes' point of view) For it is commonly found that hours become longer and the number of workers in a family greater as real wage rates fall.[1] In short the supply of labour from a given population is likely to have a negative, not a positive elasticity, in response to changes in real wages, up to the point at which the maximum limit of physical capacity is reached.) We may simplify our argument, without sacrificing any point of principle, if we postulate that the supply of labour has zero elasticity so long as real wages stand above the level at which physical efficiency is impaired by a low standard of life. In this case there is a certain stereotyped length and intensity of working day and a certain number of individuals who desire to have jobs.[2]

When all these individuals are in employment there is no longer anyone whose interest lies in refraining from asking for higher money wages when a further rise in prices takes place. The fear of blacklegs disappears, and the position of the Trade Unions is extremely strong. There is no need to postulate a critical psychological point at which the real wage ceases to cover the disutility of labour. It is true that as real wages fall the demand for

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[1] Cf. p. 120.

[2] If the supply of labour is not perfectly inelastic the amount of labour available to be employed varies with the rate of real wages. If the elasticity is negative the amount of available labour increases as the amount of employment increases and real wages fall. Full employment obtains when an increment of employment, if it were attained, would be associated with a fall in real wages insufficient to induce an equal increment in the available supply. When the elasticity is positive the available supply of labour falls as real wages fall, and, in a sense, unemployment decreases faster than employment increases. But these complications introduce no difference in principle from the simple case in which the elasticity of supply is zero. Cf. p. 132.

[3] The unsatisfactory nature of Mr. Keynes' psychological interpretation of full employment is clearly seen if, anticipating the argument of the next essay, we remove the assumption of perfect mobility and consider the case where full employment is reached for a particular grade of labour, for instance, master-plasterers during a building boom. When this occurs the money wages of that type of labour rise ahead of the general level and their real wages increase. The resistance which then arises

higher money wages is strengthened, and it is true that, as effective demand increases, the threat of a Trade Union to withdraw its labour becomes more powerful. But this is merely a matter of degree. The demand for higher money wages is made with growing success as employment increases and when full employment is reached it becomes overwhelmingly strong. The point of full employment is the point at which every impediment on the side of labour to a rise in money wages finally gives way.

Moreover, when full employment obtains, the attitude of employers to a rise in money wages is radically changed. In this connection it is necessary to distinguish between a state of affairs in which the level of effective demand happens to be exactly that which gives full employment, and a state of affairs in which effective demand is prevented from expanding only by the fact that full employment has already been reached. In the first case the demand for labour is exactly equal to the supply. In the second case there is a *scarcity of labour*, in the sense that the demand for labour at the ruling money wage rate exceeds the available supply. The extent of the scarcity may be measured, in a rough way, by the extent to which employment would have increased if the supply of labour were unlimited.

Now, when there is a scarcity of labour, employers themselves have an incentive to raise wages. On the assumption of perfect mobility, full employment will be reached in all trades at the same time, and when there is a scarcity of labour each employer will be in a situation in which he could increase his profits if he were able to secure more workers, even at a somewhat higher wage. But more workers are only to be had by tempting them away from other employers. A strong convention prevails that it is a dastardly act for one employer to lure away labour from

to a further expansion in the output of plastering clearly cannot be expressed in terms of disutility of labour. It arises simply from the fact that all the labour of that particular type is already in employment.

another by the offer of higher wages, and so long as this convention holds in full force the attitude of employers to a rise in wages is no different when there is full employment from their attitude when there is unemployment, but in the face of a considerable scarcity of labour the convention is likely to break down, and employers, each following the dictates of self-interest, will begin to bid up money wages. When labour is scarce not only are Trade Unions very powerful, but employers themselves throw their weight into the scale of rising wages. Conditions of full employment obtain when no one employer can increase his staff without reducing the staff of some other employer.

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It is clear that, when the point of full employment has been reached, something must occur to prevent employment from expanding any further, but it is not immediately obvious how this comes about. At first sight it appears that there is nothing to prevent, for instance, the rate of interest from being set so low, or inventions from occurring so fast, that the appropriate amount of employment lies beyond the limit set by the available supply of labour.

There is no corresponding problem in connection with the limit set by capital equipment. For if equipment is limited, prices rise faster than money wages as output expands, and real profits increase as real wages fall. Saving from profit incomes exceeds saving from wage incomes: thus, as output expands, the ratio of saving to consumption increases, and it will increase faster the more inelastic is the supply of output from given equipment. In the limit, if no increase in the output of consumption goods is technically possible, prices (and consequently profits) will rise to whatever point is necessary to prevent consumption from increasing.[1] But when the limit is set

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[1] There appears to be no warrant for Mr. Hicks' view (*Economic Journal*, June 1936, p. 247) that an indefinitely great rise of prices will develop in a state where capacity

by labour, instead of by equipment, this check upon the expansion of effective demand does not operate.

If employers are in a position to maintain the convention against raising money wages, the situation is very similar to that in which output is limited by the capacity of plant. In this case, if, for instance, the inducement to invest is increased when full employment already obtains, output is held in check merely by the impossibility of finding additional workers. The price of capital goods rises, but their cost is unchanged. An increased monopsony profit therefore falls to the investment entrepreneurs.[1] If part of this profit is spent, prices of consumption goods also rise above their cost, and the rise of prices, for all goods, will proceed to the point at which increased saving out of profits is equal to the increased value of the constant output of capital goods. In short, the increased inducement to invest automatically brings about a reduction ·in the propensity to consume, due to increased maldistribution of income, which keeps the total demand for labour unchanged. But when Trade Unions are strong, and when self-interest breaks through the class loyalty of employers, this check upon output also fails to act.

ₜ It is therefore necessary to inquire what mechanism there is, in the general case, which prevents the economic system from overshooting the point of full employment. To illustrate this problem let us suppose that, when full employment already obtains, the rate of interest is reduced and is maintained continuously at the lower level. Our discussion will be confined to the simplified case in which there is perfect mobility of labour and no element of monopsony in the labour market.

is limited but available labour unemployed. It is true, as Mr. Hicks says, that when effective demand increases and the supply of money is constant, the rate of interest will rise if the supply of consumption goods is less than perfectly elastic, so that prices rise. But it will rise even if supply is perfectly elastic and prices are constant.

[1] Similarly, when special rates are paid for overtime, monopsony profit increases. For the marginal net productivity of labour is at least equal to the overtime rate, and is consequently greater than the average wage rate (cf. *Economics of Imperfect Competition*, p. 301).

(The reduction in the rate of interest raises the price of capital goods, and under the incentive of increased profits a demand for labour is set up in the capital-good indus-tries,[1] but every available man is already employed. This must lead immediately to a rise in money wages in the industries engaged upon capital goods.[2] Expenditure from these wages increases the money demand for consumption goods, but in consumption-good industries also full em-ployment already obtains. An equal rise in money wages in the consumption-good industries is necessary to prevent a transfer of labour into the capital-good industries. Each individual employer in the consumption-good industries finds that the demand for his product is increased, and is reluctant to lose labour. The rise in money wages there-fore communicates itself to all industries.)

The manner in which the situation develops will depend, first, upon the way in which the change in wages is com-municated from industry to industry, and second, upon the way in which the expectations of entrepreneurs adapt themselves to the changes in wages. Let us assume for the moment that the changes in wages are instantaneous, so that a rise in wages in the capital-good industries is transmitted to the consumption-good industries without any actual transfer of labour between the two groups. In this case no increase in investment, reckoned in wage units, can take place.

The expectations of entrepreneurs may be divided into two types: expectations as to the future course of money

[1] To avoid unnecessary complexities it is convenient to assume that the change in the rate of interest has no reaction upon the amount which individuals desire to save out of a given income. When this assumption is not fulfilled the demand for labour in consumption industries also will be altered.

[2] A clear-cut distinction between capital-good industries and consumption-good industries is not found in reality. Any industry is engaged in investment in so far as its current output is not currently consumed, and goods partake of the nature of capital goods to the extent that their price is affected directly by a change in the rate of interest. In this respect all goods can be arranged in a continuous series. But for verbal simplicity it is convenient to talk as though industries could be divided into two self-contained groups. The fact that the two groups are not completely self-contained makes no difference of principle to the argument.

wages, and expectations as to the effect of a given change in money wages upon future prices. Let us first suppose that entrepreneurs always expect that to-day's wage rates will remain in force in the future, and consider the effect of expectations of the second type.

As soon as a rise in money wages occurs the entrepreneurs engaged upon the production of capital goods find that their costs have risen, and the incentive to invest thereby tends to be reduced. But the prices of the commodities which the capital goods are designed to produce have risen in the same proportion. Thus, if entrepreneurs adjust their expectations of the future earnings of capital goods instantaneously to the change in wages the marginal efficiency of capital is unaffected and remains the same as it was before the rate of interest fell. Thus there is no possibility of the marginal efficiency of capital being reduced to equality with the rate of interest, either by an increase in the rate of investment (reckoned in wage units) or by a rise in cost of capital goods relatively to their expected earnings, and no equilibrium is possible. ✓

But it is natural to suppose that entrepreneurs react more quickly to a rise in the cost of capital goods than to the change in prospective earnings due to a rise in the price of consumption goods, for the change in cost presents itself to them more immediately. A speculative builder becomes aware of a rise in the cost of building more rapidly than of a rise in house rents, even though the two proceed at the same rate. An all-round rise in money wages will thus reduce the marginal efficiency of capital for a certain time after it has taken place, the length of time depending upon the rate of adjustment of expectations. If the pace of adjustment is given there is one rate of rise in wages which will preserve equality between the marginal efficiency of capital and the reduced rate of interest. But if, at any moment, the marginal efficiency of capital is greater than the rate of interest, the competition of entrepreneurs for labour must at that moment be driving

money wages upwards. Thus, the rate at which money wages rise will necessarily be whatever is required to maintain equality between the marginal efficiency of capital and the rate of interest. The more rapidly are the expectations of entrepreneurs revised the more rapid will be the rise in money wages. Expectations will be revised more rapidly as experience teaches the entrepreneurs that a rise in costs in their own industries is accompanied by a rise in prices in others. Thus the rate of rise in money wages will accelerate as time goes by. In the limit, as we have seen, if expectations are revised instantaneously money wages must rise indefinitely fast.

[We have so far considered expectations in the minds of investment entrepreneurs as to the effect of a rise in wages, which has already occurred, upon the future prices of consumption goods. We must now consider expectations about the future course of wages themselves. It is possible that the rise in money wages may set up an expectation that they will fall again in the future. Such an expectation would partially or completely offset the effect upon the inducement to invest of the initial reduction in the rate of interest. Thus an expectation that wages will fall in the future retards their rise in the present. But since there is nothing in the situation actually to bring about a fall in wages the expectation of a fall will weaken as time goes by, and as the inducement to invest recovers the competition for labour will once more set in. Experience will soon teach the entrepreneurs that when labour is scarce a rise in wages is likely to lead to a further rise, and when their education has reached this point each rise in wages will enhance the inducement to invest and so precipitate a further rise. Thus there is an additional reason to expect that the upward movement will be slow at first but continuously accelerating.

On the assumption that changes in money wages are communicated instantaneously from industry to industry, equilibrium is preserved, with rising wages and prices,

at the point of full employment, and the rate of investment (reckoned in wage units) does not increase when the rate of interest falls. If wages are not adjusted instantaneously there may be some transfer of labour between industries. Let us suppose that wage bargains can only be altered by discrete steps and at discrete intervals of time. When the rate of interest falls the inducement to invest is increased and employers in the capital-good industries offer a rise in wages in order to attract more labour. The employers in consumption-good industries may be supposed to lag behind, and for one bargaining period they must submit to losing part of their labour force to the investment industries. Investment reckoned in wage units will therefore increase. The additional investment incomes will be partly spent upon a now diminished supply of consumption goods, and profits will rise to the point at which there is an addition to saving equal to the addition to investment. But the original rate of output of consumption goods was in equilibrium with the original rate of investment. Now investment has increased and the profitability of the original output of consumption goods has been raised. Entrepreneurs producing consumption goods are therefore under an incentive to attract back into their industries the labour that they have recently lost. If they succeeded in attracting it back again investment would fall off, and the surplus profits due to a scarcity of consumption goods would disappear. But now investment would have been forced back below the level at which the marginal efficiency of capital is equal to the reduced rate of interest, and the investment entrepreneurs would once more endeavour to tempt labour away from the consumption entrepreneurs. Thus we may either imagine that there is a perpetual tug-of-war between the two groups, each suffering a contraction when the other succeeds in expanding,[1] or we may

[1] This analysis bears a superficial resemblance to that of Professor Hayek (*Prices and Production*, Lecture III). But his attempt to discuss the course of the trade cycle upon the assumption of full employment leads to many difficulties, and it appears impossible to find any genuine point of contact between his argument and the above.

suppose that the investment entrepreneurs, after snatching an initial advantage, retain it by keeping the wages that they offer always a little ahead of those offered in the consumption-good industries. In either case a continuous rise in money wages must occur, each successive bargaining period leading to an increase in the bids of the rival industries for labour.

We have so far ignored the effect of contracts fixed in terms of money. As money wages and prices rise the purchasing power of incomes fixed in terms of money is continuously reduced, and real profits are swollen to a corresponding extent. If the expenditure of entrepreneurs is increased by less than the expenditure of rentiers is reduced, some labour will be released from the consumption trades and can be absorbed in the investment trades.[1] Moreover the labour supply may be augmented by rentiers who are forced to start earning to supplement their vanishing real income. It is conceivable that the labour made available in these ways might be sufficient to meet the increase in demand in the capital-good industries set up by the initial fall in the rate of interest. In that case the level of money wages would come to rest after a certain point. In other words the rise in money wages may reduce the propensity to consume of the community, and may increase the amount of labour corresponding to full employment, and this may occur to a sufficient extent to allow such an increase in investment (reckoned in wage units) as will reduce the marginal efficiency of capital to equality with the rate of interest, even if money wages become constant. Against this possibility must be set the fact that after prices have been rising for a certain time an expectation is likely to be set up that they will rise further in the future. This, as we have already seen, will further enhance the inducement to invest, since it will lead to a rise in the present price of all durable goods over and

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[1] It is this phenomenon which provides the most precise meaning which can be attached to the much abused phrase 'forced saving'; cf. *General Theory*, p. 80.

above the rise initially caused by the fall in the rate of interest. But it will also have the effect of reducing the incentive to save, since the amount of consumption, sacrificed in the present by an act of saving, is greater than the amount of purchasing power made available by it in the future. The purchasing power of money over perishable goods is expected to fall in the future, and purchasing power over durable goods has fallen in the present.[1] Thus it is far more likely that, on balance, the propensity to consume will be increased than that it will be diminished. In so far as it is increased the competition for labour of the consumption trades becomes hotter and the pace of the rise in money wages all the more violent.

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Our analysis has been conducted upon the unreal assumption of perfect mobility of labour between trades and localities, but it is clear that the main conclusion, that conditions of scarcity of labour are calculated to lead to a rapid and accelerating rise in money wages, is likely to hold good on more realisitic assumptions. The general upshot of our argument is that the point of full employment, so far from being an equilibrium resting place, appears to be a precipice over which, once it has reached the edge, the value of money must plunge into a bottomless abyss. But our discussion has been based upon the assumption that the initial cause of an increase in effective demand retains its force when money wages rise. This assumption must now be revised.

A rise in prices and incomes leads to an increase in requirements for money balances in the active circulation. This tends to reduce the amount available for inactive balances and so causes the rate of interest to rise.[2] The case which we have been considering, for the sake of illustration, in which a reduction in the rate of interest is maintained

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[1] In short, the 'real' rate of interest has fallen.   [2] See *General Theory*, p. 171.

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in the face of a considerable rise in money wages is not a case which can normally occur. Before the value of money has bounced more than once or twice against the wall of the cliff as it falls, a rise in the rate of interest draws taut the rope that holds it and brings it to rest. The rise in interest checks investment and continues to the point at which sufficient unemployment occurs to prevent a further rise in wages. Most often the movement of wages is reversed by the reaction, and the laborious task of hauling the value of money up again begins to be carried out. The rope which holds the value of money is a limitation on its supply. This may be due to natural causes (as in a primitive metallic system), to legal restrictions, or to the deliberate policy of the monetary authorities.

This safeguard acts even in a closed system. In an open system it is reinforced by the effect of rising money wages upon the balance of trade. A rise in wages in any one country will weaken its international competitive position, lead to a decline in exports and increase in imports and so tend to cause unemployment. The release of labour from the industries producing tradeable goods will have a direct effect in checking the rise in money wages, and the decline in the balance of trade will have an indirect effect, by raising the home rate of interest.[1] If the monetary authorities refuse to allow the exchange rate to depreciate, this rise in the rate of interest will be pushed to the point at which sufficient unemployment is caused to bring the rise in money wages to an end. Thus, in an open system, even the gradual rise in money wages which occurs before full employment is reached is held under strong restraint, unless the movement is world-wide.

But even if the monetary authorities are not actuated by the necessity of preserving stable exchanges they have strong motives to prevent an immoderate rise of prices, and legal restrictions upon the supply of money are primarily designed to force them to do so. Moreover, a

lively sense óf the horrors of inflation is sucked up with the milk of the mothers of bank presidents, and, indeed, the process of checking a rise in money wages is usually set to work long before the point of full employment is actually reached.[1] In the imagination of monetary reformers the ideal banking system controls its policy in such a way as to avoid unemployment. But in reality the first duty of banking authorities imposed upon them alike by law, tradition, and sentiment, is to prevent full employment from being attained. And in the normal course they carry out their duty with devotion and success.

It appears, then, that in normal circumstances the danger of a complete collapse in the value of money is not greatly to be feared, even when the level of unemployment is low. First of all, the reaction upon expectations will usually ensure that a rise in wages is at first very slow. Thus a chance increase in the quantity of money, or in the marginal efficiency of capital, which is reversed soon after it has occurred, will not precipitate an inflationary situation. There is sufficient stability in the system to prevent it from being pushed over the precipice at a touch. Second, a persistent impulse to an increase in effective demand, even if it is strong enough to carry the system to full employment, will be reversed before it has gone very far by a rise in the rate of interest.

These safeguards are normally strong, but on certain notable occasions in history they have failed to act. When a movement towards full employment occurs in a situation in which the government cannot balance its budget,

[1] When a precipitate rise in prices is once under way the task of the banking system is likely to be rendered more difficult by a violent fall in liquidity preference. When the expectation has once taken root that the purchasing power of money is likely to fall in the future every holder of money has a powerful motive to get rid of it, and in order to ensure a rise in the rate of interest the stock of money, measured in wage units, must be reduced much below its former amount. Moreover, once the expectation of a future rise in prices has increased the propensity to consume and raised the marginal efficiency of capital, the rise in the rate of interest which will be adequate to check investment and cause unemployment is very much increased. It is for this reason that it is easier to nip inflation in the bud than to fell the beanstalk once it has begun to grow.

then the rope snaps which holds the value of money, and the banking authorities can only gaze helpless over the edge of the abyss.

The movement towards full employment may itself be due to a heavy budgetary deficit, which leads to an increase in effective demand. Or it may be associated with a collapse in the exchange rate due to external causes. A violent fall in the foreign exchange may lead to an increase in home employment and set up, for this reason, a tendency for money wages to rise. But it has also a more direct effect. \The sudden rise in the price of imported goods will be followed by a rise in home prices and the cost of living will be violently increased. Even apart from an increase in employment this is likely to lead to a demand for higher money wages, for the cost of living is a powerful influence, though not the only influence, upon Trade Union policy.[1] A collapse of the exchange creates budgetary difficulties where there are government obligations fixed in terms of foreign currencies. The deficit may itself shake foreign confidence and cause the collapse of the exchange. Or a common cause, such as war-time activity, may be producing both a deficit and full employment. Thus it is no mere coincidence that a movement towards full employment, on several occasions, has occurred in conjunction with a heavy budget deficit.

The existence of the deficit robs the monetary authorities of their power. The government may be financing itself by borrowing from the public, and, if so, they will not countenance a determined effort to keep the rate of interest high. But more often, in such cases, they are driven to borrow from the central bank itself. Thus, since central bank assets form the basis of credit, the authorities are

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[1] If the rise in prices is sufficiently severe the standard of life will fall (unless money wages are raised faster than the exchange collapses) to the point at which physical efficiency is impaired. A reduction in the number of unemployed workers will then take place even if there is no increase in effective demand, for each employer, to maintain his output, will have to employ more men to make up for the reduction in output per man. This will reinforce the tendency for money wages to rise, and may even lead to conditions of full employment. Cf. p. 133.

compelled willy-nilly to increase the supply of money,[1] and the rope frays and snaps in their hands.[2]

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The foregoing discussion suggests some reflections upon the ideal policy for monetary authorities to pursue. Obstacles, perhaps insuperable, to the control of employment and prices are presented by the fact that a régime of private enterprise is subject to violent oscillations of sentiment, which must be counteracted by public policy if the system is to run smoothly.[3] A discussion of these obstacles lies outside the sphere of our present inquiry, but there are other problems which it may be useful to discuss, even upon the unrealistic assumption that these obstacles do not exist. ᗉWe will consider, therefore, a community within which manipulation of the rate of interest, supplemented by public-works policy, is adequate to control the level of investment and consequently of employment. ᕽ

Let us first suppose that the object of policy is to maintain a high level of employment. In the real world, in which labour is not perfectly mobile between trades and localities, absolutely full employment will normally be unobtainable.[5] And even if full employment were attainable, it would create, as we have seen, acute instability of prices, a slight miscalculation in the forward direction leading to a rapid and accelerating rise in money wages. Our authorities must therefore be presumed to leave some

[1] The popular view that a budget deficit is the cause of inflation can therefore be justified. But it is unfortunate that this well-founded belief should have been so commonly extended into the opinion that any public policy calculated to reduce unemployment is 'inflationary' and should be avoided with care.

[2] The most notorious of all inflations is not exactly fitted by this account, for the Reichsbank in 1921 was acting upon a policy of 'meeting the needs of trade' and did not attempt to limit the supply of money. The bank itself cut the rope. But even if it had not done so, friction on the edge of the precipice would soon have worn it through.

[3] *General Theory*, p. 320.

[4] If a position is reached in which a level of investment adequate to promote the desired level of employment is unattainable, it may be postulated that measures will be taken calculated to increase the propensity to consume.

[5] See below, p. 42.

margin of safety and to aim at a level of employment somewhat short of full.[1]

If Trade Unions are powerful this will entail that employment lies above the upper critical level, at which money wages rise, and, supposing our authorities to obtain their objective, prices will move constantly upwards, though not in the violent manner characteristic of a very close approximation to full employment. \The policy of maintaining a high level of employment will therefore entail a cumulative increase in the quantity of money, at whatever pace is sufficient to maintain the rate of interest at the required level. If this policy is followed in one country only, it will entail a cumulative fall in the foreign exchange rate. For a country largely dependent upon foreign trade changes in the outside world may, at frequent intervals, place the desired level of employment entirely outside the bounds of possibility. But the effects of a rising level of wages, in itself, can be offset by a corresponding depreciation of the exchange.[2]⟩

⟨The benefits of a high level of employment (supposing it to be within the power of our authorities to obtain them) can thus be secured at the expense of two evils, a constant depreciation of wealth and incomes fixed in terms of money, and the sacrifice of exchange stability.⟩ In so far as the pursuit of such a policy tends to set up an expectation of rising prices in the future, this will, on our assumption that movements of opinion never get out of hand, lighten the task of the authorities in maintaining a high level of employment, by increasing the propensity to consume and increasing the inducement to invest. But an expectation of a falling exchange rate in the future

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[1] A moderate amount of unemployment is not a very serious social evil so long as it is distributed very widely over the working population and so long as dole provisions are generous. It then amounts to an occasional enforced holiday on reduced pay, which may be a hardship for some individuals but will be almost welcomed by others.

[2] See below, p. 152. A movement in money wages is never likely to be so uniform in its effect, as between industries, as a movement in the exchange rate. Relative changes in employment and in real wages are therefore likely to result from this policy.

creates serious difficulties, for it will set a premium upon foreign as opposed to home lending and so tend to drive up the home rate of interest.[1] Thus the policy of maintaining a high level of employment can be pursued in one country in isolation only if it is implemented by a high degree of control over foreign lending.[2]

(A more common objective of policy is stability of the exchanges. This requires that so long as money wages are rising the rate of interest must be continuously raised in order to redress the balance of payments. The level of employment will therefore be forced continuously downwards until the point is reached at which money wages cease to rise. The policy required for exchange stability is a level of unemployment sufficiently high to prevent money wages from rising. This is, in general, the basis of the policy actually pursued by monetary authorities under the régime of the gold standard.[3])

A third objective of policy, which has been much canvassed, is stability of the price level. This conception raises the question of what exactly is meant by the price level. Stability of prices can only mean stability of a particular index number, and when one index number is stable others will be altering. In so far as stability of the price level is regarded as desirable on grounds of social justice, this objection is no mere quibble, but cuts at the root of the whole idea. For the same policy which will ensure a stable real income for one set of individuals will cause fluctuations in the real income of others, who spend their

[1] See below, p. 148.

[2] The marked relative fall in the British rate of interest which has occurred since the gold standard was abandoned in 1931 only became possible after expectations of a further fall in the sterling exchange rate had disappeared. It was brought about partly by a certain degree of official control over foreign issues, and partly by a general political situation and uncertainty about the future course of world exchange rates, which strongly discouraged foreign lending. In stable conditions a mere embargo upon foreign issues would be insufficient to defend the home rate of interest against outside influences, for it would always be open to holders of home securities to transfer into foreign securities already in existence, or to lend at short term in foreign money markets.

[3] See below, p. 154, for a further discussion.

money on different commodities or on the same com-
modities in widely different proportions.[1] We will suppose,
however, that circumstances in our community are such
that this objection is unimportant and 'that an index
number can be chosen which gives reasonably consonant
results for all sections of the price level.

It is sometimes argued in favour of a policy designed to
stabilise prices that it will ensure stability of employment.
Now, it is true that a change in effective demand will lead
to a change in prices. But prices will also alter if either
efficiency or the level of money wages alters. (Stable
employment will be associated with stable prices only if
efficiency is constant and employment lies within the
neutral range, so that the level of money wages is constant.[2]
Any rise in money wages must be offset by a sufficient
reduction in effective demand to prevent prices from rising,[3]
and an increase in effective demand will only be permis-
sible if wages fall.)

(If efficiency is increasing as time goes by, whether because
of improvements in technique or merely because of the
gradual accumulation of capital, then, with constant
money wages, there is a tendency for prices to fall. Stability
of prices then requires that the level of employment shall
be held sufficiently high to induce just that rate of rise in
money wages which will offset the effects of increasing
efficiency, and the level of employment must be made to
fluctuate with the rate of industrial progress.)

[1] A *reductio ad absurdum* of the index number idea is provided by the use of the
Cost of Living Index, based on the consumption of a family with an income of 36s.
a week in 1904, to regulate the bonus payable to First Class Civil Servants.

[2] Cf. Harrod, *The Trade Cycle*, p. 117, where a similar argument is put forward.

[3] The unreality of arguments conducted in terms of the price level is here clearly
exposed. When a general rise in money wages occurs it is inconceivable that the
authorities should be able to engineer a reduction in effective demand calculated to
restore the price of each particular commodity to its former level and the judgment
as to what is a sufficient reduction in effective demand to restore the average of prices
will turn upon the index number which happens to be selected. The increase in
unemployment required to keep any given index number stable in face of a general
rise in wages will be greater the greater is the elasticity of supply of the commodities
entering into it. If the elasticities are high and the rise in wages large there may be no
decline in effective demand great enough to give the required result.

Thus a policy of maintaining stable prices (supposing that such a policy can be formulated in a practicable manner) is by no means equivalent to a policy of maintaining stable employment.) Moreover, in so far as employment is the criterion, it is a high rather than a stable level which is desirable. It can, indeed, be argued that a moderate level of employment is the best objective, since the attainment of a high level at one time may make a low level harder to avoid at another,[1] but this is a question which must be debated on its own merits. To introduce the criterion of stable prices is merely to confuse the issue.[2]

In so far as stable prices are regarded as desirable for their own sake, as contributing to social justice, it must be recognized that justice to the rentier can be achieved only by means of the injustice to the rest of the community of maintaining a lower level of effective demand than might otherwise be achieved. We are here presented with a conflict of interests which *a priori* reasoning can do nothing to resolve. It is a conflict of which modern communities, learning from experience rather than from the teaching of economists, are becoming increasingly aware, and actual policies are largely governed by the rival influences of the interests involved.

(A fourth criterion of policy might be found in promoting the best interests of wage earners. We are here presented with a fundamental dilemma. (An increase in employment in the short period will normally be accompanied by a fall in real wages, because, with fixed equipment, an increase in output is accompanied by a rise in prices more than in proportion to any rise there may be in money wages.[3]

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[1] *General Theory*, p. 327.

[2] The policy, which is sometimes advocated, of maintaining a constant level of money incomes is even more deleterious to employment than a policy of maintaining prices stable. For it would require that employment should be kept below the upper critical level even when there is an increase in efficiency. To examine the effects of a policy of maintaining constant the 'effective quantity of money' (MV) would merely be to explore the confusions which result from an application to actual problems of an over-simplified Quantity Theory of Money.

[3] In an open system it is possible that an increase in employment may occur without causing a fall in real wages. For if, when home investment increases, money wages

Thus we are presented with a choice between more em-
ployment with lower real wages and less employment
with higher real wages.)

It is important to observe that it is not always the same
individuals who gain on the one tack and lose on the other.
When effective demand increases, a man who is perfectly
secure of his job feels only the loss from the fall in real
wages, while a man who was formerly out of work feels
only the gain from the increase in employment. We must
therefore strike a balance between the interests of various
groups of workers. If unemployment was shared equally
amongst all individuals there would be, in any given
circumstances, one level of employment at which the
annual real income (from wages when in work and from
the dole during spells of unemployment) of a representative
worker would be maximised, and this level of employment
might be regarded as the proper objective of a policy
designed in the interests of labour.) But, in fact, unemploy-
ment falls far more heavily upon some individuals than
upon others, and there is no one level of employment
which can be regarded as the most desirable for all of them.)

It is clear, however, that weight must be allowed, upon
some system or other, to a fall in real wages as against an
increase in employment. In general it may be said that
something appreciably short of full employment must be
regarded as the optimum. In some circumstances there
will be a fairly clear indication of the most advantageous
policy. (As employment increases from a low level the
corresponding fall in real wages will at first be very slight,
but after a certain point approximately full capacity will

rise and the exchange is held constant, the purchasing power of the wage earner
over imports may be increased to an extent sufficient to offset the diminution in pur-
chasing power over home produced goods. But, if a rise in money wages is not offset
by a fall in the exchange rate, not only will the proportion of secondary employment
falling abroad be increased, but the home rate of interest will have to be raised. The
increase in home employment which it is possible to engineer in these circumstances
will at best be extremely limited. (Cf. Kahn, 'The Relation of Home Investment to
Unemployment,' *Economic Journal*, June 1931, p. 175.) For the effect of an increase
in employment brought about by means of an increase in the foreign balance see
below, p. 161.

be reached in a number of industries and a further in
in employment will lead to a rapid rise in prices and
in real wages.[1] In such circumstances it would be reason-
able to aim at a level of employment just short of the point
at which a sharp fall in real wages sets in.) Where no such
clear indication exists, and in particular, in an open system,
where the influence of the external position is important,
our policy can only be based upon a rough and indecisive
balance of contradictory considerations.

This argument applies to a strictly short-period point of
view. It is also necessary to balance the present against
the future. (A high level of investment, though it may lead
to a low level of real wages in the present, is calculated to
produce a rising level of real wages in the future.) Thus
long-period considerations tell in favour of a higher level
of employment than that indicated by the immediate
effect upon real wages, and from a long-period point of
view the dilemma presented by the choice of an optimum
level of employment is much less acute.[2])

The control of policy is, in a certain sense, divided
between the Trade Unions and the monetary authorities,
for, with given monetary conditions the level of the rate
of interest is largely determined by the level of money
wages. A sufficient rise in money wages will always lead
to a rise in the rate of interest and so check an increase in
employment.[3] Thus a combination of Trade Unions
sufficiently strong to control the level of money wages
would be faced with the problem of balancing a gain in
employment against a loss in real wages, and they might
be supposed to aim at establishing what appears to them
to be the optimum level of employment, taking account of

[1] Cf. p. 130.

[2] An increase in employment brought about purely by an increase in the propensity
to consume has of course no beneficial long-period reaction upon the level of real
wages.

[3] In arguing that a strong tendency for money wages to rise is in a sense inimical
to employment, it is important not to lose sight of the fact that the existence of strong
Trade Unions, by reducing monopsony, tends to promote a high level of employment.
Cf. p. 4, note.

the interests of employed and unemployed workers, and allowing weight to future as against present benefits. The two critical levels of employment at which wages alter would then coincide at the optimum level of employment and the optimum level would be endowed with all the characteristics of full employment.[1]) In practice, as we have argued, Trade Union policy is not conceived in these terms, and even if it is possible to distinguish, in reality, a clearly marked critical level of employment at which money wages rise, there is no reason to suppose that ·it corresponds to any definite conception of an optimum level of employment.

Moreover, Trade Union policy is only very loosely co-ordinated, and since the duty of each Union is to regard only the interests of its own members, gains and losses are very unevenly distributed between industries. Those Unions which are in the strongest position (either because of better organisation or because of a more favourable situation in their industries) will secure the greatest rise in money wages when an upward movement occurs, and so secure less than the average fall in real wages. And it is by no means necessarily the case that those Unions which gain the greatest real wages will suffer the largest share in un-employment. (Trade Union policy, as it works out in practice, cannot be reduced to terms of even an unconscious decision as to what is in the best interests of 'labour as a whole'.)

[1] If the Trade Unions acting in concert were to decide upon a certain minimum of real wages for employed workers, they would bring an increase in employment to an end when that minimum was reached. Mr. Keynes' psychological interpretation of full employment would then be the correct one, although the mechanism by which the limit was set to employment would be a rise in money wages, not a direct 'with-drawal of labour' (*General Theory*, p. 6). In stable conditions this policy would involve a gradual increase in employment as capital accumulations and improvements in technique raise the level of real wages corresponding to a given level of employment, a higher rate of real wages in the present being secured at the expense, not only of more unemployment in the present, but also of a slower rate of progress in the future.

MOBILITY OF LABOUR

I

It is sometimes maintained that the causes of unemployment can be divided into two distinct groups: factors which show themselves in a low level of effective demand, and frictions which prevent workers from moving from place to place or from trade to trade in search of employment. One part of unemployment, it is said, can be cured by increasing effective demand, while another part can be cured only by removing the frictions. But it is doubtful if this conception can be given any useful meaning, for the frictions and the movements of effective demand act and react upon each other and are inextricably bound up together.

On the one hand, the strength of the frictions largely depends upon the state of effective demand. When the general level of employment is high the frictions are weak. Labour will be moved more easily from declining industries or districts when other industries are expanding rapidly. A man will move house or learn a new trade with a better heart if he is certain of getting a job when he has done so. A man who has thrown up one job will find another more readily when the demand for labour is high. Employers will find it less easy to indulge in the luxury of a 'reserve of labour' when other firms are offering steady employment. There will be an incentive to dovetail occupations when workers are able to refuse to be lured into a seasonal trade. The man who is 'unemployable' in bad times will find, when labour is scarce, that his services are required after all. Thus the frictions will be more easily and more rapidly overcome the higher is the level of effective demand.

On the other hand, the frictions themselves modify the action of the influences which lead to changes in effective

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demand. The manner in which this occurs must bе examined at some length.

First of all, it is necessary to bear in mind the distinction between specialised plant or land and specialised labour. When plant or land is scarce relatively to the demand for it, profit and rent incomes in the industries concerned are raised relatively to wages, and thriftiness is consequently increased.[1] It is therefore obvious in what way immobility of these factors of production may exert a drag upon an increase in effective demand. But the ιinfluence of immobility of labour cannot be so easily accounted for.

Before proceeding with our argument we must inquire in what circumstances does the problem of immobility arise. When workers are reluctant to move, they form separate groups, each attached to a particular trade, and the proportions in which the supply of labour is divided between trades is determined by what has been the demand for labour of each type in the more or less recent past. If effective demand always moved up and down in the same well-worn channels, a supply of each type of labour would always be ready waiting to meet demand for it, when effective demand expanded, and the question of mobility would not arise. There would be no motive for workers to move, and their willingness to move could have no effect on employment. But actually tastes and techniques alter as time goes by, while different causes of expansion lead to demands for particular types of labour in different proportions—an expansion due to a fall in the rate of interest will stimulate a different selection of trades from those stimulated by an increase in the pro-pensity to consume. Therefore any given increase in effective demand is likely to reduce unemployment amongst some groups of workers much more than amongst others. This may react upon the level of effective demand in three chief ways.

First, it much enhances the importance of the type of

[1] See p. 10.

monopsony arising from an employer's convention against bidding up wages when the demand for labour exceeds the supply.[1] A scarcity of labour may be felt in particular trades long before unemployment has everywhere disappeared. Where the convention is strictly observed wages fail to rise, but the price of the commodity rises to the point at which the demand for it is equated to the limited supply. Profits per unit of output increase, and thriftiness consequently increases.[2] Thus increasing monopsony exerts a drag upon the increase in effective demand, similar to the drag exercised by scarcity of specialised plant.

We are here faced with a phenomenon which might, perhaps, be correctly described as 'frictional unemployment'. There are unfilled vacancies in some industries, while there are unemployed men vainly hoping to find work in others, and an increase in mobility, by making it possible for employers in the trade where labour is scarce to take on more workers at the ruling wage rate, would lead to a net increase in employment. But the removal of frictions, in this case, increases employment only because it lifts the brake of increasing thriftiness which monopsony applies to the wheel of effective demand.

Secondly, immobility of labour enhances the tendency for money wages to rise (in the absence of monopsony) when effective demand increases. Where labour is divided into distinct groups there will be a critical level of employment, within each group, at which money wages begin to rise, and this critical point is passed in some industries when effective demand expands while unemployment in other industries is still very great. Thus a rise in money wages is likely to set in at an earlier stage when labour is immobile than when it moves freely. A rise in money

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[1] See p. 11.

[2] If prices do not rise customers may be rationed by delay in meeting orders. The customers are then induced to save while waiting to spend, and an increase in thriftiness is brought about by a different route. *Thriftiness* is here used in the sense of the propensity to save of the community as a whole; see p. 44, note.

wages imposes a check on the expansion of effective demand, by forcing up the rate of interest and reducing the balance of trade. Moreover, a rise in wages which is not expected to last has a powerful effect in reducing the incentive to invest,[1] and it is likely that a rise in wages in particular industries, which occurs when the general level of unemployment is still considerable, will not be expected to last, since mobility is always greater in a longer run than in a shorter run. Thus we find once more that immobility constitutes an impediment to an expansion of effective demand.

Thirdly, the existence of immobility will cause an expansion of effective demand to be accompanied by a change in relative wage rates. If it should happen that labour of the types required by consumption-good industries is in general less plentiful than labour of the types required for investment, an increase in effective demand is likely to be accompanied by a relative rise in wages in consumption-good industries. This limits the consumption of those whose money incomes have not risen, including workers in the investment industries. At the same time the marginal efficiency of capital is raised, and investment stimulated.[2] Or, to look at the same thing in another way, a rise in the price of labour in the finishing trades stimulates the demand for its substitute—labour devoted to producing capital instruments. Such an arbitrary alteration in methods of production may be undesirable on general grounds, but so far as the immediate effect upon employment is concerned it is likely to be beneficial on balance.[3]

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[1] *General Theory*, p. 263.   [2] Cf. p. 13.

[3] Mr. Hicks (*Economic Journal*, June 1936, p. 245) suggests that the labour supply available for consumption-good industries will often be fully absorbed into employment while there is considerable unemployment in the investment industries. But he takes no account of the fact that a rise in relative money wages in the consumption trades raises the marginal efficiency of capital, and so tends to keep the high rate of investment alive, in spite of the rise in the rate of interest which may result from the rise in money wages in the consumption trades. If, *per impossibile*, the rate of interest was held constant when there was full employment in the consumption trades, the rise of money wages in the consumption trades would ultimately lead to full employ-

There is, however, more reason to expect that, on balance, wages in capital-good industries will be raised relatively to wages in consumption-good industries. If this occurs, the marginal efficiency of capital is lowered, and the inducement to invest is reduced. Against this, the consumption corresponding to a given level of employment in investment industries is increased. On balance, the unfavourable effect upon employment is likely to outweigh the favourable effect.

Lack of mobility into investment trades presents one of the most formidable obstacles to an increase in employment when an increase in effective demand tends to occur, and one of the most serious difficulties in the way of a policy designed to maintain a high level of employment in face of a tendency for effective demand to decline. If the capital-good industries cannot readily expand, manipulation of the rate of interest will be powerless to increase investment, and public works schemes will, beyond a certain point, merely lead to a decline in private investment. Co-operation on the part of Trade Unions might be conceived to prevent a rise of money wages from occurring until the whole of the labour available in a particular trade is absorbed into employment, but when this point is reached further expansion depends entirely upon new recruitment. A well-balanced policy of public works may lead to an increase in employment over a wide selection of capital-good industries, whereas concentration upon a few lines will check investment at a lower level, when the supply of one or two particular types of labour is fully employed. If no more labour can be had for investment, a further increase in employment in consumption-good industries can come about only if the propensity to consume is increased.

It is natural to expect that there should be a scarcity of labour in the capital-good industries relatively to the number which would have to be employed in order to secure all-round full employment, for, in the ordinary

course of the ups and downs of trade, employment in the capital-good industries must, in the nature of the case, fluctuate more than the average of employment,[1] and it is in the interests of the workers concerned to keep their numbers down to minimum rather than maximum requirements. They are likely to be most successful in doing so precisely in those skilled crafts for which substitutes are hardest to find. Moreover, even if Trade Union regulations are not framed with this object, workers will naturally avoid, as far as they are able to choose, those trades in which the chances of unemployment are most severe. Thus workers will prefer to attach themselves to the consumption-good industries, and the labour force of a country may fail to divide itself between industries in such proportions that full employment can ever be attained. The only solution for this problem appears to lie in some scheme by which the principal crafts in the investment trades should have attached to them a number of reservists, so that a man trained, say, as a bricklayer would normally look for employment in some other line, but would be prepared to assist the expansion of the building industry when an impulse towards increased investment took place.

We have now seen that immobility may obstruct the

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[1] The marginal propensity to consume is less than the average; the Multiplier is consequently less than the ratio of employment in the whole of industry to employment in the capital-good industries. Suppose that the Multiplier is 2, and that capital-good industries represent $\frac{1}{4}$ of the whole. Then a decline of 20 per cent. in investment will bring about a decline of only 4 per cent. in consumption-good industries. The observed fact that capital-good industries are the most fluctuating is sometimes accounted for in another way. A given proportionate change in the level of consumption, if it is expected to last, will lead for a time to a larger proportionate increase in the output of capital goods. Suppose that in the first position plant is exactly adapted to output, and that 10 per cent. of plant is renewed every year. An increase of 10 per cent. in consumption in the course of a year will require an addition to plant of the order of 10 per cent. of the existing stock, which entails an addition to the rate of output of capital goods of the order of 100 per cent. if the change in the stock of capital is made within a year. There is no conflict between these two explanations. The former deals with the effect of a primary change in investment upon consumption and the latter with the secondary reaction upon investment of the increase in consumption (cf. Harrod, *The Trade Cycle*, p. 53 *et seq.*) and the actual relative fluctuations in investment and consumption are the result of both influences acting together.

influences which cause effective demand to expand, by
allowing monopsony profits to increase, by causing the
general level of money wages to rise, or by causing a rela-
tive rise in wages in the capital-good industries. In a
certain sense, therefore, unemployment may be said to be
due to lack of mobility. But immobility in itself cannot be
regarded as a direct cause of unemployment. If we assume
that there is no monopsony, that the rate of interest is held
constant in face of rising money wages, that foreign trade
may be neglected, that entrepreneurs expect each week
that the present level of wages will continue to rule in the
future, and that on balance relative wages, as between
consumption- and capital-good industries, do not alter,
then we have assumed away all the channels through which
immobility can affect employment, and in such a state of
affairs no change in the degree of mobility would have any
effect upon the total level of employment. It is therefore
impossible to distinguish a part of unemployment which
can be attributed in any simple and direct way to the
existence of immobility alone.

2

We may now examine the question whether, when
mobility is low, unemployment can be caused by a change
in the relative demands for particular commodities, as
opposed to a fall in the general level of demand. The dis-
tinction between a change in relative demands, total
income remaining constant, and a change in the level
of effective demand, is a matter purely of analytical con-
venience and does not correspond exactly with any move-
ment that can occur in reality. On the one hand, a change
in effective demand will be accompanied by changes in
relative demands, for when the income of an individual
increases, the increment of his expenditure will not fall on
various commodities in the same proportions as the average
expenditure, and, when total income increases, the incomes

of individuals will increase in different proportions. On the other hand, a change in relative demands may itself constitute a change in the level of effective demand. When the taste for some commodities is increased at the expense of others, the distribution of income as between wages and profits, and therefore the thriftiness of the community, may be altered by the change. Moreover, a change in relative prices may react directly upon thriftiness. A fall in the relative price of motor cars may deflect expenditure to them from other commodities, but it may also cause them to be bought out of savings. A fall in the relative price of bread may release expenditure for other commodities, but it may also increase the margin of income devoted to saving. The attraction of expenditure, as opposed to saving, largely depends upon the composition of the bundles of commodities that can be bought for a given sum.

If we wish to distinguish a *purely* relative change in demand we must postulate that an increase in expenditure upon one commodity is exactly offset by a reduction in expenditure upon others, and that the increase in saving, due to increased incomes from the one, is exactly offset by reduced saving, due to diminished incomes from the others. The latter condition requires that the elasticities of supply of all the commodities are the same over the relevant range, and that the proportion of wages to profits is the same in all the industries, so that the shift in demand leads to no net change in profits, and that the recipients of profits are equally wealthy and have the same disposition towards saving in all industries, so that, when profits are unchanged on balance, saving out of profits is unaltered. Further, our condition requires that saving out of wages and dole provisions are everywhere alike, so that no change in thriftiness results from a redistribution of employment between industries; and that a change in real income, as between persons engaged in different industries, does not enhance or reduce the inequality of incomes sufficiently to

affect thriftiness. If these conditions are fulfilled, no net change in employment would result from the shift in demand. But it is unlikely that all these conditions should ever be satisfied, or that the effects of a failure of one condition should be exactly offset by the effects of an opposite failure in others. A purely relative change in demand is merely a convenient theoretical fiction.

In some circumstances these conditions will clearly fail to be fulfilled. For instance, when expenditure is transferred from an industry where real incomes are relatively low to where they are relatively high, thriftiness is increased. Thus a transfer of demand to the products of manufacture at the expense of the products of a peasant community is likely to reduce employment. Again, if there is a transfer of demand to a particular commodity whose supply is limited by the plant available to produce it, then profits will increase in the industry producing it by more than they decline in the industries from which demand is transferred, since the short-period elasticity of supply of a commodity is smaller the more closely capacity output is approached. The transfer of demand therefore causes an increase in the ratio of profits to wages for the country as a whole, and consequently increases thriftiness and causes unemployment. Similarly, if a limitation upon the supply of a particular commodity is set by the available labour, and the convention against raising wages is upheld, then a transfer of demand to this commodity will lead to an increase in monopsony profits, and so increase thriftiness and cause unemployment.

But there is no presumption that a rise in money wages in a particular industry, in itself, will affect employment in one direction rather than the other. Employment increases by less in the expanding industry if money wages rise, but in other industries it decreases by less, since relative prices in them are now lower, while the total of money incomes is higher, and if the conditions set out above are fulfilled the changes in activity in the two sets of industries

will exactly compensate each other. The level of employ
ment is then not directly affected by the rise in wages in
a particular industry. A rise in wages in the expanding
industry is more likely to occur the lower the degree of
mobility of labour, but, so far as the direct effect of changes
in relative wages is concerned, the degree of mobility does
not affect the probability that any given change in relative
demands will reduce employment.

The reaction of changes in relative demands upon
investment must also be considered. Any transfer of demand
between different commodities will set up a tendency for
investment to be made in equipment for the expanded
industries, and disinvestment in equipment for the con-
tracted industry. In general, investment takes place more
rapidly than disinvestment, since it is characteristic of
capital goods to require less time to construct than to
wear out. Thus the investment will take place at a higher
rate over a shorter time than the disinvestment. Employ-
ment will consequently increase at first, while the rate of
investment exceeds the rate of disinvestment, but disinvest-
ment will continue after the investment has come to an
end, and employment will then decline. Taking a suffi-
ciently long period into account the two effects may be
expected roughly to balance each other.

3

We may now consider the effects of a change in the
relative prosperity of different parts of the same country.
Let us suppose that there is an increase in investment
confined in the first instance to one centre, say Alpha,
which contains a representative sample of the population
and the industries of a country. As well as the immediate
increase in employment in investment industries, a large
part of the resulting secondary increase in employment
takes place inside Alpha, since expenditure on consump-
tion necessarily falls to a considerable extent upon locally

produced goods and services. The remainder is spread thinly over the other centres, who find their exports to Alpha increased and, since prices in Alpha are likely to rise, their imports from it diminished.[1]

The cost of living in Alpha has now risen and, if money wages are constant, real wages will have fallen. The inducement to labour to move is then altered. Relative real wages in Alpha are reduced, but the chance of getting a job in Alpha is greater than elsewhere. If workers were influenced only by relative real wages (other differences between centres, in conditions of work, general amenities and so forth, being unaltered) emigration from Alpha would take place. But the notion of an increase in employment in one centre leading to emigration from it is obviously absurd. It is natural to assume that workers are influenced almost entirely by the chance of finding a job, and that relative real wages exercise only a slight pull upon movements of labour. Thus even if real wages in Alpha have fallen immigration into Alpha may be expected to take place.

It is to be observed, however, that even a small amount of unemployment is a severe obstacle to mobility. Unemployment in Alpha may have fallen to 5 per cent when it is still 15 per cent in other centres, and any individual who moves to Alpha will improve his chances of finding a job. But with even 5 per cent of unemployment at home the Alphans will look askance at immigrants, and the uncertainty of finding a job will still be so great as to deter many individuals, particularly married men, for whom migration involves either moving house or incurring the expense of a double establishment, from taking the plunge. Thus immigration is likely to be on a relatively small scale so long as appreciable unemployment remains in Alpha, and to set in with a rush if unemployment falls very low.

[1] The manner in which Alpha's balance of trade is financed is discussed below, p. 149.

If money wages in Alpha rise, then a unit of labour in Alpha will purchase less of local goods and more of imported goods than before; therefore if imported goods play a sufficient part in wage earners' consumption, the level of real wages in Alpha may be regarded as greater hlan it was before the initial increase in employment took tpace.[1] Outside Alpha, the rise in price of imports from Alpha will lower the level of real wages, though the effect will be spread thinly over the whole country and will not be great in any one centre. A rise in relative real wages in Alpha will increase the incentive to immigration.

Immigration will lead to a further increase in the level of employment in Alpha. Unemployed workers must make some expenditure, and part of their expenditure will fall on local goods wherever they may be at the moment. Immigration will therefore lead to a further increase of effective demand in Alpha, and a reduction of effective demand in other centres. Even if it is the rule that the unemployed are supported by a levy on the inhabitants of the centre where they happen to be at any moment an influx of workers into a centre is likely to increase expenditure there, because it will cause a transfer to them of income from wealthier inhabitants of the centre.[2] In other centres both employment and unemployment will decline as the result of emigration, Moreover, if the alteration in the geographical distribution of the popula- tion is expected to be permanent, there will be a secondary inducement to increased investment in Alpha, particularly in house-building, accompanied by disinvestment in other centres. Thus any initial difference between the levels of activity in different centres will tend to become cumulative.

Let us now consider another aspect of the problem. Suppose that Alpha suffers from a relative decline in effective demand. Clearly if the fall in effective demand in

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[1] That is to say, the favourable effect upon the terms of trade of raising money wages may outbalance the tendency for increased home employment to lower real wages. Cf. p. 25, note, and p. 163.

[2] Cf. p. 47.

Alpha is accompanied by an increase in effective demand in other centres, then the extent of unemployment amongst Alpha workers will depend upon their willingness to migrate to the centres where prosperity has increased. Unemployment in Alpha is then rightly attributed to the 'difficulty of transfer' and the proper remedy, from Alpha's point of view, lies in schemes designed to increase mobility of labour.

But it may be that the increase in demand is confined to a remote centre, say Omega, to which emigration is out of the question. Alpha has become a depressed area, and low profits and unemployment in Alpha will continue until something happens to increase effective demand in Alpha sufficiently to compensate for the initial decline. The increase in prosperity in Omega is no manner of consolation to the inhabitants of Alpha, and the trouble, from Alpha's point of view, is something worse than the transfer problem.

At the same time, if the neighbouring centres of Beta and Gamma are prosperous, emigration to them will be of some assistance to the Alphans. And if a direct attack upon the problem by increasing investment in Alpha itself is difficult to bring about, an increase of investment in Beta and Gamma will be the next best thing.[1]

4

No precise meaning can be given to the notion of full employment for a system within which mobility of labour is imperfect, unless it is taken to imply a state of affairs in which there is complete full employment all round, that is to say, in which no available labour is unemployed in any district or in any occupation. It is commonly said

[1] The problem of the British export industries at the present time [1936] is partly the result of the general decline in effective demand, of which a large share has fallen to their lot. In so far as it is a special problem, it may be illustrated by the above argument if we read for Alpha, say, Lancashire, for Omega, the Far East, and for Beta and Gamma, the south of England.

that there is 'full' employment when the only unemploy-
ment which exists can be described as frictional.[1] But it is
impossible, as we have argued, to give precision to the
concept of specifically 'frictional' unemployment, because
it is impossible to make a hard-and-fast distinction between
unemployment which is due to frictions and unemploy-
ment which is due to a deficiency of effective demand.

So long as frictions are strong and demands are con-
stantly changing, absolute full employment, as we have
seen, is unlikely to be obtainable, for at any particular
moment full employment for all labour would involve a
demand for particular amounts of particular types of labour
in particular places, and, if precisely those types are not
available, some types will be fully employed while other
types are available but are not required. It seems prefer-
able to say that full employment, in a precise sense, can
never be attained so long as frictions exist, rather than to
use 'full employment' in an imprecise sense in which it
can be said to be attainable, such unemployment as remains
being vaguely attributed to frictions.

One of the most striking departures which Mr. Keynes
has made from traditional economic teaching is his demon-
stration that an increase in thriftiness will not, in general,
tend to increase the rate at which capital is accumulated—
except in so far as the effect of a decline in activity in
reducing the rate of interest outweighs its effect in
reducing the marginal efficiency of capital. The classical
doctrine, that an increase in thriftiness will lead to an
increase in accumulation equal to the increase in saving
that would take place if activity did not decline, is true
only if full employment is always maintained. If full

[1] Cf. *General Theory*, p. 6. Here Mr. Keynes is advancing objections to the attempt
to apply the classical system of analysis, which postulates that there is in some sense
full employment, to the real world, and in this context a definition of frictional un-
employment is necessary. If we believe that in reality employment tends towards a
particular level, then there must be in reality a particular level for employment to
tend towards. But if we regard full employment simply as the final upper limit
beyond which employment can never go, it is possible to recognise that approxima-
tions to it achieved in reality are merely a matter of degree.

employment is guaranteed, then, when thriftiness increases, a corresponding increase in investment must be brought about in order to fulfil the guarantee—that is to say, an adequate fall in the rate of interest must be enforced by the authorities, or brought about by a sufficient reduction in the level of money wages,[1] But if labour is immobile between industries it becomes impossible for the guarantee to be fulfilled. An increase in thriftiness releases from the consumption-good industries labour of particular types which is useless to the capital-good industries. An upper limit is set to investment by the labour already available to the investment-good industries, and it is impossible to induce the expansion in investment which would remove the unemployment that has been created by the increase in thriftiness. Moreover, since unemployment has now appeared in the consumption-good industries, wages in those industries are likely to fall. This fall in relative wages will strongly reinforce the effect of increased thriftiness in reducing the marginal efficiency of capital and considerably outweigh the beneficial reaction upon the rate of interest that accompanies it. Thus, when labour is immobile, the notion that a fall in money wages may be relied upon to stimulate investment when thriftiness increases is deprived of all plausibility, and intervention by the authorities is necessary to maintain even the pre-existing level of investment.

[1] In practice employment cannot move beyond certain wide limits. Unemployment cannot fall below zero, and cannot rise to a very high level, for, when it does, the situation becomes so intolerable that some action is taken to remedy it. Thus in respect to very large changes in thriftiness the postulates of the classical analysis are very roughly fulfilled. If we were to imagine a Nineteenth Century that had conducted itself according to the precepts of Mr. Keynes, so that thriftiness was actively discouraged, while full employment was always maintained, and contrast it with the Nineteenth Century which received the blessing of the classical economists, there can be little doubt that, although the level of employment would have been higher, the accumulation of capital would have been very much less, in Mr. Keynes' Nineteenth Century than in the Nineteenth Century which actually came to pass.

CERTAIN PROPOSED REMEDIES FOR UNEMPLOYMENT

In a community with given resources and methods of production the amount of output can only be increased by means of an increase in the rate of investment or of a reduction in the propensity to save,[1] and any scheme which is suggested as a method of increasing employment must be examined in the light of its effect upon these influences. Many schemes have been suggested in recent years. A theoretical examination is here made of four of them: (1) a compulsory reduction in the length of the working day, (2) a rise in the school leaving age, (3) emigration, (4) a subsidy to wages.

Each of these schemes has been suggested as a remedy for unemployment from the point of view of a closed system, and the effect of the schemes upon foreign trade may be neglected in our present inquiry.[2] Further, the schemes will be treated as though they affected all industries within the country in the same way. This is a severe simplification of the actual problem. Obviously the effect upon a particular industry of a compulsory limitation of hours to a certain maximum will vary according to the difference which is made to its actual hours by the change, according to the shift system which it was formerly using, and according to other technical conditions. A rise in the school leaving age will have a greater effect upon retail trading than upon the production of iron and steel.

[1] The propensity to save or *thriftiness* of the community represents the relationship between the level of total real income and the rate of saving in real terms. It embodies exactly the same relationship as Mr. Keynes' 'propensity to consume' (*General Theory*, p. 90).

[2] We shall find that some of the schemes which we have to discuss are calculated to raise money costs of production in the country which introduces them, and so to reduce its foreign balance. Others, by lowering home prices, are calculated to increase it. In any actual case reactions upon the foreign balance would be of the utmost importance in assessing the merits of the schemes.

The introduction of either scheme would affect the costs of various commodities relatively to each other, and some change in net employment might result from the alteration in the relative positions of different industries. But it is legitimate to ignore these considerations in a theoretical examination of the proposed schemes, since their merits are not regarded as in any way depending on relative changes. It is also legitimate to assume that the schemes are faithfully carried out, so that an industry with unscrupulous employers and weak Trade Union organisation cannot steal a march upon law-abiding rivals, and that each scheme, when it is introduced, is expected to be permanent. Finally, it will be assumed that any monetary repercussions of the schemes, are offset by appropriate action by the banking system and that the rate of interest is unaffected by them, for if the object in view were merely to produce an effect on employment by changing the rate of interest, simpler methods could be used. These qualifications may be, of course, of great practical importance in any particular case. The justification for introducing them lies in the fact that these qualifications leave intact the premises upon which the simple arguments in favour of the schemes have been based. If advocates of the schemes fall back upon more sophisticated arguments which these qualifications would exclude, then the case must be re-examined accordingly.

I

The scheme for a compulsory reduction in hours of work has been proposed in two forms, with a constant hourly or piece rate of money wages, and with constant weekly money earnings. These two proposals appear at first sight to be very different, but from the point of view of our present inquiry the difference is less than might be supposed. For we have ruled out of account both changes in the foreign balance and changes in the rate of interest, which represent the most important influences exerted

by a change in money wages upon the level of employment. It may be further assumed that entrepreneurs (including shareholders) and rentiers are alike in their saving propensities, so that the redistributional effects of a change in the value of money have no reaction upon thriftiness,[1] and that, since the change in wages is expected to be permanent, the marginal efficiency of capital is unaffected.[2] It follows that, in the case that we have to consider, a change in money wages, in itself, produces no effect upon employment or upon real wages.[3] Thus, for the purpose of our present inquiry, it makes no difference whether the reduction in hours is accompanied by a rise in money wages per hour or not. We may therefore confine our argument to the case in which hourly wages are unaltered.

A reduction in the length of the working day is likely to lead to some increase in hourly output, because of the reduced fatigue of workers; on the other hand some operations, such as cleaning or warming up the plant, or walking from the shaft to the coal face, have to be undertaken in respect to each day's output, no matter what the length of the day. Thus, with constant hourly wages, labour cost per unit of output may on balance be either increased or diminished. If it is diminished, prices will fall and real wages per hour will increase, while the increase in numbers required to produce a given output will be less than in proportion to the reduction in hours; and conversely if labour cost is raised. In any case there must be some increase in the number of workers employed to produce a given output.[4] From this an important consequence follows.

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[1] *General Theory*, p. 262.   [2] *Ibid.*, p. 263.

[3] It is also necessary to assume that the new legislation does not alter the bargaining position of workers *vis-à-vis* employers, so that the degree of exploitation is unaffected.

[4] It is well known that employers may be so foolish as to set the working day at a length greater than that which gives the maximum daily output per man. In such a case a reduction of hours is in the interests both of employers and of employed workers, and ought to be made on its own merits. In discussing a proposed remedy for unemployment it is natural to take our departure from a situation in which a reduction in hours will lead to a reduction in daily output per man.

The number of workers who are unemployed, when a given output is being produced, is reduced by the reduction in hours and consequently relief payments are reduced. The dole (which may be taken to stand for all expenditure by the unemployed) may be financed out of borrowing by the authorities, out of dis-saving by the unemployed, out of charity or out of taxes. In so far as it comes from charity or from taxation, a reduction in dole payments may lead to an increase in expenditure by charitable persons or taxpayers, but it is natural to suppose that out of the total increase in the net income of these persons a part is devoted to saving. And in so far as the dole is financed by borrowing, a reduction in dole payments will reduce dis-saving by the state. Thus a reduction in hours, by reducing the amount of dole payments corresponding to a given output, brings about an increase in thriftiness. The magnitude of the effect will vary with the manner in which provision is made for dole payments, but the direction of the effect will be the same in each case. In discussing this and the following schemes we will treat a reduction in the amount of dole payments corresponding to a given level of output as constituting an increase in thriftiness, without pausing to inquire in each case how the dole is provided for.[1] ✓

It can now be seen, assuming for the moment that investment is constant, that the reduction in hours must lead to a decline in output. For if output were constant total saving would be increased. Therefore if output were constant consumption would decline. It follows that output cannot be constant, but must decline.[2] The effect of

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[1] Against the reduction in dole payments must be set the fact that the workers formerly employed suffer a decline in daily real earnings, when hours are reduced, which may decrease their savings by more than the savings of newly employed workers are increased. This effect, however, is likely to be slight compared to the increase in saving due to the reduction in dole payments, and it will be left out of account both in discussing this scheme and the others which follow.

[2] If investment is constant, output must fall to the point at which, with the increased propensity to save, the total of saving is no greater than before. In the limiting case, where no decline in saving accompanies a decline in output except that due to increased dole payments, the total of dole payments cannot alter. The number of men

the shortening of hours is therefore to reduce the total of employment (measured in man-hours) while increasing the number of workers employed.

We must now consider the reaction of the scheme on the rate of investment. A reduction in consumption has, in itself, a tendency to reduce investment, for the capital equipment required by a lower level of output is less than for a higher level. On the other hand, a reduction of working hours, unless it is accompanied by an increase in the number of shifts per day, reduces the effective amount of capital. The hours of work of a machine are limited by the hours of labour, and a machine working for six hours a day represents a smaller amount of productive capacity than the same machine working for eight hours. A given output would therefore require more equipment after a reduction of hours, and the marginal efficiency of capital would be raised by the change.[1] This tends to bring about an increase in investment (or reduction in the rate at which plant is being allowed to fall into decay). This increase in investment is of the same nature as that which can be induced by setting fire to a number of factories, or any such method of reducing the stock of capital.

According as investment, on balance, is increased or reduced, the effects of increased thriftiness are mitigated or enhanced. But changes in the rate of investment, in either direction, will persist only for a certain time, for there will be a certain adjustment of the stock of capital which it is appropriate to make, and when it has been made the effect of the change in hours upon investment

unemployed cannot then be reduced, and the total of man-hours of employment must be reduced in the same proportion as hours per man. Normally saving falls off with output for other reasons besides the increase in dole payments (*General Theory*, p. 251), and some reduction in the number of men unemployed must therefore occur.

[1] A reduction in hours of work also increases the cost of equipment per unit of output, and this effect tells in the opposite direction. If the elasticity of substitution between capital and labour was sufficiently great there would be a reduction in the amount of equipment employed to produce a given output and consequently a reduction in the inducement to invest. But in general the effect of the reduced quantity of capital is likely to be the predominant one.

will have worn itself out; while the effect of increased thriftiness will be permanent.

A reduction in hours of work may be desired for its own sake. The decision to sacrifice real earnings for the sake of a reduction in hours of work has to be made collectively, since in modern industrial conditions it is not possible for an individual to vary his hours and his earnings according to his particular fancy, and if a situation has been reached in which the workers as a whole prefer to forgo a part of their real earnings in exchange for an increase in leisure, it may be considered desirable that their decision should be implemented by a general agreement to reduce hours of work. But at the present time [1936] a reduction of hours is advocated, not because it is held that the level of real wages is so high that leisure is to be preferred to goods, but because it is regarded as a remedy for unemployment. How does the existence of unemployment affect the merits of the case for shorter hours? On the one hand the desire of the individual worker for leisure is likely to be weakened by the prevalence of unemployment. It is true that real wage rates normally rise as employment falls off, for with given equipment and organisation rising marginal cost normally prevails and prices fall more than money wages as output declines. But for the representative worker the average of real income, in and out of work, over a period of time is likely to be less the lower the general level of employment and the more frequent his own spells of unemployment. And with a lower real income the preference for leisure over goods is reduced. On the other hand, taking one worker with another, the sacrifice of real income due to shortening hours is much less when unemployment prevails, for the reduction in hours of work for those already employed is partly offset by a reduction in the numbers of those who are doing no work at all. In conditions of full employment a reduction in hours would reduce total output in almost the same proportion as hours, while when unemployment prevails the reduction in output will be in

a smaller proportion.[1] For the workers as a whole leisure is cheaper when unemployment is high.

A reduction of hours would certainly be desirable if no other method of providing for the unemployed were feasible in the political situation of a particular community. And it will clearly be favoured by taxpayers upon whom the duty of providing dole payments would otherwise fall.

It may be held that a redistribution of income between the employed and the unemployed is desirable, and that a given amount of employment should be spread over as many individuals as possible, so as to reduce the suffering and the deterioration resulting from long spells of un-employment.[2] This, indeed, provides the main argument in favour of the scheme, but, by its very nature, this argument proclaims the scheme to be a counsel of despair. A reduction of hours is not in any sense a remedy for a low level of employment. It merely leads to a redistribution of a smaller total of employment amongst a larger number of individuals.

2

The first effect of raising the school leaving age is to remove from the labour market a number of children who would otherwise have joined the ranks either of the employed or of the unemployed. For output to be main-tained, jobs vacated by children must be filled by older workers. It has been argued[3] that, because older workers are customarily paid a higher rate of wages so that the costs of industry will be raised, therefore output will decline. This argument is fallacious, and must be set against the contrary fallacy that exactly the same cause, by raising purchasing power, will lead to an increase of output. The

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[1] Except in the limiting case discussed above, p. 47, note.

[2] This argument has the greatest force if particular workers fall out of employment and are not re-employed until effective demand recovers, so that the 'unemployed' and the 'employed' are two distinct sets of individuals. The best of both worlds could be had by a scheme under which when, say, a quarter of the workers are unemployed each man works for three weeks in a month and draws a dole in the fourth week.

[3] For instance, by Lord Hugh Cecil in a letter to *The Times*, 3rd August, 1935.

effect of exchanging higher for lower paid workers will lead to a rise of prices and leave output unaffected (for we are neglecting reactions upon foreign trade and upon the rate of interest, and the effect of impoverishing the fixed income classes). The real wages of those already in employment will fall, but the average level of real wages will be unaltered.[1]

Some alteration in methods of production may follow from the change. One man with a van might be employed in place of six errand boys. A period of increased investment might set in while alterations in equipment were being made. But this effect is likely to be slight, for workers are not divided into two classes, children and adults. The intermediate classes of young workers between the ages of say, fifteen and twenty-one, provide close substitutes for the children retained at school. There may also be some investment in school buildings to accommodate additional pupils. At most, any increase in the rate of investment due to these causes would endure only a short time, and must be left out of account when the permanent effects of the scheme are being considered.

As before, the permanent effect of the scheme is to reduce output. For if output were to remain unchanged a number of older workers would be employed to compensate for children who would have been employed if they had left school. The amount of dole payments would then be reduced. Against this must be set any maintenance allowances which are paid in respect to school children,[2] and any expenditure made on their behalf which depletes the savings of their parents. In general it may be supposed that these items are small, and that the reduction in saving

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[1] If the older workers are more efficient than the school children the rise in prices will be less than in proportion to the rise in average wage rates, and if total output were unchanged real wages would be raised, while the number of older workers finding jobs would be less than the number of children removed from employment.

[2] Provided that the allowances are financed in a manner which reduces thriftiness to the same extent as an equal amount of dole payments. If the dole is financed by borrowing and allowances by taxation, allowances are less than equivalent to dole payments in their effect upon thriftiness.

made in respect to an older worker receiving the dole is greater than in respect to a child remaining at school. It follows that expenditure would not remain constant if output were unchanged, and that output consequently cannot remain unchanged, but must fall. As before, a reduction in employment due to increased thriftiness will tend to lead, temporarily, to a further reduction due to reduced investment. The increase in thriftiness in this case is much less than in the case of shortening hours, for the closest substitutes for the school children will be young workers, who are paid a lower rate of benefit than adult workers. The reduction in dole payments brought about by absorbing them into employment will therefore be less than the reduction when a representative sample of workers cease to receive benefit, as will occur when hours are reduced.[1]

In spite of the reduction in employment there will be a reduction in the numbers of the unemployed. For it is necessary to distinguish between an increase in employment and a reduction in unemployment. The amount of unemployment is not co-extensive with the total of man-hours which are spent otherwise than in gainful occupations. A man is unemployed when he is standing in the street, or digging his allotment, if he would prefer to accept some other occupation at the current rate of pay. He is not unemployed if he is living in idleness upon the proceeds of accumulated wealth, or upon beach-combings, provided that he has no desire to take service in organised industry. The decision as to what is unemployment and what is leisure is determined partly by the wishes of the individual and partly by the collective choice of the

[1] Let us assume that half of the children retained at school would have found work if they had left, that the dole for a child is a quarter of that for an adult, and for a young person half, and that output per head is unchanged. Then in the limiting case, where the total of dole payments is constant (see p. 47, note), for every four children retained at school two young persons will be employed and one adult unemployed, provided that there is no dis-saving in respect to a child at school. If dis-saving in respect to a child at school is equal to the dole of an unemployed child, then one adult will be unemployed for eight children retained at school.

community. If the standard length of the working day has been set by Trade Union bargaining at eight hours, an individual is not regarded as being unemployed if he is not at work for the remaining sixteen hours of the day, even though he would personally have preferred to work longer at the ruling hourly rate. Similarly a child is not regarded as being unemployed so long as he is suffering whatever period of education society has decided to impose upon him, even though he would himself prefer to be earning wages. •

To increase the length of the education period is arbitrarily to remove a certain number of individuals from the category of unemployment to the category of leisure. A child who would have been unable to find work when he left school is prevented from becoming unemployed, and when a vacancy, which would otherwise have been filled by a child, is filled by an older worker who would otherwise have been unemployed, a year of unemployment is exchanged for a year of education. Raising the school-leaving age, in short, reduces the number of the unemployed, in spite of the fact that it is likely also to reduce the number of the employed.[1] The harmful effect upon employment could be altogether eliminated by increasing the rate of unemployment or maintenance allowances, but it is to be supposed that so obvious a method of increasing employment has already been rejected by a community which is contemplating the more complicated expedients that are here under discussion.

The question of whether it is desirable to lengthen the period of education must be considered on its own merits, and it might obviously be regarded as desirable even if there was no unemployment to be considered. Even if full employment obtained it might be considered advantageous to reduce the supply of labour, and the level of real income

[1] In the first example given on p. 52, note, there is a reduction in the number unemployed of three individuals, and in the second example of seven individuals, corresponding to a reduction in the number of employed of one individual.

represented by the maximum output of industry, in order
to enjoy the benefit of improved education. In a community
which suffers from chronic unemployment the case in
favour of raising the school leaving age is greatly strength-
ened. From the point of view of the individual parent
the desire for education, like the desire for leisure, is likely
to be weakened, rather than strengthened, by the preva-
lence of unemployment. But, taking one family with
another, the sacrifice of wealth due to raising the school
age, which may be considerable if full employment obtains,
is almost nothing if unemployment is usually great.
Moreover, by its means enforced idleness can be turned to
good account, so that if unemployment were always
completely abolished by this means a low level of employ-
ment might turn out to be a blessing in disguise. Those
who place a higher value upon the advantages of education
than does the general run of public opinion, might take the
opportunity of a high level of unemployment to introduce
a reform which will persist into a period of high employ-
ment. But it must be regarded as a method of mitigating
the evil effects of a low level of employment, not as remov-
ing the cause.

3

Schemes of emigration will have important incidental
effects varying with the method by which a scheme is
financed, with the effect upon the age composition of the
population which remains behind, and with the connec-
tions preserved by the emigrants with the home country.
In order to reduce the problem to its bare essence we will
suppose that a number of families of average composition,
without property, disappear from the country and are
never heard of again.[1] It is, indeed, somewhat absurd to
discuss the question of emigration from the point of view
of a closed system. Emigration may have important re-

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[1] The effects upon employment of mobility of labour within a community, from
the point of view of the whole community, are discussed above, p. 40. Some problems
connected with changes in population are discussed below, p. 95 and p. 116.

actions upon the trade balance of the home country. If foodstuffs are largely imported, emigration will reduce the volume of imports corresponding to a given level of home employment; while an increase in the population of the outside world will tend to raise the demand for exports from the home country. Such considerations may be of preponderant importance in any actual case, and may provide strong arguments in favour of emigration, but at present we are concerned only with the view that emigration reduces unemployment by the simple process of removing the unemployed, and in what follows we will continue to abstract from reactions upon international trade.

The first effect of emigration is to reduce dole payments and so to reduce the level of employment. But it is clear that employment cannot, in the first instance, be so much reduced that unemployment remains the same. For, if unemployment were unchanged, dole payments would be constant, while output had declined, and saving would be reduced.[1] Thus both employment and unemployment are reduced in the first instance.

The decline in consumption consequent upon emigration will reduce the demand for capital goods, including

[1] In the limiting case (p. 47, note) dole payments cannot alter and the amount of unemployment is not reduced by emigration if the rate of dole per man is unchanged. If the rate of dole payments were raised in proportion to the initial reduction in numbers requiring relief, employment would be unchanged, and the number of the unemployed would be reduced by the number of emigrants. But, once more, we must suppose that the community we are considering has some strong objection to so obvious a remedy for unemployment. For instance, it was argued in the report of the Unemployment Insurance Statutory Committee, 27th February, 1936, that a rise in rates of benefit would be objectionable because it would cause some unemployed men to receive a larger income than some employed men.

Under a scheme by which the unemployment fund is self-supporting the total of dole payments must fall with the numbers of employed workers (in respect to whom contributions are paid). In such a case, if there were no change in saving when output alters, apart from changes in the dole, complete instability would result, and any fall in employment would become cumulative, up to the point at which the attempt to make the fund self-supporting was abandoned. Normally saving falls off with employment for other reasons besides an increase in dole payments, but the attempt to make the unemployment fund self-supporting much exaggerates the movements of employment, in both directions.

dwelling houses, and a decline in the rate of investment will set in. A further reduction in employment will therefore occur, and unemployment may become as great or even greater than before. If a once-and-for-all emigration takes place, a decline in the stock of capital, below what it would otherwise have been, will be brought about after a certain time has elapsed, and, if no other change in the situation occurs, unemployment will gradually fall, but the emigration will leave a legacy of permanently reduced employment as a result of the increase in thriftiness due to the decline in numbers. A constant stream of emigration will impose a constant check upon the rate of investment, and there will be no tendency for employment to recover as time goes by.

While emigration may reduce the amount of unemployment in the home country, its effect in reducing employment is likely to be the most serious of any of the schemes which we have discussed.

4

The scheme of a subsidy to wages has been proposed in various forms. Two types of subsidy are here discussed. Under the first, each entrepreneur is paid by the state a certain proportion of the wage received by each man in his employ, the sums required being recovered out of additional income tax. It is convenient to assume that money wage rates are unaltered.

From the point of view of the employer, the subsidy has the same effect as an equivalent reduction in money wage rates. Under our present assumptions, that all industries are equally affected, that the scheme is expected to last, that entrepreneurs are similar to rentiers in respect to thriftiness, that reactions upon foreign trade may be left out of account, and that the rate of interest is unaltered, a reduction in money wages has no effect upon

employment,[1] but merely leads to a proportional fall in prices.[2]

In so far as the scheme is equivalent to a reduction in money wages, it is of no benefit to employment. But under the scheme the money incomes of workers are unchanged and real wages are raised by the fall in prices, while the burden of taxation is increased. Thus, superimposed upon the effect of a fall in money wage rates is the effect of an increase in taxation the proceeds of which are paid to the workers. The transfer of income from taxpayers to wage earners has the effect of reducing thriftiness, since in general taxpayers are more wealthy, and more inclined to save, than wage earners, and the decline in thriftiness will lead to an increase in employment.[3] Thus a subsidy to wages leads to an increase in employment in the same way and to the same extent as any commensurate scheme for taxing the rich and using the proceeds for the benefit of the workers.

Under the second type of subsidy, the dole received by a man when he is out of work is paid to his employer when he is given a job. Under this scheme there is no increase in taxation, but the total of dole payments, after the date at which the scheme is introduced, cannot fall when unemployment declines.

On our assumptions, the scheme leads to no immediate change in the inducement to invest, and we may assume for the moment that employment in the investment industries is unaffected by it. But thriftiness will be reduced. Each employer receives the subsidy in respect to any men in excess of the number employed by him at

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[1] *General Theory*, chap. 19.

[2] It often happens that, by tacit agreement, firms refrain from 'passing on to the consumer' their fall in costs. This is equivalent to an increase in the degree of monopoly, and has a tendency to reduce output (see below, p. 94). For our present purpose we may assume that the degree of monopoly is unchanged, but the possibility, highly unfavourable to the scheme, that it may lead to an increase in the degree of monopoly, must not be left out of account.

[3] The increase in consumption will lead to a temporary increase in investment, which will cause a further increase in employment. Cf. p. 48.

the base date. His marginal costs will therefore be lowered. Thus entrepreneurs have an incentive to lower prices,[1] each one hoping to get custom from his rivals. But average costs have fallen by very much less, since the full wages of men formerly employed have still to be paid. A fall in prices will therefore reduce profits. If the former output were produced prices would fall, real wages would rise and less than the former level of savings would obtain. Consequently output does not remain constant, but increases.   o

The expansion of output is greater than would normally occur in response to the same decline in thriftiness. An expansion of output, by absorbing workers into employment, normally reduces the dis-saving represented by dole payments. But in the present case dole payments cannot fall below their amount at the base date. Saving will therefore increase less readily, as output expands, and the expansion of output will proceed further than in the normal case.

The increase in consumption due to the scheme will lead for a time to increased investment, and consequently to a further increase in employment. When the appropriate adjustment in the stock of capital has been made, employment in the investment industries will return to the same level as would have obtained without the scheme. It is therefore a legitimate simplification to assume that, after a period of transition, the volume of investment in real terms is the same as at the base date. The level of output must therefore have expanded sufficiently to ensure that, with reduced thriftiness, the level of saving in real terms is the same as before. If all wage incomes are spent, and if entrepreneurs and rentiers are similar, it follows that the level of real income of entrepreneurs and rentiers, taken together, must be the same as before.

In this position prices must be lower than before. For if output expanded so much that, with a lower schedule of

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[1] If no tacit agreement prevents them; see p. 57, note.

marginal costs, prices were unchanged, then there would be no reduction in net receipts in respect to the old output to offset net receipts in respect to the increment of output. Thus at the point where the surplus over wages costs (allowing for the subsidy) is the same as before, prices must be lower than before. From this a curious consequence follows. Some firms, which were working close to capacity at the base date, and which are presumably the most efficient, will be unable to expand and so will employ no subsidised labour. These firms will be compelled by the fall in prices to reduce their output, and may even be driven to close down altogether.[1] Demand is transferred from them to firms which are in a position to expand. This reshuffling of output between firms leads to an increase in dole payments. For the expanding firms will now be receiving the subsidy in respect to workers who were already employed at the base date, but who passed through a period of unemployment when their original firms dismissed them. Thus the amount of dole payment corresponding to a given output will gradually increase as the process of reshuffling goes on. Thriftiness will therefore decline and total output increase. In the final position, a larger total of output will be produced by a less efficient selection of firms.

The analysis of this scheme may appear somewhat fantastic, but the fantasy lies in the scheme, not the analysis.

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[1] Moreover, the fall in prices will increase the burden of fixed indebtedness, and, since such schemes are never proposed when entrepreneurs are prosperous, the subsidy may be expected to lead to widespread bankruptcy.

DISGUISED UNEMPLOYMENT

I

An economy consisting of self-supporting families each working their own land must always enjoy full employment, since each individual is free to work as long as he considers the real reward he obtains a ˌsufficient inducement for his efforts.

In any economy in which there is specialisation and exchange the principle of effective demand comes into play, and unemployment may occur. If, however, there are no debts, no form of money and no negotiable capital instruments,[1] the output of the community will be in neutral equilibrium. Saving can only be done by means of adding to the stock of durable goods (an increased amount of seed corn may be saved from the year's harvest so as to extend next year's crop). An increase in thriftiness is therefore necessarily accompanied by an increase of investment, and an increased desire to invest necessarily entails an increase in thrift. A communist economy without private saving is of this type.

Any community with an exchange economy and negotiable capital exhibits the main features of our own system, and in such a system there is no reason to expect that full employment will be the normal state.[2] On the contrary, full employment is only likely to occur in periods of abnormally rapid expansion, when inventions and discoveries are giving constantly renewed stimulus to investment. In a relatively stagnant state of society we should expect under-employment to be the rule. Yet unemployment, as we know it, is specifically the disease of an advanced industrial community. How can we account for the fact that, over the whole range of human history,

[1] *General Theory*, p. 239. [2] *Ibid.*, p. 347.

unemployment in the modern sense is, comparatively speaking, a rare and local phenomenon?

The answer is to be found in the existence of disguised unemployment. In a society in which there is no regular system of unemployment benefit, and in which poor relief is either non-existent or 'less eligible' than almost any alternative short of suicide, a man who is thrown out of work must scratch up a living somehow or other by means of his own efforts. And under any system in which complete idleness is not a statutory condition for drawing the dole,[1] a man who cannot find a regular job will naturally employ his time as usefully as he may. Thus, except under peculiar conditions, a decline in effective demand which reduces the amount of employment offered in the general run of industries will not lead to 'unemployment' in the sense of complete idleness, but will rather drive workers into a number of occupations—selling match-boxes in the Strand, cutting brushwood in the jungles, digging potatoes on allotments—which are still open to them. A decline in one sort of employment leads to an increase in another sort, and at first sight it may appear that, in such a case, a decline in effective demand does not cause unemployment at all. But the matter must be more closely examined. In all those occupations which the dismissed workers take up, their productivity is less than in the occupations that they have left. For if it were not so they would have engaged in them already. The wage received by a man who remains in employment in a particular industry measures the marginal physical productivity of a similar man who has been dismissed from it,[2] and if the latter could find an occupation yielding him a better return, he would not have waited for dismissal to take it up. Thus a decline in demand for the product of the general run of industries leads to a diversion of labour from occupations in which productivity is higher

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[1] The 'dole' is here used to mean any kind of relief payments.

[2] This is upon the assumption of perfect competition in the industry, but the existence of any degree of monopoly merely adds an *a fortiori* consideration.

to others where it is lower.[1]   The cause of this diversion, a decline in effective demand, is exactly the same as the cause of unemployment in the ordinary sense, and it is natural to describe the adoption of inferior occupations by dismissed workers as *disguised unemployment*.

In this connection it is convenient to make use of an alternative definition of unemployment. When full employment obtains, an increase in the output of investment goods can only occur if there is a decline in the output of consumption goods (any reasonable arbitrary division being made between the two classes). On the other hand, when less than full employment obtains, an increase in investment will normally lead to an increase in consumption, and a decline in thriftiness will normally lead to an increase in investment as well as in consumption. Thus we may say that unemployment is present when an increase in the output of capital goods (not offset by an increase in thriftiness) would lead to an increase in the output of consumption goods.[2]

Let us apply this criterion to disguised unemployment. If a revival of investment were to occur, dismissed workers would be called back from the hedgerows and the street-kerbs into their normal occupations. The wages they now receive represent a command over consumption goods which they prefer to the product of their former hand-to-mouth efforts. The output of consumption goods, as evaluated by consumers, has therefore increased. Hence, according to our definition, unemployment existed before the revival of investment took place, even though every individual worker was busy all day long. There has been

[1] We are here confronted with the formal difficulty of distinguishing a divergence of marginal products of similar workers which is due to a decline in demand, from one which is due to ignorance, inertia, or bad management. But in principle the distinction is simple, for the first would disappear and the second would not if a revival of effective demand were to occur.

[2] It was suggested earlier (p. 10) that the criterion of full employment is that no one entrepreneur can increase his staff without reducing the staff of some other entrepreneur. This criterion gives the same result as the above, provided that the men employing themselves in inferior occupations are not reckoned as entrepreneurs.

no increase in employment reckoned by heads, but there has been an increase in employment reckoned in terms of output, because efficient methods of production have been substituted for inefficient methods.[1]

The level of consumption corresponding to a given level of effective demand will be higher the better are the opportunities of the unemployed for self-help (assuming that dole payments are in any case out of the question), for the product of their efforts, the equivalent of which they consume themselves, is a clear addition to the output of the regular industries. The increase in consumption brought about by re-employing them is therefore less the smaller is the difference between their productivity in regular industry and their productivity in hand-to-mouth occupations.

In some cases this difference may be slight. When there is an open frontier, with free access for all comers to good cultivable land, the difference in productivity between a man in employment and a man in disguised unemployment may be small. In the limiting case, where there is no difference in productivity, unemployment can never occur, for a man dismissed from industry can then take up an alternative occupation without any loss in real earnings,[2] and an increase in investment could only take place if consumption were to decline.

On the other hand, the less productive are the hand-to-mouth occupations, the nearer will the unemployed be to

[1] The notion of disguised unemployment throws light on an interesting, though highly academic, problem. It has always been felt that the definition of 'employment' was arbitrary, and that a man when he is shaving himself, or a woman when she is scrubbing her own floor, is 'producing utilities' just as much as when he is mining coal or she is serving at a counter. Wicksteed carried this line of argument to its logical conclusion, and held that we are producing utilities for ourselves even when we are lying in bed. On his view, everyone is 'employed' for twenty-four hours every day. The analysis of disguised unemployment makes it clear that while everyone is *occupied* for twenty-four hours a day, so that the total amount of occupation can never be increased, yet *employment* can be said to increase when part of a man's time is transferred from an occupation in which its productivity is lower to one where it is higher.

[2] This approximates to the case of a community of self-supporting families, for this condition can only be fulfilled when no increase in productivity results from employment under entrepreneurs in specialised industries.

starvation, and the stronger will be the pressure upon society to institute some kind of dole system. The attitude of mind, prevalent even now in certain quarters, that unemployment is the result of a vicious idleness of disposition in the unemployed individuals, pandered to by the dole, is largely an anachronism which had some plausibility in an epoch when there was open access to the land, so that any active and laborious individual could make a livelihood, when he fell out of employment, not glaringly different from what he had obtained in his former trade.

The existence of disguised unemployment introduces a complication into the formal scheme of the General Theory of Employment. When it is possible for unemployment to become disguised, there is not a unique function relating total consumption to total investment, since a given rate of investment will be accompanied by a greater rate of consumption the more unemployment is disguised. In the normal way an increase in output is accompanied (in the short period) by a fall in real wages and an increase in real profits, in respect to the output which is already being produced. The increase in profits leads to an increase in saving, and it is for this reason that, even when there is no dole, an increase in output, in the normal way, can come about only if there is an increase in investment. But when unemployment becomes disguised there is an increase in output unaccompanied by an increase in saving. Some workers have found an occupation in which real earnings are low without there being any increase in profits and output expands without there being any increase in saving.[1]

[1] From a certain point of view the phenomenon of disguised unemployment may be regarded as a special case of a change in relative wages. In general, when money wages are falling, for any reason, they are likely to fall unevenly, those workers who are in a relatively weak bargaining position suffering a relatively large cut in money wages. There will thus be a fall in the real wages of some workers and a rise in the real wages of others. Output will expand (or contract by less than it otherwise would have done) where relative wages fall, and contract by more than it otherwise would have done where relatives wages rise. A change in relative wages will alter the distribution of profits between different groups of employers, relative profits rising where

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The notion of disguised unemployment has some rele-
vance even at the present day. Its effects may most
conveniently be examined in two stages. We will consider
what happens when an individual who is out of work takes
up some hand-to-mouth occupation, first when he has no
right to any form of relief, and, second, when having been
drawing the dole (which is taken to stand for all forms of
relief) he is now disallowed benefit.

To simplify thè argument we will assume that the dole
is financed entirely by borrowing, so that a reduction in dole
payments is equivalent to a reduction in the central or
local budget deficit—that is, to a decline, in dis-saving.
When this condition is not fulfilled, the dole being financed
from rates and taxes, the situation is unaltered for at least

relative wages fall, and falling where relative wages rise. This will have a reaction
upon the thriftiness of the community as a whole which may be in either direction
and may, consequently, lead either to an increase or to a decrease in employment.
Assuming for simplicity that all wage incomes are spent, the condition for a decline
in thriftiness (and an increase in employment) is that saving out of profits declines
by more,in the contracting industries than it increases in the expanding industries
(assuming that the savings of consumers are unaffected by changes in relative prices).
This condition will be fulfilled in so far as (a) the entrepreneurs in the expanding
industries are poorer, and therefore less inclined to save, than the entrepeneurs in
the contracting industries, and (b) the short-period elasticity of supply is greater in
the expanding industries, so that profits in them increase by less than profits in the
contracting industries decline. There is no particular reason to suppose that this
condition will in general be fulfilled, except, perhaps, in so far as workers are likely
to be least strongly organised where employers are poorest; and haphazard changes in
relative wages are as likely to reduce total employment as to increase it.

The condition for the increase in output in the industries where relative wages fall
to be offset by no decline in output in other industries is that there should be no
increase at all in saving out of profits in the expanding industries. This will occur
only if the entrepreneurs engaged in those industries are too poor to save in the first
instance and if the elasticity of supply is so great that their profits do not increase up
to the point at which saving begins. It is clearly unlikely that this more stringent
condition should be fulfilled by any ordinary change in relative money wages. But
when we are discussing disguised unemployment we are supposing that unemployed
individuals are restrained by loyalty, or by the strength of Trade Union organisation,
from competing for jobs in regular industry by offering themselves at cut-wage rates,
and that they take up occupations in which they are able to employ themselves. In
such a case the entrepreneurs in the expanding industries, i.e. the unemployed men
themselves, are extremely likely to be so poor as to spend the whole of their receipts.
It is for this reason that the expansion of their output is not accompanied by any
contraction in the output of regular industry.

one financial year; if, after a time, a decline in dole pay-
ments leads to a reduction in taxation, some part of the
increased net income of taxpayers will be devoted to con-
sumption, so that less than the whole of any reduction
in dole payments represents an increase of saving. This
alters the magnitude, but not the direction, of the effect
upon employment of changes in the amount of the dole.
Our assumption that the whole of the dole represents dis-
saving simplifies exposition without introducing any dif-
ference of principle. We will further assume that an
unemployed man has no saleable wealth, no relations to
help him, and no credit with his tradesmen.

In the first case, the individual we are considering has
no source of expenditure at all and is faced by starvation.
He takes up some occupation—planting potatoes if he can
get an allotment, selling match-boxes in the Strand,
hanging round railway stations to carry bags to hotels.
Anything that he earns, in kind or in cash, he devotes to
immediate consumption. Whatever he succeeds in pro-
ducing is a clear addition to the total of output. As a first
approximation we may say that from the point of view of
the rest of society, taken as a whole, his activities make no
difference to output, one way or the other. It may be that
particular producers suffer from his competition.[1] The
tobacconists will complain if he sells matches. But the
money which he attracts from the customers of the tobac-
conists is spent at the grocer's. The total output of match-
selling is not increased by his efforts, but the total output
of society is increased by a value exactly equal to what he
spends. He adds to demand exactly what he adds to
supply, the grocers gain from his addition to demand just
what the tobacconists lose from his addition to supply, and
the output of society, excluding himself, is neither increased
nor diminished. The dole-less individual, who is too poor

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[1] In so far as he is competing with other men already in disguised unemployment
he is imposing a hardship upon them, and in so far as his output leads to a curtail-
ment of theirs the whole of his output fails to be a net addition to the output of
society.

to save, is a little world to which Say's Law applies with full force.

It is to be observed that it makes no difference to the argument whether the unemployed man eats up his own produce or sells it to others. If he sells matches and buys potatoes, the tobacconist loses what the greengrocer gains, and if he grows his own potatoes, neither is affected at all. In either case, the output of the rest of society is, on balance, unaffected by his activities.

This is a first approximation. There are certain ways in which his activities may alter the output of the rest of society, but their effect is likely to be slight. First, it may be that the ordinary traders with whom he comes into rivalry are more disposed to saving than those on whom he spends his earnings.[1] If a decline in the profits of tobacconists reduces saving by more than an increase in the profits of grocers promotes it, then a transfer of custom (*via* the street seller) from one to the other will reduce thriftiness and increase output for the rest of society. But there is no *a priori* reason to expect that this effect will tell in one direction rather than another.[2] Second, charitable persons may feel inclined to buy more matches when they are offered on the kerb than when they are sold only in the shops, or commodities which are unobtainable in better times, such as the services of an outside porter, may attract expenditure from consumers on goods which they would otherwise forgo. If, but only if, this expenditure is not offset by economising on other lines of consumption, a decline in thriftiness is induced by the hand-to-mouth efforts of the unemployed man. On the other hand, the

[1] Or from whom he buys raw materials. The unemployed man may be obliged to purchase raw materials from the regular industries, but he can only do so from the proceeds of his sales. He cannot buy seed potatoes and eat the crop himself, since he has no resources to dis-save. The increase in demand, represented by his purchases of raw materials and consumption goods together, is offset by the increase in supply represented by the output which he places on the market.

[2] If a large part of the match-seller's earnings are devoted to paying rent, then, since a landlord is likely to save more than a tobacconist, it is probable that the effect of the match-seller's efforts will be to reduce the output of the rest of society.

outside porter may save the traveller from taking a taxi, and this economy may not lead him to an equivalent expenditure on something else.[1] It appears that the net reaction of the efforts of the unemployed man upon the thriftiness of the rest of the community can hardly be very great. Our first approximation is a good one, and these complications may legitimately be neglected in what follows.

We have seen that the self-help of a man who in any case does not draw the dole makes no appreciable difference to the rest of the community taken as a whole, though he may damage some sections and help others. The case of a man who is disallowed benefit is not the same. For, as we have seen, whatever he may now do for a livelihood adds to demand exactly what it adds to supply; thus whether he starves, grows potatoes, or sells matches, whether he now earns more[2] or less than he received as dole, it makes no difference. Demand for the output of the rest of society is reduced by the amount of dole that he was formerly spending. Thus, when he is disallowed from benefit, the output of the rest of the community will decline.[3] The effect of discontinuing the dole to an unemployed man, and driving him to self-help, is to increase the total of unemployment, while causing a part of it to become disguised.

It is now plain that the institution of a dole where none was before cannot lead to a decrease of employment, according to our definition. If a dole is instituted, for which complete idleness is a qualification, the result will be an increase of employment and output in regular industries,

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[1] To put the same point in a formal manner: the efforts of the unemployed alter the composition of the aggregate of goods offered to consumers, and so may alter the eligibility of consuming rather than saving; cf. p. 36.

[2] This is not inconceivable. If self-help methods provide a better income than the dole, the unemployed man may forgo benefit voluntarily, and the effect of this is exactly the same as though he were disallowed. A more plausible case is one in which a man prefers the dole, so long as he is eligible, to an onerous or undignified line of life which earns him more money.

[3] In the limiting case, where no decline in saving accompanies a decline in output except the increase in dis-saving due to dole payments, one more man must be thrown out of work, and receive the dole, for every unemployed man disallowed benefit; cf. p. 47, note.

combined with a decrease of disguised unemployment. It will cause unemployment to throw off the disguise, but, from the point of view of regular industry, the amount of unemployment will be reduced.

It should be conceded, however, that the introduction of the dole system must increase the amount of enforced idleness, of which there is none when all unemployment is busily disguised, and may, if efficiency in the occupations which disguise it is sufficiently high, lead to a decrease in the total of output. Thus, in some circumstances, it is possible to make out a case against the institution of a dole for which idleness is a qualification, though not in a country like our own, where the opportunities for self-help are exceedingly meagre and efficiency outside ordinary industry is very low.

3

But a dole for which idleness is not a qualification is an unmixed benefit. An example of such a system is to be found in self-help schemes such as that instituted at Upholland. Here a community of unemployed men work at various trades for their own benefit. They continue to draw the dole to which they were entitled when they became unemployed, and with this imports into the community are paid for. Their own produce is not exported (i.e. sold to the outside world), but is divided up and consumed within the community. Our analysis enables us to see that the output of the rest of the world is unaffected by the existence of such a community, because the dole of an unemployed man who enters Upholland continues to be spent upon the output of the outside world, while the whole produce of the workers within the scheme is a clear addition to the output of society. Further, we have seen that the distinction, rigidly drawn at Upholland, between working for home consumption and working for sale is somewhat artificial. Entrepreneurs engaged in the particular lines of production, for instance market gardening,

developed at Upholland suffer from increased competition, for without Upholland a larger part of the dole would be spent upon vegetables. If exports from Upholland were allowed, this effect would be intensified and no doubt the outcry that would be raised by the employers (and perhaps the workers also) in these trades, and the abusive references to prison labour that they would permit themselves, would create so much unpleasantness that it is scarcely practical politics to advocate exports from Upholland.[1] But the fact remains that, so long as all receipts from exports were currently spent upon imports from the outside world into Upholland, the outside world as a whole would be no worse off. Certain trades would suffer from increased competition, and certain other trades would gain from increased demand. On balance, Upholland would gain from increased variety of consumption, and the rest of the world would be no worse off.

The Upholland scheme is not in itself a remedy for unemployment. It is no substitute for measures calculated to increase effective demand. But it provides a peculiarly efficient method of reducing the ill-effects of unemployment, for it allows the advantages of hand-to-mouth production, under unusually favourable conditions, to be obtained without imposing, upon the unemployed and the rest of society alike, the evils of cutting off the dole.

Under ideal conditions, the widespread institution of such schemes could remove the ill-effects of unemployment altogether, and could produce the level of consumption corresponding to full employment, or even improve upon it. Suppose that the entrepreneurship, provided by well-wishers of the unemployed, does not compare unfavourably in efficiency with the ordinary run of entrepreneurship produced by the pursuit of profit, and suppose that the

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[1] In such cases, the interests of those who suffer by competition are more concentrated, and therefore more vocal, than the interests of those who gain by increased expenditure. If the firms who would gain by exporting to Upholland could be taught to cry as loudly as the firms who lose by the competition of exports from it, the necessity of an embargo on exports from Upholland would disappear.

schemes work on a large enough scale to approximate to the most efficient technical methods of industry. Then the productivity of a man in an Upholland community would not be much less than that of a man in ordinary industry. The level of consumption corresponding to full employment would be attained, provided that everyone thrown out of ordinary industry entered an Upholland community, if efficiency inside bore such a relation to efficiency outside that earnings within the community exactly made up the difference between the dole and an ordinary wage. A man who lost his job would then enjoy the same standard of life as a man who retained it, and an increase in investment would, at best, lead to no increase in the total of consumption.[1] If productivity in Upholland stood in a higher ratio to productivity in ordinary industry than the ratio of wage *minus* dole to wage, then the total of consumption would necessarily increase as ordinary employment declined, and the workers would actually gain by a decline in effective demand. This apparent paradox is merely due to the fact that workers are imagined to be drawing the dole on top of earnings not much less than those obtained in ordinary industry.

All this is far away from the conditions of Upholland as it actually exists. But our cloud-castle supplies an important warning which must not be neglected in the

[1] This is true in the limiting case, where no change in saving or dis-saving accompanies a change in the output of industry except the change in dole payments. Take, by way of illustration, the dole equal to one-third of the wage. Now suppose that a man is called out of Upholland and set to work in an investment industry. His total consumption is unaltered, but whereas formerly only one-third of it was drawn from the consumption industries outside Upholland, now the whole of it is drawn from them. The multiplier for the outside world is equal to 3, and two men are put into work in the consumption industries, an increase in investment equal to one man's wage leading to a decrease in dis-saving of three men's dole. Now three men have been withdrawn from the production of consumption goods in Upholland, and, of these, two are producing consumption goods outside. Thus if their efficiency in Upholland is two-thirds of their efficiency outside the total of consumption is unchanged. Investment could then continue to increase, without a decline in consumption, up to the point at which all workers are reabsorbed from Upholland into ordinary industry. Full employment is then reached, and any further increase in investment would only be possible if consumption declined.

actual situation. As the scope of a scheme such as that at Upholland expands and its managers gain in experience, the efficiency with which its output is produced will increase. A day may not be far distant when, taking account both of the standard of consumption and the general amenities, the life of an unemployed man in Upholland may appear preferable to the life of an employed man outside. If things ever came to this pass, it is easy to imagine the protests that would be made against continuing dole payments to men who were actually finding unemployment tolerable. But if the dole were discontinued, the whole merit, from the point of view of outside industry, of the Upholland scheme would disappear. The increase in efficiency which we have presumed to occur might be great enough to compensate the men within the scheme for the loss of dole payments which we have imagined to be the consequence. But there is nothing to compensate the outside industries for the loss of their export trade to Upholland. Unemployment outside would increase,[1] and profits decline. The case of Upholland without the dole is parallel with the ̇ case, examined above, of the man who was disallowed benefit and took to selling matches. The men in Upholland are less wretched than the matchseller. But this is no comfort to employers in the outside industries who suffer from the shrinkage of demand.

4

We may now consider, in the light of Upholland, the effects of the regulations surrounding eligibility for unemployment benefit. We have seen that, *provided he does not sacrifice his right to the dole*, an unemployed man does himself good, and on balance does others no harm, by

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[1] In the limiting case one additional man would become unemployed for every one who lost benefit by entering Upholland (see p. 68, note). If this condition were fulfilled at all levels of output, the result would be that ordinary industry would come to a standstill while the whole working population was employed in Upholland communities.

occupying himself as usefully as he can. Yet the regulations surrounding the receipt of the dole militate strongly against useful occupation. Until recently an unemployed man was compelled to fill his time in keeping up the appearance of Genuinely Seeking Work. If he fulfilled this obligation conscientiously he had little time or energy for any other activity. Even now he cannot embark upon any occupation which commits him to spending a certain period of time in any definite way, for he is obliged to hold himself ready to accept 'a job, should one chance to offer, at a moment's notice. But there is another consideration which is by far the most important. The unemployed man is hedged in by restrictions on his daily activity which are due to fear of losing his right to benefit. The restrictions, in the nature of the case, are highly arbitrary. Under the regulations at present [1936] in force[1] a man may pursue a subsidiary occupation, provided that (a) it is not his usual trade, (b) it does not occupy what would be his working hours if he had work, and (c) it does not bring in an income of more than three shillings and fourpence a day. Thus an unemployed waiter is allowed to accept an odd job in the morning, and an unemployed shop assistant may work after six-thirty (provided that neither accepts three and fivepence for his services), but during normal working hours they must sit at home doing their best to appear 'capable of and available for' the work that they cannot find in their normal trades.[2] Such regulations restrict the disguising of unemployment within narrow limits. Moreover, the extreme complexity of the rules and the Gilbertian situations to which they give rise have a strong effect in discouraging any efforts at self-help, for the unemployed man, bewildered by the intricacy of the regulations with which he is faced, and discouraged by the prospect of 'coming up for trial' before the Court of Referees, is

[1] Unemployment Insurance Act, 1935, Section 35, (5).
[2] The concession is made that the subsidiary occupation may actually be carried out during normal working hours provided that it could be performed outside them (Emmerson and Lascelles, *Guide to the Unemployment Insurance Acts*, p. 55).

naturally inclined to pursue a policy of Safety First and to sit at home making sure of his right to benefit.[1]

Yet, as we have seen, the situation of the rest of the community is in no way impaired if an unemployed man succeeds in earning some money, whether less or more than three and fourpence. Anything, in kind or in cash,[2] that he may be able to secure is a pure gain to himself and no loss to others, provided that he does not sacrifice his right to the dole. It follows that regulations calculated to prevent him from doing himself any kind of good are harmful to him and not beneficial to the rest of society, while regulations that deprive him of the dole on a slight pretext are deleterious to the rest of society as well as to himself. The administrative complications involved, the strong moral objection to scroungers, felt by workers as well as by taxpayers, and the difficulty of preventing employers from obtaining an illicit subsidy, may be regarded as sufficient justification for such regulations. But their economic effects can only be harmful.

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[1] These regulations apply to eligibility for unemployment insurance. The regulations surrounding relief from the Public Assistance Committees appear to be still more arbitrary. Sir John Jarvis reports (*The Times*, June 16, 1936) that some unemployed men in Jarrow, working on a purely co-operative basis to make a sports ground for themselves, were informed that they would be disqualified for public assistance relief if the work continued, although men entitled to unemployment insurance were permitted to take part in the scheme. There was no element of profit in the scheme, and the workers engaged on it received no pay except a mid-day meal, and boots and trousers in which to work, provided by the Commissioner for Special Areas.

[2] It must be recalled that we are assuming throughout that an unemployed man spends all he earns. In practice some part of his cash earnings may be devoted to paying off debts. In that case the increase in supply, represented by what he sells, is not offset by an equal increase in demand. The grocers, to return to our first example, do not gain as much as the tobacconists lose. This consideration introduces a difference between the case where he earns cash and where he works for his own consumption. But it would be hard to defend the regulations at present in force on the ground that they compel the unemployed to incur the maximum amount of debts.

PART II

THE LONG-PERIOD THEORY OF EMPLOYMENT

MR. KEYNES' General Theory of Employment has been developed mainly in terms of short-period analysis, and the background of equilibrium theory which corresponds to it is largely unexplored. The purpose of this essay is to outline a method by which Mr. Keynes' system of analysis may be extended into the regions of the long period and by which it may become possible to examine the long-period influences which are at work at any moment of time. Only a small section of the subject is here discussed, and the discussion is carried on in the highly abstract terms which are inevitable in the early stages of such an inquiry. But the importance of the subject is not merely academic and even a highly formalised treatment of it may be worth the attempt.

I

Consider a closed community, living under a capitalist system, with population stable in respect to numbers and to age distribution, and with given tastes and technical knowledge. The problem with which we shall be mainly concerned is the effect upon equilibrium conditions in such a community of changes in the rate of interest. Let us first suppose that a certain rate of interest has been established and is maintained at an unvarying level.[1] In this situation, provided that the given conditions have endured for sufficient time, net investment will have ceased.

[1] The static conditions here postulated most not, of course, be taken to present a picture of a situation which would ever be likely to occur in actuality. They are adopted as a theoretical construction which may enable us to isolate certain tendencies whose influence in any actual situation are disturbed by innumerable cross-currents. The conception of equilibrium employed in this essay is the Marshallian conception of a position of rest towards which the system is tending at any moment.

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For, as long as capital goods continue to accumulate, their profitability at the margin declines and the incentive to further investment is continuously weakened. Investment is always tending to bring itself to an end,[1] and in the stable conditions that we are considering nothing happens to revive the inducement to invest as it flags. In conditions of equilibrium the stock of capital is adjusted to the given rate of interest, and no further accumulation takes place. The marginal efficiency of capital corresponding to zero net investment is equal to the rate of interest and if, by chance, positive or negative investment were to occur, the marginal efficiency of capital would cease to be equal to the given rate of interest. If new investment were to take place capital would be increased and its earnings at the margin would fall. The marginal efficiency of capital would then be less than the rate of interest. The investment would turn out to have been unprofitable, capital goods would not be worth replacement and a movement back to equilibrium would set in with a decline in the stock of capital. On the other hand, if, in equilibrium, the stock of capital goods were allowed to deteriorate the marginal efficiency of capital would rise above the rate of interest and investment would take place until the stock of capital was restored to its former level.[2] The familiar phrase 'long-period equilibrium' may be adopted to describe this situation. For, in the ordinary sense, a firm or an industry

[1] Assuming that the proportion of total income saved rises with income. This is the natural assumption to make (see Harrod, *The Trade Cycle*, pp. 106-9). If saving were proportional to income over the whole range of income, any initial impulse in the upward direction would lead to continuous expansion (Harrod, *op. cit.*, p. 90), while zero net investment would entail zero total income. The propensity to save which is here in question must not be confused with the propensity to save under conditions of long-period equilibrium discussed below, p. 77 and pp. 102-111.

[2] In the static conditions that we are considering, equipment is conceived to be wearing out at a steady rate, each capital instrument, in equilibrium, is renewed as it wears out, production proceeds in a continuous flow, and to-day is merely a repetition of yesterday. In such conditions the logical difficulty inherent in the notion of a constant stock of capital does not arise. A change in the ratio of capital to labour is likely to be accompanied by a change in the nature of the capital goods employed, but so long as tastes and knowledge are unaltered there is no ambiguity about the direction of a change in the amount of capital.

which is under an inducement to expand or contract the plant which it employs is not in equilibrium, and long-period conditions are established only when investment has come to an end.[1]

The short-period analysis of the level of employment can readily be adapted to describe the forces which determine employment in our static community. The rate of interest determines the amount of capital per unit of labour employed.[2] To each level of employment, therefore, there corresponds a certain long-period level of total output. The rate of saving corresponding to a given total output depends, if the propensities of individuals to save are given, upon the distribution of total income between classes. Let us postulate that the degree of monopoly in the economic system is given, that the institutional factors governing the distribution of wealth are stereotyped and that fiscal policy is not altered. Then to each level of total output will correspond a given system of distribution of real income between classes.[3] Thus to each level of output there corresponds a certain rate of saving, which must be imagined to occur if that level of output is imagined to obtain. It is possible to draw up a schedule relating each level of output with the amount of saving (in real terms) which would take place if that output were attained under long-period conditions. This schedule depicts the thriftiness of the community at the given rate of interest in long-period conditions. It is natural to assume that a higher

[1] Mr. Keynes (*General Theory*, p. 48, note) uses 'long-period equilibrium' in a slightly more extended sense. My long-period equilibrium is a special case of Mr. Keynes' equilibrium, and in my terminology Mr. Keynes' position of long-period equilibrium with investment going on is a situation in which the equilibrium position is moving ahead of the actual position at a steady and foreseen rate.

[2] In order to simplify the argument it may be assumed that the hours, intensity and personal efficiency of work are stereotyped and that relative wages are constant, so that a man-day of standard labour may be taken as the unit of employment (cf. *General Theory*, p. 42).

[3] For long-period analysis it is natural to abstract from the changes in distribution which are brought about by changes in prices when certain incomes are fixed in money by long-term contracts.

level of saving will correspond in the schedule to a higher level of output.[1]

Now, in equilibrium the rate of net investment is zero. There is therefore only one level of total output which will give equilibrium—the output at which net saving is zero. Any addition to total output above this level would bring with it, in long-period conditions, a smaller increase in total consumption, for part of the increment of incomes would be devoted to saving. Supply would have increased more than demand, and equilibrium would not obtain. Conversely, if total output were to fall below this level demand would have fallen less than supply and equilibrium would be restored by an increase of total income.[2] With zero investment, output, consumption and income, for the community as a whole, are synonymous.

We have now seen how employment is determined in the long period. There is one level of output at which saving is zero, and one level of employment corresponding to that level of output. The level of employment, determined in this way, is by no means the same thing as the amount of work which the community is willing to perform, and there is no reason to suppose that our static community will be free from unemployment. If, at the level of total real income corresponding to full employment, the rate of saving would be greater than zero, that level of total income cannot be attained.[3] There is therefore no guarantee that full employment will be secured. It is likely, however, that the larger the amount of unemployment corresponding to a given level of employment

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[1] See below, p. 102, for a discussion of the conditions necessary to validate this assumption.

[2] Cf. *General Theory*, p. 30.

[3] On the other hand, in a poor or spendthrift community, the level of real income corresponding to full employment, at a given rate of interest, may produce a negative rate of saving. In such a case the equilibrium level of employment would exceed the available supply of labour, which is an impossible situation. The solution of the problem lies in the fact that the rate of interest cannot be maintained at a value at which the demand for labour overruns the limits set by the available supply, for the attempt to maintain it would lead to cumulative inflation; cf. p. 17.

the lower will be the schedule of thriftiness. For the un-employed must somehow be provided for, and their consumption is likely to be made to some extent at the expense of the savings of the rest of the community.[1] Thus, other things equal, the level of employment is likely to be higher the larger is the available supply of labour. But the amount of unemployment, in equilibrium, must be whatever is sufficient to reduce net saving to zero for the community as a whole.

It is to be observed that, in equilibrium conditions, a spontaneous increase in the desire to save will reduce the level of total output, for it will reduce the level of output corresponding to zero saving. Moreover, it will reduce the total stock of capital that will be maintained at a given rate of interest. For with a reduction in output there will be a reduction in employment, and, if the stock of capital were maintained, there would be a rise in the marginal productivity of labour and a fall in the marginal efficiency of capital. But if the rate of interest is unchanged the marginal efficiency of capital cannot alter. Therefore, in face of an increase in thriftiness the stock of capital will decline to the point at which, with zero net investment, its marginal efficiency is restored to the former level. Thus thriftiness tends to reduce the size of the equilibrium stock of capital. 'This was sometime a paradox, but now the time gives it proof.'

2

We may now consider the change in the position of long-period equilibrium corresponding to an alteration in the rate of interest.

In the short period a fall in the rate of interest (provided its influence is not offset by some other change) will necessarily lead to an increase of employment and of total income.[2] But this increase of income can only last as long

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[1] See p. 47 and p. 109.

[2] Unless full employment already obtains, in which case the reduction in the rate of interest cannot persist.

as the investment which causes it, and meanwhile other influences come into play. There are three aspects of the accumulation of capital. While investment is going on it causes an increase in effective demand, and from a strictly short-period point of view this is the only aspect of accumulation that is important. The increase in current total income brought about by building a Tower of Babel is just as great as the increase brought about by investing an equal sum in electrifying a railway system. As soon as we overstep the narrowest boundary of the short period a second aspect of accumulation must be brought into account. The greater the extent to which the amount of capital has increased in any period, the lower will be the marginal efficiency of capital, with a given rate of investment, in the next period, and the harder will it be to maintain a given rate of investment.[1] But this also belongs to the field of short-period analysis. The third aspect of accumulation is the effect of an increase in the stock of capital upon the rate of consumption, and so of employment, corresponding to a given rate of investment; it is through this channel that the specifically long-period effects of accumulation begin to be felt as soon as investment has proceeded for a certain time. In a discussion of equilibrium conditions the influence of the current rate of investment upon effective demand disappears from the picture, since in equilibrium investment is equal to zero, and it is with the long-period effects of a fall in the rate of interest upon consumption that we are alone concerned.

At first sight there appears to be a strong contrast between the part which the rate of interest plays in the short-period Theory of Employment and the part which it plays in the traditional long-period Theory of Distribution. For instance, in the short period a fall in the rate of interest will lead to an increase of output, and since with fixed equipment the marginal productivity of labour declines as employment increases, a fall in the rate of

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[1] *General Theory*, p. 106.

interest is associated with a fall in real wages. But the increase in capital per head consequent upon a lower rate of interest is likely, in the long run, to raise the level of real wages. Or, a fall in the rate of interest is associated with an increase in employment, with given plant, so that the proportion of labour to capital rises when the rate of interest falls, but in the long run a fall in the rate of interest tends to reduce the proportion of labour to capital. It is one function of the long-period Theory of Employment to reconcile this apparent contradiction, and to fit the propositions of the traditional Theory of Distribution into their place in the analysis of employment.

The problem with which we are faced is somewhat intricate, and in order to reduce it to manageable proportions it is necessary at the first stage to introduce a drastic simplification. We will examine first a case in which land and entrepreneurship are superabundant, so that in effect there are only two factors to consider—labour and capital, and we will suppose that constant physical returns prevail, in the sense that an equal proportional increase in labour and capital will produce the same proportional increase in output. Further, it is convenient to make the traditional assumption that output is divided into a number of distinct commodities, the production of each of which is conducted under conditions of perfect competition.

Let us suppose that a fall in the rate of interest takes place and remains in force for sufficient time to allow equilibrium, with zero investment, to be re-established. What will be the effect upon the equilibrium level of output?

The first point to be considered is the reaction of lowering the rate of interest upon the desire of individuals to save. The effect will differ from one individual to another, according to their circumstances and their psychology. Some will save more, out of a given real income, when the rate of interest falls, others will save less.[1] If, for the

[1] In other words, a curve connecting the rate of interest with the rate of saving from a given individual income may be either rising or backward rising.

community as a whole, a fall in the rate of interest reduces the desire to save, the total real income at which net saving is zero will tend to be greater the lower the rate of interest. But it may be, at least until very low levels are reached, that every fall in the rate of interest will lead to an increased desire to save. In this case a fall in the rate of interest will tend to reduce total income.

To consider every alternative at each stage in the argument would be wearisome and we will assume for the moment that the direct effect of a change in the rate of interest upon the desire to save is, on balance, neutral, so that the amount saved by the typical individual out of a given real income remains the same whatever the rate of interest. Then, if the rate of interest had no other influence upon, thriftiness, there would be only one level of total real income at which saving is zero, and a fall in the rate of interest would leave total real income unaltered.

But there is a further effect to be considered. A fall in the rate of interest will increase capital per head, so that a given output is produced by fewer workers using more 'roundabout' methods. The marginal physical productivity of capital will be reduced and of labour increased, and the rate of real wages will rise. Now a change in the distribution of income between workers and capitalists will have an important effect upon the thriftiness of the community as a whole. It may be postulated that in our community the capitalists are a small, and the workers a numerous class, while the shares of labour and of capital in the total income are not widely different. The capitalists, in short, are much richer individuals than the workers,[1] and are consequently more addicted to saving. It follows that any change in distribution which increases the share of labour in a given total income will reduce the amount of saving corresponding to that level of income.

[1] It is not, of course, necessary to suppose that every capitalist is richer than every worker. All we require is that the typical capitalist income should be considerably greater than the typical worker's income.

If a fall in the rate of interest produced this effect, the equilibrium level of total income would increase as the rate of interest fell, for the income corresponding to zero saving would be greater the lower the rate of interest. But it is by no means necessary that a fall in the rate of interest should have a favourable effect upon the share of labour in total income. The rate of earnings of labour is increased, but the amount of labour employed per unit of output is reduced. The rate of earnings of capital is reduced, but the amount of capital per unit of output is increased. Thus two contrary tendencies are at work, and the net result may be either an increase or a decrease in the income of labour corresponding to a given total income.

Upon the simple assumptions which we have made the result can be formulated · in terms of the elasticity of substitution. If the elasticity of substitution between labour and capital is less than unity, the proportional reduction in labour per unit of output corresponding to a small fall in the rate of interest will be less than the proportional increase in the ·rate of real wages, and the share of labour in a given output will be increased.[1] In this case a fall in the rate of interest will reduce the amount of saving corresponding to a given total income, the level of income corresponding to zero saving is raised, and the equilibrium income consequently increased. But if the elasticity of substitution is greater than unity, labour will lose on the roundabouts more than it gains on the swings, the amount of saving from a given total income will increase with the increased share of the capitalists, the level of income corresponding to zero saving is reduced, and the equilibrium income consequently declines.

We have now reached the conclusion that the equilibrium level of total output will tend to be raised or lowered by a fall in the rate of interest, according as the

[1] See Hicks, *Theory of Wages*, p. 117.

direct effect of the fall in interest upon the desire of individuals to save is negative or positive, and according as the elasticity of substitution between labour and capital is less or greater than unity. The effect upon the stock of capital and employment has still to be considered.

A fall in the rate of interest will necessarily increase the equilibrium stock of capital, provided that the direct effect upon the desire to save is not highly positive. In those cases in which output is increased, the stock of capital is increased *a fortiori*. But even if output is reduced it is reduced precisely because the capitalists have been enriched, and since the rate of interest has fallen the level of income of capitalists can only be raised if the stock of capital has increased. If, however, a fall in the rate of interest leads to a sufficiently great increase in the desire of individuals to save it may actually be associated with a decline in the stock of capital.

In those conditions in which total income is reduced by a fall in the rate of interest, employment will be reduced *a fortiori*, for not only is there less output, but there is less employment per unit of output. But in those cases in which total output is increased it does not necessarily follow that employment is increased. The diminution in employment per unit of output due to the increase in capital per head may more than offset the increase in output, so that the larger total output may be produced by fewer workers.

It may be convenient to provide a formula to represent the contrary pulls of increased total output and increased output per head upon the amount of employment. We have already discussed the manner in which output alters in response to a change in the rate of interest. Imagine that a curve is drawn up connecting the rate of interest with the equilibrium level of total output. Let the elasticity of this curve be θ. This elasticity, as we have seen, involves a complexity of factors and must be regarded as a useful shorthand term rather than as a concept which is of interest

in itself. Let c be the rate of interest and O the total output.

$$\text{Then } \theta = -\frac{\dfrac{dO}{O}}{\dfrac{dc}{c}}$$

The proportional increase in employment, due to a small change in the rate of interest, which would come about if the ratio of the factors was unchanged, is equal to $-\theta.\dfrac{dc}{c}$.

The proportional increase in employment per unit of output is equal to $\dfrac{\eta}{k}\cdot\dfrac{dc}{c}$ where η is the elasticity of substitution and k is the ratio of the cost of labour to the cost of capital.[1]

Thus the proportional increase in employment due to a change in the rate of interest is equal to $-\dfrac{dc}{c}\cdot\dfrac{1}{k}(k\theta - \eta)$.

In the simplest case, where the direct effect of changes in the rate of interest upon the desire to save is neutral and the elasticity of substitution is equal to unity, there is, as we have seen, no increase in total output in response to a

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[1] Let C be the amount of capital, and L the amount of labour, per unit of output, and l the rate of wages.

$$\text{Now} \qquad C\Delta c + L\Delta l = 0,$$
$$\text{and} \qquad c\Delta C + l\Delta L = 0.$$
$$\text{But} \qquad k = \frac{lL}{cC},$$

$$\text{and} \quad \eta = -\frac{\dfrac{\Delta C}{C} - \dfrac{\Delta L}{L}}{\dfrac{\Delta c}{c} - \dfrac{\Delta l}{l}} = \frac{\dfrac{\Delta L}{L}\left(1 + \dfrac{lL}{cC}\right)}{\dfrac{\Delta c}{c}\left(1 + \dfrac{cC}{lL}\right)}$$

$$= \frac{\dfrac{\Delta L}{L}}{\dfrac{\Delta c}{c}}\cdot\frac{lL}{cC}$$

$$\therefore \frac{\dfrac{\Delta L}{L}}{\dfrac{\Delta c}{c}} = \frac{\eta}{k}$$

fall in the rate of interest. Thus θ is equal to zero, and there will be a proportional decline in employment equal to the proportional fall in the rate of interest divided by the ratio of labour to capital.

If it is true that 'the most plausible estimate of the elasticity of substitution is unity,'[1] it appears by no means fantastic to suppose that a fall in the rate of interest may reduce the equilibrium level of employment. It is to be observed, however, that a given fall in the rate of interest will require a larger increase in the stock of capital the greater is the elasticity of substitution. The beneficial short-period effect of a fall in the rate of interest upon employment thus tends to be greatest when the long-period effect is most deleterious.

3

We must now meet the argument that it is unnatural to suppose that the rate of interest can be permanently maintained at a level at which unemployment occurs. It is sometimes held that so long as unemployment exists forces are set at work tending to depress the rate of interest. First, it may be argued that unemployment will naturally lead to a fall in money wages. The direct effect of a fall in money wages is merely to produce a corresponding fall in prices and does not by itself have any influence upon the level of employment.[2] But its indirect effects through

[1] Champernowne, *Economic Journal,* June 1935, p. 255. Professor Douglas comes to what is in effect the conclusion that the elasticity of substitution between labour and capital in the U.S.A. is equal to unity (*Theory of Wages*, p. 133 *et seq.*) though he does not specifically use the conception of elasticity of substitution and, indeed, seems to have misunderstood its nature (*op. cit.*, p. 59). Evidence for unit elasticity is also provided by the apparent constancy (over long periods) of the share of labour in total income (see Douglas, *op. cit.*, p 221, Hicks, *loc. cit.*, p. 131). But, of course, there is a wide gap between conclusions drawn from our static community and conclusions applicable to nations of the real world.

[2] *General Theory*, p. 262. An alteration in relative wages may, of course, lead to some change in employment and an expectation that future wages will differ from present wages will have important consequences (*loc. cit.*, p. 263). The above argument applies in its simplest form only to an equal all-round fall in wages which is expected to be permanent.

reactions upon the monetary factors in the situation cannot be neglected. A fall in prices leads to a reduction in the demand for money. If the monetary authorities wish to keep the rate of interest unchanged they can do so by reducing the supply of money correspondingly, but if the supply of money is held constant the rate of interest must fall.[1]

There is thus some basis for the argument that the assumption of a constant rate of interest is incompatible with the existence of unemployment, that the position which we have described is not one of final equilibrium, and that the level of money wages, and with it the rate of interest, will continue to fall either until unemployment disappears, or until either the rate of interest, or the level of money wages, reaches a point below which it can fall no further. When one of these three points is reached the tendency for a fall in money wages to drag down the rate of interest must come to an end. But we have discovered that it is not necessarily always true that the first point must be reached before the second or third, for we have found that in some cases a fall in the rate of interest merely increases the long-period level of unemployment. In a community with perfectly plastic money wages the level of prices may be always moving toward zero without setting up any tendency permanently to reverse the situation which is causing prices to fall. It is thus impossible to argue that there is any self-righting mechanism in the economic system which makes the existence of unemployment impossible, even in the longest of runs.

At best the process of forcing down the rate of interest, even with highly plastic wages, would be both slow and uncertain in its operation. A fall in the rate of interest would be followed by a period of investment, and while investment continued the level of employment would be raised. The pressure on money wages would consequently be relaxed. And if the rate of investment were ever great

[1] *General Theory*, p. 171.

enough to carry the community temporarily to the point of full employment, a rise in money wages would be likely to occur.[1] Thus the run required to reduce the rate of interest to a given extent, by this route, is likely to be far longer than the period in which equilibrium to a given rate of interest can be established. In short, on the assumption of perfectly plastic wages, our position of long-period equilibrium with a given rate of interest exists within a longer-still period, in which the rate of interest is determined by the level of money wages, and we have found that even in the longer-still period unemployment may not be tending to disappear.

The assumption of perfectly plastic money wages is highly unrealistic. A community in which money wages fall without limit so long as unemployment exists is very unlike the real world, even the pre-trade-union world, and the absurdity of contemplating a system in which prices are always moving towards zero is merely the result of the unnatural assumption on which it is based.[3]

But an alternative line of argument presents itself. If the monetary authorities in our static community are in a position to control the rate of interest by acting upon the quantity of money,[4] it may be held that in the face of

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[1] See p. 9. There is no contradiction in contemplating a world subject to a chronic tendency to unemployment in which at the same time there is a secular rise of wages and prices. The underlying tendency to force wages downwards may be more than counterbalanced by the upward pressure of a short burst of high investment. An earthquake, a war, or a major invention may undo in a year the work of centuries of chronic unemployment. This consideration reinforces the argument advanced by Mr. Keynes in the *General Theory*, p. 307.

[2] 'If wages are once raised, they will never get down again.' Dr. Johnson. (Boswell: *Journal of a Tour to the Hebrides*, Tuesday, 28th September).

[3] Cf. p. 6.

[4] In a primitive system with metallic currency the quantity of money is fixed by the stock of the precious metal, and a fall in the rate of interest can only be imagined to occur through a fall in money wages. When money wages fall the price of the metal, alone of all prices, remains unchanged and mining is encouraged. Thus the tendency for a fall in money wages to lower the rate of interest is reinforced—the supply of money increasing as the demand for it falls. But there is some awkwardness in fitting the occupation of mining into completely stationary conditions. If yesterday is like to-day in every respect except that to-day has inherited a larger accumulation of gold, to-day's rate of interest will be lower than yesterday's. But there is little profit in studying this unnatural cross between a stationary and an actual world.

unemployment they will be likely to adopt a policy of easy money. Actual monetary authorities are hampered by the necessity to protect the international equilibrium of their system. The monetary authorities of a closed community, though free from this difficulty, may be restrained from lowering the rate of interest by a tender regard for banking profits or for the interests of the rentier class. But we will suppose that their policy is directed towards reducing unemployment so far as it is possible for them to do so. In any given situation a temporary increase in employment occurs when the rate of interest is lowered and investment set on foot. Thus the monetary authorities in our static community will be under recurring pressure to reduce the rate of interest whenever equilibrium with a given rate entails unemployment.

But except during the passing phase of positive net investment an increase in employment is not necessarily a result of a fall in the rate of interest, for, as we have seen, there are three stages at which there may be a slip between the cup and the lip.

First, a fall in the rate of interest may increase the desire to save, and so tend to reduce total income. Second, the change in distribution may be unfavourable to labour, and so tend to reduce total income. Third, even if total income increases, employment may be reduced, because of the increase in output per head. In certain communities, therefore, a policy of lowering the rate of interest in order to reduce unemployment will frustrate itself. The temporary relief obtained while investment is at its height will gradually dwindle and the last state will be worse than the first. Each burst of investment, as the rate of interest is gradually reduced, will leave behind it the legacy of an enhanced mal-distribution of income and an increased level of output per head. A high temporary level of employment becomes progressively harder and harder to attain, and the equilibrium level of employment sinks further and further.

In such a case, a rise in the rate of interest may be advocated. But to attempt to cure unemployment by raising the rate of interest would present itself at any moment as a very paradoxical policy. For the immediate effect of a rise in the rate of interest would always be to cause disinvestment and to increase unemployment. It is only after the lapse of time that a decline in the stock of capital could make its influence felt in reducing thriftiness, by impoverishing capitalists, and in raising the amount of labour required for a given output. The most devoted apostle of long-run benefits would find it hard to advocate the increased distress which would have to be endured before any advantage began to appear. Moreover, the short-period situation is always easier to diagnose than the long-period, and even the well-known hardihood of economists trained in the school of equilibrium analysis might not be sufficient to make them reject a bird in the short-period hand for a pair of which they may have managed to catch a glimpse in the long-period bush. At best, the long-period benefit of a policy of raising the rate of interest is dubious. The rate of real wages for the employed workers would be reduced by it. And apart from the possibility of a negative reaction on the desire to save, a rise in the rate of interest can increase the equilibrium level of employment only at the expense of other long-run advantages. In so far as it produces its effect by reducing the amount of capital per head, it is keeping productivity at a lower level than might be attained and curing unemployment merely by 'making work'. On the other hand, in so far as it increases employment by reducing the share of capitalists in total income it provides very superficial treatment for a deep-seated disease. The most effective remedy for a community which finds itself in such a situation is to make a direct attack upon the mal-distribution of income which is the cause of excessive thriftiness.

But even if the policy of raising the rate of interest were adopted, it could not be guaranteed to secure full employ-

ment, for it is likely that there will be a limited range of values over which a rise in the rate of interest will increase employment, while beyond this range a rise will reduce it again. There will then be a certain maximum level of employment which can be attained by operating upon the rate of interest, and this maximum may fall short of full employment.[1] For some communities, therefore, full employment may lie beyond the reach of even the most powerful and most enlightened of monetary authorities.

In certain communities, on the other hand, which are poorer, more egalitarian, more spendthrift, more easily discouraged from saving by a fall in interest, or in which the elasticity of substitution is low, the monetary authorities may be in a position to secure full employment in the long-period by setting the rate of interest at the appropriate level. It may be contended that we have been guilty of an over-formalised argument in suggesting that all communities are not of this kind. It is formally true (on our assumptions) that when the elasticity of substitution is greater than unity, and the direct effect of a fall in the rate of interest on the desire to save positive, lowering the rate of interest causes a decrease in total income and in employment, but it may be argued that at very low levels of the rate of interest (as Professor Cassel contended) the desire to save must be checked, and that at very high levels of capital per head the elasticity of substitution must fall below unity. Thus, it may be argued, a *sufficient* reduction in the rate of interest will always increase employment.

[1] A curve may be drawn connecting the rate of interest with the equilibrium level of employment, the rate of interest being measured on the y axis and employment on the x axis. In the case described above this curve would fall from left to right over the higher values of y, reach a point of zero elasticity, and fall back from right to left over the lower values. This curve may lie over its whole length inside the limits of the available supply of labour. Full employment is then unobtainable.

[2] Upon this view the curve described in the preceding footnote would reach a second point of zero elasticity and fall from left to right over the lowest values of the rate of interest. But as the rate of interest falls towards zero a point must be reached at which the typical earned income becomes greater than the typical capitalist income. When this point has been passed the condition which formerly obtained is reversed, and a fall in the rate of interest tends to increase thriftiness when the elasticity of

A priori argument on such points is of little value, and it may very well be that actual investigations would support this contention.

But even if this view is correct it does not follow that full employment can always be reached by lowering the rate of interest. For, first, it may be that no rate short of zero will be sufficiently low to secure full employment,[1] and second, even if the rate of interest corresponding to full employment is positive, it may be so low that it is impracticable for the monetary authorities to establish it by any device within their power.[2] It is therefore impossible to maintain that the existence of unemployment is incompatible with conditions of final equilibrium.

4

Our analysis has so far been conducted upon the assumption that there are no scarce factors of production. It will be found that our main conclusions are not affected by the introduction into our analysis of a fixed supply of land and other natural resources.

Consider, first, how the existence of a scarce factor influences the effect upon output of a change in the rate of interest. In order to simplify the argument we will once

substitution is *less* than unity. Suppose that we start in a position at which a change in distribution favourable to capitalists increases thriftiness and at which the elasticity of substitution is greater than unity. At this point a fall in the rate of interest (assuming that the direct effect upon the desire to save is neutral) will reduce equilibrium income. As the rate of interest falls towards zero a point must be reached at which the elasticity of substitution becomes less than unity, and another point must be reached at which a change in distribution favourable to capitalists (who are now poorer than earners) reduces thriftiness. When either of these points has been passed, without the other, a further fall in the rate of interest will raise the equilibrium level of income, but when both have been passed a fall in the rate of interest, by enriching the earners, who now enjoy higher incomes than the capitalists, will increase thriftiness and so reduce the equilibrium level of income. Thus there is likely to be a certain range of low values of the rate of interest within which a fall will increase equilibrium income, but in the lowest range of all a fall in the rate of interest will reduce equilibrium income.

[1] The curve may cut the x axis before it has reached the limits of the available supply of labour.

[2] *General Theory*, p. 309.

more confine ourselves to the case in which the direct effect of the rate of interest upon the desire to save is neutral. An increase in total output will raise the demand for land and increase the share of landowners in total income. The extent of the increase in output will therefore depend upon the saving propensities of the landowners. It seems natural to assume that in our community the landlords are similar to the capitalists, both in respect to the range of incomes which they receive and in respect to their individual desire to save. Upon this assumption it can be seen that the responsiveness of output to changes in the rate of interest is smaller when land is scarce. If a fall in the rate of interest increases output by impoverishing capitalists, it will enrich landlords.[1] And if a fall in the rate of interest reduces output by enriching capitalists it will impoverish landlords. The equilibrium total income, with zero saving, will therefore alter by less, in response to a given change in interest, when land is scarce than when it is superabundant. The direction of the change will not be affected.

The influence of fixed natural resources upon changes in the level of real wages must also be considered. When land is scarce it will no longer be true that a fall in the rate of interest necessarily raises the rate of real wages. Capital per head is still likely to be increased by a fall in the rate of interest, but in those cases in which output expands when the rate of interest falls, land per head will be reduced, and the net effect may be to lower the marginal physical productivity of labour. In the opposite case, where output declines as a result of a fall in the rate of interest, land per head is increased and real wages are raised by so much the more.

[1] This is not quite accurate, for though the increase in output tends to raise landlords' incomes, the increase in capital per unit of output consequent upon a fall in the rate of interest will be partly at the expense of land. There may therefore be a certain range of outputs over which the landlords are impoverished. But what the landlords lose by a high elasticity of substitution between land and capital, the capitalists gain, and on the assumption that both classes have the same degree of thriftiness, a transference of income between them has no effect upon total output.

The effect of fixed natural resources upon employment is in general to reinforce the influence of changes in output. A given increase in output requires more labour when land is scarce than when it is superabundant and a given decline causes more unemployment. The case in which total output increases but employment declines is therefore less likely to arise when land is scarce.

5

We have discussed movements in the position of long-period equilibrium consequent upon changes in the rate of interest. Other types of change can be similarly treated. The equilibrium position will be shifted by an alteration in the thriftiness of the community, whether due to a change in institutional influences on the distribution of wealth, to a change in fiscal policy such as an alteration in methods of supporting the unemployed, to a change in the degree of monopoly,[1] or to numerous other causes. And the position of equilibrium will move with movements in population and with changes in technique.

The effect of an increase in thriftiness, as we have seen,[2] is to reduce the equilibrium level of employment and the stock of capital. The rate of interest being assumed constant, capital per head and real wages are unaffected, except in so far as land per head is greater at a lower level of employment.[3]

[1] In general, an increase in the degree of monopoly will increase thriftiness and so reduce employment, for it will alter the distribution of income unfavourably to labour.

Any group of competing firms can increase their aggregate profits, at least temporarily, by amalgamating, and, at any moment, the extent of monopoly is determined by a tension between the lure of profit, on the one hand, and the desire for independence and the difficulties of amalgamation on the other. Since the fear of loss is more powerful than the hope of gain, there is a strong tendency for the degree of monopoly to increase as effective demand falls off, while amalgamations formed in slump conditions tend to break down as trade improves. (Cf. Pigou, *Theory of Unemployment*, p. 135). Thus changes in the degree of monopoly tend to amplify the swing of movements in effective demand initiated by other causes. (But see Harrod, *The Trade Cycle*, p. 17, for a factor which may tell in the opposite direction.)

[2] P. 79.   [3] See also p. 112.

An increase in numbers produces its effect upon employ-
ment by way of a reduction in thriftiness. If we compare
two positions of equilibrium in which all conditions are
alike except that in one position population is greater than
in the other, then the amount of unemployment correspond-
ing to a given level of employment will be greater in the
first than in the second, and, on any reasonable assump-
tions about the methods by which the unemployed are
supported, the level of consumption will be higher. Thus
the equilibrium level of employment in the larger popula-
tion will be greater than in the smaller.[1] With a constant
rate of interest and no scarce factors, the stock of capital
will be increased in proportion to the level of employment
and real wages will be unchanged. If scarce factors are
present, real wages will be lower. Since an increase in
population requires an increase in capital equipment, to
provide for a higher level of consumption, a continuous
increase in the population would prevent investment from
ever falling to zero.

Changes in technique which result from discoveries of
new methods of production alter the schedule of the mar-
ginal efficiency of capital. If the rate of interest is un-
changed, equilibrium is reached, after inventions have been
made, when the stock of capital is so adjusted that marginal
efficiency, with zero investment, is restored to its former
level.[3]

[1] It is a simple matter to make a comparison between a community with a larger
and with a smaller population, each stationary. But the process of change, involving
an alteration in the age composition of the population, will set up complicated re-
actions upon thriftiness, through its effect upon the desire and the ability to save
of the representative family; upon productivity, through its effect upon the com-
position of the labour force; and upon the degree of mobility of labour, which in general
is likely to be greater the larger is the proportion of young to old people.

[2] *The Times* is accustomed to point with complacency to the increase in numbers
employed which often occurs even in months when numbers unemployed have also
increased. The implication is that it is a healthy sign that industry can 'find work'
for even a small part of the increased population of working age. But there is no cause
for congratulation in this phenomenon. With every pair of hands God sends a mouth,
and the mere increase of population leads to some increase in employment. For em-
ployment to remain stationary while the population increased would be a sign that
slump conditions were increasing in intensity.

[3] I am much indebted to Mr. M. Kalecki for assistance in formulating this analysis.

Inventions have been classified in various ways. For our present purpose the most convenient classification is as follows.[1] A *neutral* invention is one which affects the efficiency of production equally at all stages, so that output per head in producing capital equipment is raised equally with output per head in producing final goods. When the stock of capital has been adjusted, after an invention of this type, so as to restore equilibrium to the given rate of interest, capital per unit of product is the same as before, and the relative shares of labour and of capital in a given output are unchanged. A *capital-saving* invention increases efficiency in producing capital goods more than in producing final goods, reduces the equilibrium amount of capital per unit of product, and reduces the relative share of capital. A labour-saving, or better *capital-using*, invention, increases the equilibrium amount of capital per unit of output, and increases the relative share of capital in a given total income.

The effect of inventions upon the equilibrium level of output will depend upon its reaction on the distribution of income. An invention which reduces the share of labour in a given income will reduce the equilibrium level of output by increasing thriftiness, while an invention which increases the share of labour will increase equilibrium output. Thus capital-saving inventions increase, and capital-using inventions decrease, the equilibrium level of output.

Equilibrium output will increase or diminish according as the relative share of labour is increased or reduced. But even if output is constant, employment will decline, since the improvement in technique and the increase in capital per head will combine to increase output per unit of labour. Thus employment will be constant only if the situation is such that output increases. Since, in general,

[1] See *The Classification of Inventions*. Review of Economic Studies, February, 1938, where I compare this system of classification with that used by Mr. Hicks in his *Theory of Wages*.

capital-using inventions have been the most frequent,[1] there appears to be, from a long-period point of view, very strong grounds for the popular opinion that inventions tend to reduce employment.[2]

The immediate effect of inventions upon employment depends upon the extent to which new equipment is the product of net investment and not merely the result of

[1] Mr. Hicks (*Theory of Wages*, p. 125) distinguishes between *autonomous* and *induced* inventions, the latter being inventions which result from a deliberate effort to think out ways to take advantage of an alteration in relative factor prices, labour-saving inventions being induced by a fall in the rate of interest, while autonomous inventions arise from the progress of pure science or from spontaneous bright ideas. Induced inventions he subdivides into two types, those whose adoption depends upon the changed interest rates, and those which would have been profitable in any case, but which were in fact only thought of under the stimulus of the change. It appears simpler not to regard the first type as inventions, but rather as *adaptations* of technique to changed conditions. When we say that 'technical knowledge is given,' we do not mean that every entrepreneur has blue-prints in his pigeon-holes of every type of machine which it would be profitable to use at each conceivable rate of interest. We merely mean that there is a certain body of technical knowledge which will lead to a certain adaptation of technique to circumstances. The rapidity and the ingenuity with which adaptations are made may properly be regarded as a component of the state of technical knowledge. (Cf. Pigou, *Economics of Welfare*, p. 217, where a similar point is made in connection with adaptations resulting from changes in scale.)

Induced inventions in the narrower sense may be of importance. A period of falling interest rates may be expected to produce a crop of capital-using inventions, and a period of rising rates, of capital-saving inventions. In such a case the assumption that the state of technical knowledge is independent of movements of the rate of interest must be appropriately modified.

Mr. Hicks' opinion that autonomous inventions are likely, over a period of generations, to be equally divided between labour-saving and capital-saving discoveries, is hard to accept. It appears obvious that the development of human methods of production, from the purely hand-to-mouth technique of the apes, has been mainly in the direction of increasing 'roundaboutness,' and that the discovery of short cuts, such as wireless, are exceptions to the general line of advance. It is conceivable, however, that in a community already richly endowed with capital an era of capital-saving invention may set in.

[2] The question has often been posed whether inventions are 'harmful to labour.' To say that an invention is harmful to labour may mean three things. It may mean that employment is reduced by it. This, as we see, is highly probable. It may mean that the real wage rate of those in employment is reduced. This is very unlikely. A *sufficiently* labour-saving invention will reduce the marginal productivity of labour corresponding to the initial amount of capital (cf. Hicks, *op. cit.*, p. 122) but the increase in capital per head required to restore equilibrium tends to raise the marginal productivity of labour, and it is only in a very extreme case that the real wage rate, in equilibrium, would be reduced. Finally, an invention harmful to labour may mean one which reduces the total income of labour. When inventions are neutral the total income of labour will be unchanged. Therefore, if inventions are mainly labour-saving, they are likely to reduce the total income of labour in the long run.

using the amortisation funds of old plant to set up new plant. In general we may suppose that, except when inventions are highly capital-saving, a period of positive net investment will result from them, even when the equilibrium stock of capital (reckoned in wage units) is not increased, for all except the most capital-saving require an increase in capital per head, while the reduction in total output which results from increased thriftiness will not be immediately foreseen.[1] The first 'effect of inventions, therefore, is likely to be an increase in employment, even when in the long run they will reduce it, and a sufficiently rapid succession of inventions, provided they are not extremely capital-saving, would prevent the rate of investment from ever falling to zero.

6

The situation of any actual community can be regarded as a situation in which investment is tending towards zero. Before adjustment is reached to a given set of circumstances, circumstances change. Changes in numbers, in technique, in the rate of interest, in social and institutional influences and in the political situation, are constantly shifting the position of equilibrium, and the processes of investment never have time to catch up with changes in the equilibrium stock of capital. The clock is wound up before it has had time to run down. Even if circumstances remained unchanged, the system would not run smoothly into an equilibrium position, for the very process of adjustment gives rise to oscillations, and even in stationary conditions the system would fluctuate perhaps eternally, around the equilibrium position.[2] Moreover, if a position of full long-period equilibrium were ever reached, with considerable

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[1] In general, capital-using inventions require a larger amount of investment than capital-saving inventions, while the amount of investment required to restore equilibrium with the rate of interest will be greater the greater the elasticity of substitution.   Thus, once more (p. 86), the change most deleterious to employment in the long period is most beneficial in the short period.

[2] *General Theory*, p. 218.

unemployment, the nature of the situation would become obvious to the community, and institutional factors would be forced to change. Our analysis of long-period equilibrium cannot therefore be regarded as a prediction of the course of history.

Nevertheless it serves to show that long-period influences are of the utmost importance at any moment of time. Our static community in full equilibrium is a very remote abstraction, and for any real community in a changing world the position of equilibrium is shifting faster than the system adapts itself to change. But the motive for studying equilibrium positions is to discover forces which are at work when the system is out of equilibrium, and the long-period tendencies which we have discussed are set to work by any change as soon as the change is made. When investment has been going on for a few months new capital goods come into existence. Labour is displaced by their use; prices are lowered and the rate of real wages raised as soon as their product is added to the supply of consumption goods. Changes in the distribution of income, raising or lowering the level of consumption, begin to be felt as soon as new dividends begin to be paid.

Moreover, the time required for the long-period effects of a given change to outweigh the short-period effects may not be very long. Suppose that the effect of a fall in the rate of interest is considerably to reduce the equilibrium level of employment. Then when a fall in the rate of interest has taken place it may be only a matter of a year or two before the level of employment sinks below what it would have been if the rate of interest had been maintained at the higher level, in spite of the fact that schemes of investment made profitable by the fall in the rate of interest may continue to be carried out for many years on end. Or, again, since a fall in the rate of interest is likely to set up a long-period tendency for real wages to rise, there will be a certain length of time, following an initial fall in the rate of interest, after which real wages will be higher

than they would otherwise have been, in spite of the fact that a high level of employment, tending to depress current real wage rates, is still being maintained.

In any actual situation long-period tendencies show themselves in the statistics concurrently with short-period effects, and it would be impossible to make a comparison of output, employment and wages between one year and the next if long-period tendencies were not brought into account.

THE CONCEPT OF ZERO SAVING

IN conditions of long-period equilibrium, with zero net investment, net saving, for the community as a whole, is equal to zero. Long-period equilibrium therefore requires that the amount and distribution of income and of wealth shall be such that the total of net saving is zero.

The concept of zero saving is fundamental to the discussion of long-period equilibrium, equally in the 'Classical' and the 'General' system of analysis. In classical conditions of long-period equilibrium there is full employment, and the rate of interest is conceived to assume such a value that full employment is compatible with zero investment. In the system of analysis outlined in the preceding pages the rate of interest is taken as given, and the amount of employment (and total income) is conceived to assume whatever value is compatible with zero investment at the given rate of interest. The two systems of thought are complementary, not rival. For instance, the preceding analysis has shown that in certain types of society full employment is not compatible with a positive rate of interest. The classical analysis, applied to the same situation, would tell us that, since full employment obtains, the rate of interest must be negative.[1]

It has always been recognised that, even in the classical scheme, the concept of long-period equilibrium with zero saving is subject to the difficulty that a fall in the rate of interest does not necessarily lead to a fall in saving, since it is associated with an increase in the amount of capital, and may therefore be associated with an increase in

[1] A negative rate of interest presupposes the use of some device such as Gesell's stamped money, for so long as money has no carrying cost there is one form in which wealth can be held on which the rate of interest is zero, not negative (*General Theory*, p. 357). When the rate of interest is negative it is profitable to employ capital in forms which reduce the total output of a given number of men while prolonging the period of production (*General Theory*, p. 214).

capitalist incomes.[1] But this difficulty cannot arise unless the rate of interest is positive. When the rate of interest is negative an increase in the amount of capital is neces- sarily associated with a reduction in capitalist incomes,[2] and, moreover, with a reduction in output per head. There is, therefore, always some value of the rate of interest, positive or negative, which will give full employment in static conditions.

But when the rate of interest is taken as given, and it is the amount of employment which is conceived to vary, the problem of zero saving is not so easily disposed of. The influence of unemployment upon saving may be separately treated, and we will first assume that the incomes of capitalists and employed workers are indepen- dent of the amount of unemployment.[3]

Now, the fundamental assumption which is required by the General Theory of Employment is that an increase in income leads to an increase in saving.[4] Under short- period conditions, where an increase in income entails an increase in employment with given capital equipment, this assumption is highly plausible, and, in a general way, the evidence in favour of some measure of stability in the economic system appears sufficiently strong to warrant the belief that this assumption is fulfilled in reality.[5] The corresponding assumption for long-period conditions is that, the rate of interest being given, the increase in income which would be associated with an increase in the stock of capital, when employment of the other factors is adjusted to it in the proportions dictated by the rate of interest, would lead to an increase in saving. In short, the existence of a unique position of long-period equilibrium correspond- ing to a given rate of interest requires that, if a chance

[1] See Knight, *Ethics of Competition*, p. 183.

[2] With a negative rate of interest, the elasticity of substitution is negative, and consequently less than + 1.

[3] For instance, the unemployed may be supposed to fend for themselves by the methods of 'disguised unemployment'; cf. above p. 6c

[4] *General Theory*, p. 29.   [5] Ibid.. p. 251

increase in the stock of capital were to occur when equilibrium has once been reached, then, at the level of income corresponding to the larger stock of capital, there would be positive saving. If this condition is fulfilled a chance increase in the stock of capital will reduce its earnings below the level dictated by the (constant) rate of interest, and a period of disinvestment will restore the stock to its former size. The paradoxical appearance of thinking of an increase in saving as leading to disinvestment is merely a reflection of the fundamental paradox that an increase in thriftiness tends to reduce the stock of capital.

When the above condition is not fulfilled there is no unique position of long-period equilibrium corresponding to a given rate of interest. If the desire to save is independent of the level of income (given the rate of interest) then any level of income is' compatible with equilibrium, and if there is zero saving at one level there will be zero saving at any other. A chance reduction in the amount of capital, instead of setting on foot a tendency for the former stock of capital to be restored, would merely shift the point of equilibrium to a position compatible with the smaller stock of capital. From a long-period point of view there would be neutral equilibrium, though at any moment short-period stability might still obtain. Further, if a decline in income associated with a reduction in the amount of capital leads to an *increase* in the desire to save, unstable long-period equilibrium would obtain. Any chance reduction in the amount of capital would set on foot a tendency to a progressive reduction in capital and in income. Such a state of affairs appears uncongenial to common sense, but cannot be ruled out of court on the evidence, since evidence relating to static conditions cannot in the nature of the case be provided by the history of a changing world.

Complete equilibrium further requires that saving shall be zero on balance not only for the community as a whole, but also for each individual. For if some individuals are

saving, when total saving is zero, others must be dis-saving, and a progressive redistribution of wealth and of income will be taking place. The total of capital is the same to-day as yesterday, but since yesterday the owner-ship of capital has changed hands.

Four cases may be distinguished giving different solu-tions of the double problem of equilibrium for the system as a whole and equilibrium for individual savers. First, it may be assumed that the saving of each individual is zero over his lifetime. During his youth he is supported by the expenditure or dis-saving of his parents. In his active years he saves, and after his retirement he dis-saves what he has accumulated, providing for his children in exactly the same manner that his parents provided for him. In this case there is no progressive accumulation or decumulation by the individual family. The schedule of thriftiness for the community as a whole would vary with the age composition of the population. When the popula-tion is stable, the dis-saving of the retired exactly absorbs the savings of the active and total savings are zero at all levels of total income. A rise in the general level of income would lead, after a period of transition, to a higher rate of both saving and dis-saving, the standard of life of the retired rising with the standard of the active.

In such a case there is stable equilibrium within the saving class, in the sense that, if the total of capital is given, there is no tendency for the distribution of its ownership to change. But there is neutral equilibrium in respect to the total amount of capital. Any amount of capital which happens to be in existence will be preserved intact, the total of current consumption being always equal to net income. If there is a chance decline in the amount of capital, wealth, income, and expenditure will suffer a corresponding fall and there will be no tendency for the former stock of capital to be restored. Conversely for a chance increase in the stock of capital. The assump-tion that all saving takes the form of simple provision for

old age is therefore incompatible with the assumption that there is a unique position of long-period equilibrium corresponding to a given rate of interest.

The second case which we may distinguish arises from the assumption that the predominant influence upon saving is the amount of wealth already possessed. In this case an increase in present income, in itself, may still increase saving, but an increase in the ownership of capital will tend to reduce the saving of the capitalist, since his desire to own an increased amount of wealth becomes weaker as the amount he owns increases. Let us suppose that an individual, the whole of whose income is unearned, saves less when his income and his wealth increase in the same proportion (as would occur when the rate of interest is constant), and more when his income and wealth decline. On this assumption there is an equilibrium distribution of capital between individual owners corresponding to a given total of capital. Suppose that the total of capital is given. Then if equilibrium within the capitalist class does not obtain, some individuals, who own little capital or who are thrifty by nature, will be saving, and others, who are more wealthy or more spendthrift, will be dis-saving. But as capital changes hands, those who gain capital become less anxious to acquire more, and those who lose become more anxious to avoid a further loss. The rate of saving of the one class, and dis-saving of the other, fall off as capital changes hands, and equilibrium is reached when the ownership of wealth is adjusted to temperament, the most miserly being the most wealthy, in such a way that no individual is either saving or dis-saving.

In this case equilibrium within the capitalist class can be attained. But the system as a whole is in unstable equilibrium. For in this case a chance increase in the amount of capital (the rate of interest being constant) would reduce the desire to save of those individuals to whom the new capital accrued. Thriftiness would be reduced and a progressive increase in the stock of capital

would begin. Conversely, a chance reduction in the amount of capital would increase thriftiness and a progressive decline in the amount of capital would set in. In so far as earned incomes are partly saved a stabilising factor is introduced into the picture. For a chance increase in capital would raise the equilibrium level of earned income, and the income of the earning classes would increase in a greater proportion than their wealth. For this class, therefore, saving may increase with an increase in the total of capital. But if the bulk of saving is done by individuals the whole of whose income is unearned, then, in the case which we are considering, there is no equilibrium value of the total amount of capital corresponding to a given rate of interest. Thus this assumption, which gives stable equilibrium within the capitalist class, gives unstable equilibrium for the system as a whole.

Neither of these two cases has much appearance of reality. It is natural to suppose that an increase in income would lead to an increase in the habit of bequeathing wealth to descendants, so that the first case could not occur. The second case appears equally unreal, for it is natural to suppose that the amount of wealth which an individual requires to provide a sense of security rises with his standard of life, and that the amount which he requires to satisfy pride rises with the amount possessed by his rival capitalists, so that a general increase in the income of the capitalist class, even though it is associated with a proportionate increase in their wealth, leads to a rise, not a fall, in the amount which they desire to save. This view is congenial to common sense, since a richer community does not normally exhibit a lower propensity to save than a poorer community. It is necessary to admit the theoretical possibility that the assumption that saving increases with income may fail to be fulfilled under long-period conditions, and when it is not fulfilled there is no unique position of long-period equilibrium corresponding to a given rate of interest. But to pursue the analysis of

neutral or unstable long-period equilibrium would involve an expenditure of ingenuity which scarcely seems profitable. It is better boldly to postulate, what is after all highly plausible, that an increase in total income would lead to an increase in saving, even when it is associated with an increase in wealth. The foregoing analysis of the long-period theory of employment was conducted upon this assumption. Upon this assumption our first two cases are ruled out of court.

There is a third case, in which stable equilibrium obtains both for the system as a whole and within the capitalist class. In this case it is assumed that an increase in the *general* level of wealth does not discourage saving, but that an increase in *relative* wealth does. Then to each amount of total capital will correspond a certain distribution between individual capitalists which will induce zero saving for each individual, as in our second case. The pride and ambition of the savers will reach saturation as their wealth increases relatively to the average of the capitalist class, while the humiliation of losing will after a point induce the dis-savers to live within their means. But in this case a chance increase in the total of capital would not reduce the motive for saving, since the average ownership of wealth, which is assumed to govern the desire for possession, would rise with the total. If the new capital is imagined to accrue to a particular group of capitalists, they would be induced to dis-save, but envy will now inspire saving on the part of others, and after a process of re-shuffling an equilibrium distribution of ownership will be attained. The level of total income corresponding to zero total saving will be lowered when the average ownership of capital is increased, and there will be a unique equilibrium amount of capital corresponding to a given rate of interest. Thus a position of stable equilibrium exists for the system as a whole as well as for the capitalist class.

A fourth case arises from the assumption that the saving

of an individual increases with his present income, even though his wealth has increased at the same time. In this case there is stable equilibrium for the system· as a whole, since a chance increase in capital would lead under long-period conditions to an increase in saving. But there is no equilibrium within the capitalist class. Any individual who happens to save will augment his income and so increase his rate of saving. While any individual who is induced to dis-save by a decline in income will reduce his income progressively and increase his dis-saving, until the whole of his wealth has disappeared and he is driven from the ranks of the capitalist class. In this case, the total of capital being given, there is a progressive concentration of wealth going on at any moment, of which the only logical resting-place is reached when the whole national capital is owned by the most pertinacious saver in the capitalist class. Bizarre as it may appear, this case is in some respects the most realistic of the four which we have considered. For it may very well be that in a modern capitalist society there is a strong underlying tendency towards a progressive concentration of wealth, which is only held in check by periodic redistribution through accidents, death duties, the division of large estates between several heirs and the occasional appearance of a spendthrift in a wealthy family.

The underlying tendency towards concentration may be partially offset by a decline, as time goes by, in the thriftiness of wealthy families. The sons of Marshall's successful business man 'are perhaps left a good deal to the care of domestic servants whô are not of the same strong fibre as the parents by whose influence he was educated,' and instead of concentrating on business ambition they are 'at least equally anxious for social or academic distinction',[1] so that the family firm withers like a tree in the forest; similarly the sons of the assiduous saver may turn from their father's ways, and the family

[1] *Principles*, p. 300.

fortune begin to decay. Equilibrium of the Marshallian type would be established when there was zero saving on balance within each grade of the capitalist class, while the personnel of each class was altering. At any moment some individuals within a grade would be saving and rising out of it, and some dis-saving and falling below it, their places being taken by dis-savers from a higher grade and savers from a lower grade. There would then be no progressive tendency towards the concentration of capital in ever fewer hands.

Even when the tendency to concentration prevails over the tendencies which bring about redistribution, so that there is no equilibrium within the capitalist class, there is still, as we have seen, a unique equilibrium total amount of capital corresponding to, a given rate of interest at any moment. But if concentration is proceeding through time, so that the distribution of income is becoming progressively more unequal, then the thriftiness of the community will be increasing, and the equilibrium amount of capital, corresponding to a given rate of interest, will fall as time goes by. Thus as concentration proceeds the equilibrium level of income and employment will fall. The final position of equilibrium is not reached until the whole capital of the community is owned by one man, and his capital is reduced to the point at which his savings are zero. The evils of unequal distribution will then have produced their maximum effect.

The paradoxical appearance of the foregoing discussion is partly to be attributed to the fact that we had ruled out of account an important influence tending towards stability. We have yet to examine the effect of unemployment upon the thriftiness of the community. A reduction in the net income of capitalists and employed workers due to the fact that they are obliged to support the unemployed may be assumed to reduce the amount that they save. Thus, in general, the larger the amount of unemployment corresponding to a given level of employment, the

smaller will be the amount of saving corresponding to a given level of employment, and the higher will be the equilibrium level of employment. Moreover, the 'equilibrium level of employment will tend to be higher the more lavish is the provision made for the unemployed.

Conditions of neutral or unstable long-period equilibrium are less likely to arise when the unemployed are supported by the rest of the community than when they are left to fend for themselves. For an increase in the stock of capital, with a given rate of interest, would be accompanied, if it persisted in equilibrium conditions, by an increase in employment. But a reduction in the drain on the incomes of the rest of the community caused by unemployment would lead to an increase in saving. Thus the condition for stable equilibrium, that a chance increase in capital leads, under long-period conditions, to an increase in saving, is more likely to be fulfilled the more ample is the provision for the unemployed.

So long as the unemployed are supported at the expense of the rest of the community, that is to say by taxation or by charity, there is no disturbance to equilibrium within the capitalist class. But we must also consider the case in which the unemployed are supported by borrowing, either privately or by the state.

In this case the incomes of the rest of the community, when the system as a whole is in equilibrium, will be just so great as to induce a rate of positive saving equal to the negative saving represented by borrowing on behalf of the unemployed. Equilibrium within the capitalist class will not then exist, for accumulation must continue as long as borrowing persists. If to-day inherits yesterday's debts, to-day is not a simple repetition of yesterday.

A source of disturbance is now introduced into the equilibrium situation. For, when the amount of unemployment is considerable, the ever-mounting burden of debt must sooner or later reach a point at which it becomes

intolerable, so that some means have to be found to curb the exactions of creditors. In such a case the institution of a Jubilee Year, at which all debts are forgiven, might fend off political upheavals and enable the community to continue indefinitely supporting the burden of long-period unemployment.

DISINVESTMENT

WHEN the stock of capital is in equilibrium a rise in the rate of interest, or a fall in prospective earnings, will set up a tendency for disinvestment to occur. But the extent of the disinvestment will be different for different types of capital goods.

In this connection capital goods may be divided into two classes, according to the method by which their efficiency is maintained. A machine of one type has a certain period of working life, after which it is discarded and replaced by a similar new machine. The other type, of which a railway bridge is an example, has, practically speaking, permanent life, provided that running repairs are carried out. In many cases either method of maintenance is technically possible, but one will be less costly than another. A building could be left without adequate repairs until it began to fall to pieces, and another building could then be erected in its place, but if this method were pursued the amortisation fund required permanently to maintain the equivalent of the original building would be a greater proportion of its initial cost than if the method of continuous repairs was adopted. A lick of paint from time to time will save expense in the long run.

The extreme case of the first type is to be found in, for example, a stock of coal, of which the whole initial cost (assuming prices are unchanged) has to be laid out each time the capital is used if the initial stock is to be maintained intact. An extreme example of the second type is the preparatory survey for a railway line, where the capital is maintained permanently intact without any expenditure above the initial cost. From the point of view of the generation that inherits it, capital of this type is equivalent to 'the free gifts of nature.' A border-line case is provided by a machine which has, say, ten years of working life at

full efficiency if no repairs are undertaken, and which has a permanent life if 10 per cent. of its initial cost is laid out each year on repairs. In this case an amortisation fund of 10 per cent. of cost is required to maintain efficiency by either method, and it will be a matter of indifference (neglecting interest) which method is pursued.[1]

The risk involved in the initial investment in equipment of the second type is greater than in the investment of an equal sum in the first type. Against the first type an amortisation fund is accumulated during the life of the machine, and if, when the time for renewal comes, the prospects of that type of machine are less bright than they were when it was first made, the fund can be used for buying a different machine or for holding a security, instead of replacing the defunct equipment. But where the method of repairs is used each year's contribution to amortisation is sunk in the equipment as it is made and cannot be used for acquiring any type of asset other than the machine in question. If two pieces of equipment, one of either type, each with an amortisation fund of 10 per cent. óf cost, both lose all prospect of future earnings in the fifth year of life, the owner of the machine of the first type can save half the cost of the machine from the wreckage, while the owner of the other machine can save nothing. With equipment of the first type the possibility of 'getting your capital out of the business' in case of need is much greater than in the second type. If the most probable prospective profits are equal in the two cases when the initial investment is made, the degree of certainty must be greater to induce an investment of the second type, or,

[1] Many cases will present a more complex problem. In general, the efficiency of a machine will fall off gradually, if no outlay is made on repairs, until it finally becomes useless. The more is spent upon repairs the greater will be the efficiency of the machine for a given length of life, and the greater will be the length of life at a given level of efficiency. It is therefore necessary to balance the cost of repairs against the decline in earnings of the machine which will occur, in a given state of the market, if repairs are not undertaken. In most cases where the replacement method is used some current repairs will also be profitable. Equipment belongs to the second type when it is profitable to maintain perpetual life at a given level of efficiency by means of repairs alone.

with a given degree of certainty, prospective profits must be higher.[1]

For equipment of the first type the process of disinvestment is perfectly symmetrical with the process of investment. But with equipment of the second type the case is different. If the rate of interest rises after the investment has been made the machine will continue to be maintained so long as its current yield exceeds its current upkeep.

A simplified example will make the point clear. Suppose that there is a set of ten similar machines each costing £100 to produce, with a length of life of ten years, and suppose that at a particular moment the age of the machines is evenly distributed, one dating from each of the past ten years. Suppose that the expected earnings of the set of machines are £150 per annum. Then the outlay of £100 to replace the oldest machine when it wears out is equivalent to the purchase of a perpetual annuity of £5 (the earnings of the machine being £15 and its depreciation allowance £10 per year).[2] Thus if the rate of interest is 5 per cent. the machine will be replaced. If the rate of interest is greater than 5 per cent. it will not be replaced. At the end of a year, unless prospective earnings have risen or replacement cost fallen, a second machine will be allowed to wear out and so forth, the stock of machines gradually dwindling, and being replaced, from the point of view of their owner, by securities. Now suppose that a single machine, costing £1000 to produce, can be kept in repair by an annual outlay of £100, and suppose that if this outlay is not made in any one year the machine

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[1] In the border-line case given above the method of renewal will for this reason be preferred to the method of repairs. In a chancy market the border line will be pushed further into the territory of the method of repairs than would be the case if future prospects were known with certainty. Risk is allowed for in the calculation of prospective profits, and for simplicity two pieces of equipment may be described as having equal prospective profits if these prospects are equal after allowance has been made for any difference in risk.

[2] In this illustration, as in that above, interest earned on the amortisation fund is left out of account in order to simplify the calculation.

becomes unusable. Suppose as before that its earnings are
£150 per year. Now an outlay on repairs of £100 in
any one year results in a profit of £50. Although it would
not pay to produce the machine in the first place if the
rate of interest were more than 5 per cent., it will not pay,
once it exists, to let it fall out of repair, whatever the rate
of interest may be. The continued existence of the plant
after the rate of interest has been raised will prevent pros-
pective profits from being tradually increased by the
gradual disappearance of similar machines, and the price
of the machine will remain permanently below its cost of
reproduction.

Thus if the rate of interest falls below 5 per cent., the
stock of both types of equipment will be increased, but if it
rises above 5 per cent. the stock of the first type only will
be reduced.[1] Similarly a small fall in prospective profits
will lead to disinvestment in the first but not in the second
type of equipment.[2]

This example is highly simplified. Normally the life
of a machine will not come to an abrupt end as soon as
expenditure on repairs is cut down, and a rise in the rate
of interest, or decline in prospective earnings, would lead
to some reduction in the amount of repairs that it is
profitable to carry out. But in the normal case the distinc-
tion between the two types of equipment, though less
dramatic than in this example, will still be present.

If a significant amount of plant is of the type which is
maintained by repairs, it follows that the amount of
capital per head in a position of equilibrium is not uniquely
determined by the rate of interest. Any period of invest-

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[1] Cf. the distinction between capital goods and 'rent-earning goods' drawn by Wick-
sell, *Interest and Prices*, p. 126. A similar point is discussed in connection with the notion
of normal profits by Mr. G. F. Shove, *Economic Journal*, March 1933, p. 119; by Mr.
R. F. Harrod, *Economic Journal*, June 1933, p. 337 and *Quarterly Journal of Economics*,
May 1934, p. 457; and by myself, *Quarterly Journal of Economics*, November 1934,
p. 108.

[2] A rise in the cost of capital goods, relatively to their yield, has an equal effect on
both types, provided that the rise affects repairs and replacement in the same propor-
tion.

ment will leave a permanent legacy behind it, and if a given position is reached after a period of low interest rates, or exaggerated expectations of profit, capital per head will be greater, real wages higher and the level of profits lower, than if the same position had been reached with a past history of lower rates of capital accumulation.

This consideration is of great importance in many departments of economic analysis. Its most interesting application is to the problem of declining population. If a given level of population is reached after a period of decline, its capital equipment will be greater than if the same population had existed for some time in a condition of stability or were reached after a period of expansion. In a community where population has declined there will be a large amount of plant whose price is less than its cost of production. The earnings of this equipment have fallen below the level which was necessary to tempt it into existence in the first place, but are not yet so low as to cause it to fall out of use. Real wages are consequently higher than would otherwise be the case. In effect certain capitalists have been disappointed into providing capital more cheaply than they intended, and the rest of the community is benefited at their expense.

Now it happens that the class of capital whose prospective earnings are most affected by changes of population—houses, land drainage, roads and railways—is also a class in which the repair method of maintenance is predominant. Thus the principle governing disinvestment is of the greatest importance to a community with declining population. A smaller population inherits housing and permanent-way designed for its more numerous ancestors. Rents and fares are low. The railway companies pay small dividends, and at some stage may have passed through a process of bankruptcy, ruining their debenture-holders but enriching the rest of the community.

Let us compare two communities, each of which is in

full equilibrium with a stationary population,[1] which are alike in every respect except that in one, say Alpha, capital is predominantly of the type which is maintained by repairs, while in the other, Beta, it is maintained by renewals. Since, in the extreme case, capital of the first type is equivalent to natural resources, we may suppose that in Beta land is superabundant. In face of a decline in population, each community will suffer a decline in employment.[2] The reduction in consumption, expected to be permanent, will lead to a decline in the stock of capital. The decline in employment will be greater in Beta, not only while disinvestment is proceeding as a result of the reduced profitability of capital goods, but also permanently, since in Alpha thriftiness is likely to be permanently reduced by the impoverishment of capitalists. In each there will be an initial rise in real wages, for with reduced employment, capital per unit of labour will increase.[3] But in Beta the stock of capital will decline as time goes by and real wages will gradually relapse towards their former level, while in Alpha the predominant part of the stock of capital will remain in existence and real wages will be permanently raised.

Thus it appears that (except so far as the capitalists are concerned) Alpha is in a more favourable position than Beta, in face of a decline in population. But against this must be set a serious disadvantage. If any circumstance favourable to investment, such as a decline in the rate of interest, were now to occur, the consequent increase in employment will be much greater in Beta than in Alpha. Let us suppose that, after the decline in population has occurred, the price of every kind of capital good in Alpha is less than its replacement cost. A small fall in the rate of

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[1] The argument can readily be generalised to cover the case in which long-period equilibrium does not obtain in the initial position.

[2] See p. 95.

[3] The notion of an 'optimum population' at which average real income is maximised can only be discussed in long-period terms, for, from a short-period point of view, population is always greater than the optimum.

interest will then lead to a rise in the price of capital goods in Alpha, but to no other effect, whereas in Beta it will inaugurate a period of investment and increased employment. After the lower rate of interest has ruled for some time the stock of capital in Beta will have increased and the difference between the two communities will be lessened. But Beta will enjoy the short-period benefits of investment, from which Alpha is debarred.

This is upon the assumption that the free play of private enterprise is allowed to determine the level of employment. It would always be possible for the authorities to offset the deleterious effect of a decline in population upon investment by taking measures calculated to increase the propensity to consume.

DIAGRAMMATIC ILLUSTRATIONS

AN attempt to submit the General Theory of Employment to diagrammatic treatment is subject to grave objections, since few of the concepts concerned can be reduced to precise quantitative terms. A formalised treatment may, however, be of use merely as an alternative method of expressing some of the propositions of the foregoing analysis. It will be found necessary to make a number of simplifications in order to reduce them to a form which can be expressed in a two-dimensional scheme.

The Supply Curve of Labour

It is clearly permissible to say that, in some sense, the amount of labour which a given population[1] is able and willing to provide will vary with the ruling level of real wages. But the conception of a given amount of labour presents certain difficulties. First of all the notion of the total supply of labour can be given no precise meaning for a system within which labour is immobile, between areas or between trades, and our illustrations

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[1] An attempt is sometimes made to treat movements of population as a function of real wages. In the simple Malthusian view the supply of workers is perfectly elastic at a certain wage, representing the minimum standard of life. But even in those countries where Malthusian conditions prevail, the decline in the death-rate which follows an improvement in real wages does not come about in any simple or immediate way, but shows itself partly in, for instance, a better resistance to the next epidemic which happens to follow the improvement, and partly in the enhanced efficiency of those who survive. Professor Pigou *(Stationary States*, p. 167) restates the Malthusian argument in terms not of a physical minimum but of a customary standard of life. On this view, if, for instance, agricultural workers are used to enjoying wireless sets, we must expect that they will refuse to be born when wages fall to a level at which they can no longer afford them. It is sometimes argued that in the Western world the Malthusian law is reversed (cf. Robertson, *Economic Fragments,* p. 16) and that a ·community which has become accustomed to an improved standard of life will experience a decline in the birth rate. But neither the Malthusian nor the reverse-Malthusian law works with sufficient regularity for the notion of population movements as a function of real wages to be a profitable simplification, and it seems preferable to treat population movements as an independent datum.

must be confined to cases in which either there is a high degree of mobility or the demand for labour of various types always moves in such a way as to require no change in their relative supply. When this difficulty is disposed of, others remain. The amount of work which an individual provides in a day varies with his personal efficiency, with the intensity of his efforts and with the number of hours worked per day, none of these variables being completely independent of the others, and the number, of worker-days which a given population provides varies with the average number of workers per family.[1] Moreover, a given proportional increase in one dimension of the supply of work will not produce the same effect upon the total, along whichever dimension it is made. To double the number of workers, keeping hours unchanged, is not equivalent to doubling the number of hours, keeping the number of workers the same. A unit of work is therefore a conception of some complexity. Similarly, the level of real wages is not a simple rate of earnings per unit of work but a highly complicated system of interrelated rates. In any particular inquiry the relevant complexities must be taken into account, but for many problems a rough-and-ready treatment will suffice. For the purely illustrative purpose of the present note we will suppose that circumstances are such that it is possible to construct an appropriate compensated unit of work, representing a man-day of given efficiency, and an appropriate index of real wage rates per unit of work. It is then possible to draw a curve connecting the amount of labour which the population wishes to provide with the ruling rate of real wages.

A rise in the level of real wages will have effects which tell in opposite directions. On the one hand it will raise the personal efficiency of the workers by improving their standard of life; on the other hand, as needs become less urgent, the choice between an increase in leisure and an increase in earnings is likely gradually to turn more and

[1] Robertson, *loc. cit.*, p. 7.

more in favour of leisure, in spite of the extra inducement to work represented by a higher rate of reward. As the rate of real wages rises, hours of work will generally tend to be reduced, the working life of the representative individual will be shortened both by longer education and earlier retirement, and women will be less anxious to find employment.[1] Though the question is not entirely beyond dispute, it may be regarded as a general rule that the amount of work provided by a given family of given efficiency will fall as real wage rates rise.[2] Thus as the level of real wages rises a decrease in hours of work and in the number of workers in the representative family must be set against the improvement in personal efficiency. At very low levels the latter must be of preponderating importance, and when the standard of life falls below a certain point the supply of labour must contract even though every available person is prepared to work to the maximum physical limit. As the level of real wages rises the improvement in efficiency due to an increment of earnings will become less and less, and a point will be reached at which the effect of reduced willingness to work begins to outbalance the effect of increased ability. A

[1] The choice between earnings and leisure is not, in modern conditions, left entirely, or even mainly, to the preference of the individual, but is standardised by collective decisions, legal or customary, as to the length of the working day, the period to be spent in education, and so forth. These decisions, however, will be largely influenced by the urgency of the needs which have to be sacrificed to secure the benefits of leisure (cf. p. 49).

[2] Marshall (*Principles*, p. 528–9) held that this generalisation only applies to those who live in 'southern climes'. While 'those whose mental horizon is wider, and who have more firmness and elasticity of character, will work harder and longer the higher the rate of pay which is open to them.' And he concludes 'that increased remuneration causes an immediately increase in the supply of efficient work, as a rule; and that the exceptions to this rule . . . are seldom on a large scale.' Weight must be allowed to this view, but there is a considerable body of evidence against it (see, e.g., Douglas, *Theory of Wages*, chapters xi and xii). Mr. Harrod's attempt to disprove it by *a priori* methods (*Economic Journal*, December 1930, p. 704) unfortunately breaks down, for it is not the case, as he asserts, that a curve, which has less than unit elasticity at both ends, cannot (apart from 'kinks and irregularities') have more than unit elasticity over an intermediate range.

A rise in the marginal above the average rate of pay, such as is offered under over-time schemes, will normally call forth additional work. Such schemes introduce some complications which are not here discussed (cf. Robertson, *loc. cit.*, p. 8).

curve representing the supply of labour will therefore be of some such form as that shown in Figure 1, at first forward rising, reaching a point of zero elasticity and then becoming backward-rising.
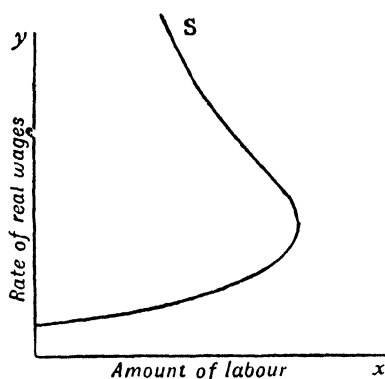

FIG. 1

The supply of labour reckoned in units of work is measured on the x axis and the level of real wages per unit of work on the y axis in this and the following diagrams.

This curve is of use solely in depicting the point of full employment. It does not represent the amount of work which will actually be done at any level of real wages, but the amount of work which the population is willing to provide.

In a case in which either Trade Union policy or spon-taneous feeling dictate a minimum level of real wages, such that workers will prefer to face the hardships of un-employment rather than accept it (p. 28, n. 1), the lower part of the curve will be highly elastic at a rate of real wages corresponding to this minimum. In face of a lasting period of high unemployment the minimum level of real wages demanded is likely to fall, for though wage rates tend to rise as unemployment increases the average earn-ings of the whole working population will be low when unemployment is high, and both the customary standard

of life and ability to hold out for terms will be declining.[1]

The level of unemployment experienced over a number of years will affect the supply curve of labour in other ways. On the one hand a high level of unemployment, just as much as a low level of real wages, may lead to a loss of efficiency and so cause the available supply of labour to fall off. On the other hand hours and intensity of work are increased not only by a fall in real wages but also by an increase in insecurity, which causes workers to placate their employers, in fear of losing their jobs, by working hard and refraining from complaints about unpleasant conditions. When the actual level of employment is high workers become more exacting and . are less willing to endure long hours or to submit to being speeded up. Thus a high level of unemployment will tend to reduce the available supply of labour in one way and increase it in another. The net effect of these changes may be represented by a shift in the supply curve. But such considerations show one of the imperfections of the method of treating the available supply of labour in a given population as a function of real wages alone.

THE LONG-PERIOD DEMAND CURVE FOR LABOUR

The relation between real wages and the actual amount of employment must next be considered. A curve can be drawn up, in given conditions, relating the amount of employment to the level of real wages which would rule if that amount of employment were to obtain under equilibrium conditions. This curve will not be independent of the manner in which the amount of employment is conceived to alter, and a different curve must be drawn up for each type of movement. If a change in employment is

[1] The minimum level will be conceived in terms of wages per man, whilst our curve is drawn up in terms of wages per unit of work. The weakening of resistance, may take the form of willingness to work longer hours for the same daily wage. The paradoxical expedient of lengthening the working day in the face of severe unemployment is not unknown in practice.

conceived to be due to a movement of the rate of interest it will be accompanied, in the long period, by a change in capital per head, and consequently in the marginal physical productivity of labour. If it is conceived to be due to a change in thriftiness, with a given rate of interest, capital per head will be unaltered (except in so far as a change in land per head induces a change in capital per head), but the relative supply prices of wage-goods and non-wage-goods are likely to be affected. This curve has some affinities with the conception of a demand curve, since it relates the level of employment to the corresponding wage rate. But it is fundamentally different in nature from an ordinary curve. The rate of wages is not an independent, and the amount of employment the dependent variable. Both are dependent upon variations in the rate of interest or the level of thriftiness. If circumstances are such that the level of employment is x, then the same circumstances produce a real wage rate y. For lack of a better term the curve will be described as a demand curve for labour, but it is important to bear in mind the distinction between this curve and an ordinary demand curve.

To illustrate some of the propositions set out in the foregoing discussion of the 'Long-period Theory of Employment' we will make use of the curve appropriate to changes in the rate of interest. If technical conditions, natural resources and the degree of monopoly are given, and if thriftiness is unchanged except in so far as it is a function of the rate of interest, there is a unique level of employment corresponding under conditions of long-period equilibrium to each rate of interest and a unique level of real wages corresponding to each level of employment. A demand curve can then be drawn up depicting the change in the level of real wages which accompanies a change in the equilibrium level of employment brought about by an alteration in the rate of interest. We have seen that a fall in the rate of interest may either increase or decrease the equilibrium amount of employment (pp. 81–86).

But, when there are no scarce factors, a fall in the rate of interest always raises the level of real wages. Thus the elasticity of our curve may be either positive or negative. When scarce factors are present (p. 93) a fall in the rate of
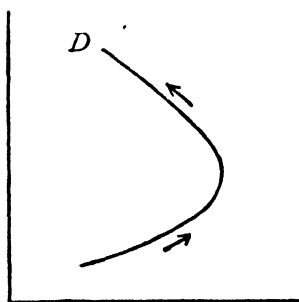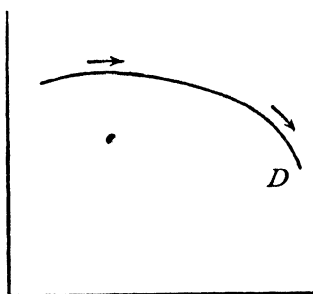

Fɪɢ. 2   Fɪɢ. 3

interest which leads to an increase in employment will be accompanied by a smaller rise in real wages than if there were no scarce factors, or even by a fall, while a fall in the rate of interest which reduces employment will be accompanied by a greater rise in real wages. Thus the effect of scarce factors is to increase the elasticity of the curve.

Figures 2 and 3 represent two of the many possible forms which may be assumed by the long-period demand curve appropriate to changes in the rate of interest, the direction of the arrows showing the direction of a fall in the rate of interest. Figure 2 depicts a case in which scarce factors are unimportant, so that a fall in the rate of interest always raises real wages, and in which successive reductions in the rate of interest at first increase and then reduce the equilibrium level of employment (p. 89). Figure 3 depicts a case in which a fall in the rate of interest always increases employment, and in which the effect of scarce factors becomes increasingly important as employment expands, so that successive reductions in the rate of interest at first raise and then lower the equilibrium rate of real wages.

FULL EMPLOYMENT

The point of full employment is defined by the point of intersection of the supply curve and the demand curve. When effective demand is such that actual employment stands at this level, then every unit of work available at the corresponding level of real wages is bespoken and one entrepreneur can increase the amount of labour he employs only by reducing the amount employed by someone else. Figures 4, 5, 6, and 7 represent cases in which the
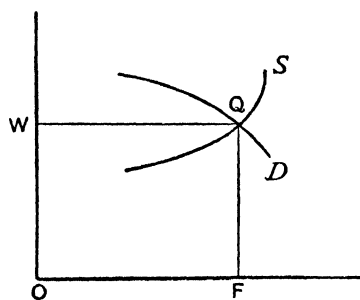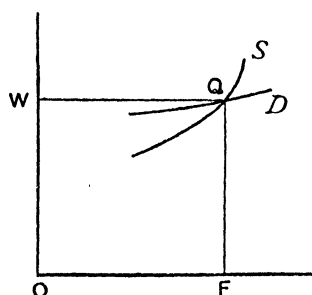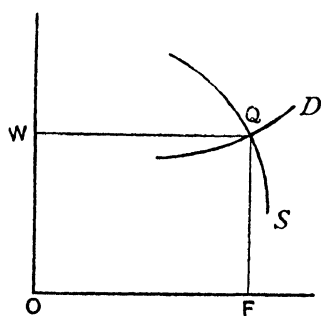

FIG. 4

FIG. 5

FIG. 6
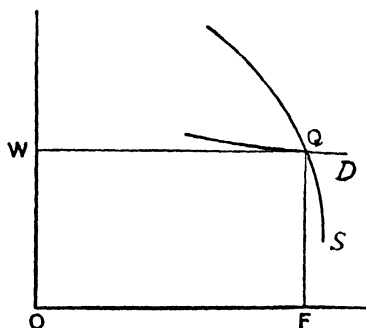
FIG. 7

D in each diagram is the demand curve, and *S* the supply curve. OF represents full employment and OW the real wage rate which rules when full employment is attained.

elasticities of the demand and supply curves have the same or different signs at the point of intersection.

Beyond the point of intersection the demand curve lies below the supply curve when the supply curve is rising and above it when it is backward-rising.[1] For, where the curves cut in the contrary sense an increase in effective demand, at the point of intersection, is accompanied by a change in the level of real wages which calls forth a greater increase in the available supply of labour, and full employment does not obtain. This rule applies equally whether a rise or a fall in real wages is associated with an increase in employment, and equally whether a fall is due to the existence of scarce factors or to the fact that an increase in equilibrium employment requires a rise in the rate of interest. The direction of the arrows shown in Figures 2 and 3 is therefore irrelevant in the present context.

In some circumstances no point of intersection exists between the supply curve and the long-period demand curve, because the long-period demand curve appropriate to changes in the rate of interest lies entirely within the supply curve (p. 90) as in Figure 8. But reductions in thriftiness with a given rate of interest lead to no increase in output per head. The demand curve appropriate to changes in employment brought about by changes in thriftiness will have infinite or negative elasticity (as in Figure 9), and since there must always be some level of employment at which the available supply of labour becomes perfectly inelastic, a point of intersection between the two curves must always exist. In short, while there may be circumstances in which full employment cannot be reached by manipulation of

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[1] Mr. Keynes' definition of involuntary unemployment is not strictly accurate. 'Men are involuntarily unemployed if, in the event of a small rise in the price of wage-goods relatively to the money-wage, both the aggregate supply of labour willing to work for the current money-wage and the aggregate demand for it at that wage would be greater than the existing volume of employment' (*General Theory*, p. 15). This condition is fulfilled by the level of employment OF in Figure 7 at which there is no involuntary unemployment. Mr. Keynes' definition is appropriate only to short-period conditions, when a fall in real wages is a symptom of an increase in effective demand, and it is formally correct only for cases in which the elasticity of supply of labour in terms of real wages is zero or positive.

the rate of interest, it can always be reached by a sufficient reduction in thriftiness (p. 90).
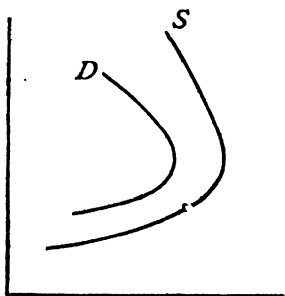

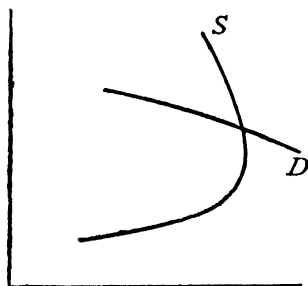FIG. 8   FIG. 9

It is important to bear in mind that the point of intersection of these curves is not of the same nature as the point of intersection of ordinary supply and demand curves. It does not represent a point of equilibrium, but merely the point beyond which it is impossible for employment to expand.

THE SHORT-PERIOD DEMAND CURVE

Any given point on the long-period demand curve is intersected by a short-period demand curve, showing the course that real wages would follow if a change in employment were to occur after equilibrium had been reached with the stock of capital appropriate to that point on the long-period curve. The short-period curve falls off steeply for an increase in employment above the long-period equilibrium amount, for with given equipment the marginal physical productivity of labour falls with an increase in employment; while it rises above the long-period curve for a decline in employment, which reduces the intensity with which the given stock of capital goods is employed. This curve also must be drawn with reference to the manner in which a change in effective demand is brought about. In the case illustrated in Figure 10 changes are
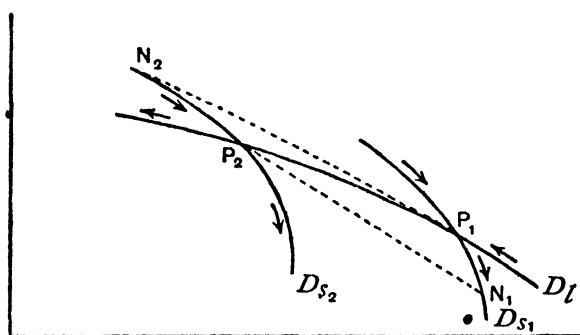
FIG. 10

Dl is a long-period demand curve for labour.
Ds_1 is the short-period curve appropriate to the point
P_1 and Ds_2 to the point P_2.
The direction of the arrows shows the direction of a
fall in the rate of interest.

conceived to be due to changes in investment brought
about by movements in the rate of interest.

Figure 10 represents the case discussed on p. 86, where
a fall in the rate of interest leads in the long period to a
fall in employment. Suppose that when equilibrium has
been reached, at P_1, to a certain rate of interest, a fall in
the rate of interest occurs. Employment will increase and
wages fall to a point, N_1, on the short-period demand curve
appropriate to P_1. As time goes by, if no further change
takes place employment will fall and wages rise to P_2, the
point of long-period equilibrium corresponding to the
lower rate of interest. If the rate of interest is now raised
to its former level, employment will fall and wages rise to
a point, N_2, on the short-period demand curve appropriate
to P_2. As time goes by employment will increase and wages
fall until they are once more restored to the position P_1.

The short-period demand curve will normally be of the
form shown in Figure 11, having a rapid change of slope
at the point, P, which corresponds to the level of employ-
ment, OE, at which a preponderance of firms in the

consumption industries are working to their designed capacity. If employment is increased beyond OE a sharp
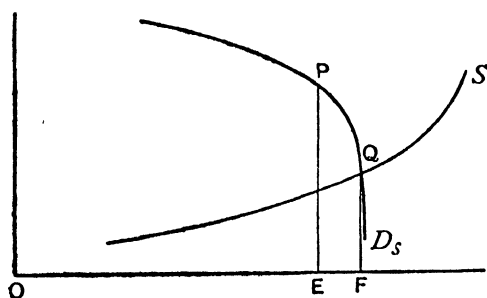

FIG. 11

rise of prices and fall of real wages will occur. We have suggested (p. 26) that OE represents in a certain sense the optimum level of employment from a short-period point of view.

The point of full employment represents the point beyond which it is impossible for output to expand. But an increase in output may be limited not only by the available supply of labour but also by available plant and equipment. It appears at first sight as though there must be two limits—the point of full employment and the point of full capacity—and that the second may be reached before the first. This view, however, is not formally correct. For at the point of full capacity the demand curve becomes perfectly inelastic and must finally cut the x axis, while the lower reaches of the supply curve must have a positive elasticity and it must finally cut the y axis. Thus if the two curves have not intersected before the volume of employment is reached which corresponds to full capacity they must intersect when it is reached. The point of full employment, therefore, cannot lie beyond the point of full capacity and it is formally correct to say that the upper limit to the possible expansion of output is set by the point of full employment.

Changes in Unemployment

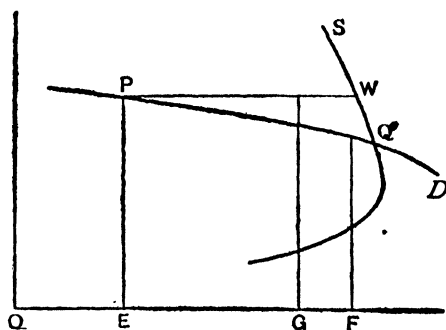In Figure 12 OE represents the actual amount of employment and OF, full employment. At first sight it seems

Fig. 12

natural to say that the amount of unemployment is measured by EF. But this is a quantity which corresponds to nothing in the experience of the community concerned, for no one knows precisely how real wages would move if employment were to expand. Let PW, parallel to the x axis, cut the supply curve S, in W, and let the perpendicular WG cut the x axis in G. Then OG represents the amount of work offered at the ruling real wage rate, PE (or WG). The amount of unemployment represented by EG is the amount of labour, forthcoming at the ruling wage rate, which cannot find employment. This corresponds to a more or less definite element in experience in the actual situation. There are a number of individuals who have not got jobs who are anxious to have them, or who are working part time when they would prefer to work full time. The quantity EG is intended to represent the amount of work which they are anxious to do. Their anxiety may be more or less acute, and, as we have seen (p. 6), a theoretical difficulty is presented by the fact that it may be very acute without being strong enough to break down the resistance to accepting a reduced money wage.

In any actual situation the precise magnitude of EG cannot be discovered, but it corresponds to a common-
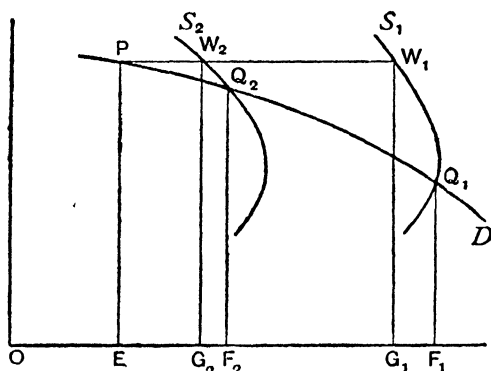

FIG. 13

sense conception, and substantial changes in it are easy to detect.

Changes in unemployment can occur in three quite distinct ways. There will be a reduction in unemployment, first, when there is an increase in employment, due to an increase in effective demand. This would be represented in Figure 12 by a movement of E towards F and of P towards Q. In the case illustrated unemployment would fall off less fast than employment increased, because the fall in real wages accompanying an increase in employment would increase the available supply of labour (p. 8, note). Second, there may be a rise in the supply curve of labour. This will occur when classes of individuals, such as children or married women, are prohibited from working (p. 50) or when there is an imposed reduction in the length of the working day (p. 45). In any given situation a change in the conditions of supply of labour is likely to react upon the level of effective demand, but we will suppose for the sake of illustration that conditions are such that the actual amount of employment remains constant.

In Figure 13, the supply curve is altered from S_1 to S_2. Employment is constant at OE, and real wages at EP.

Full employment is altered from OF_1 to OF_2. Unemployment is reduced by G_2G_1.
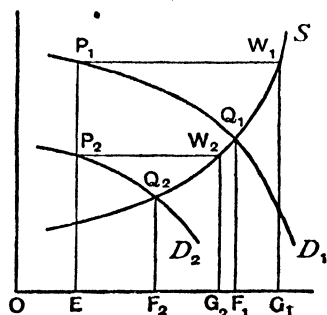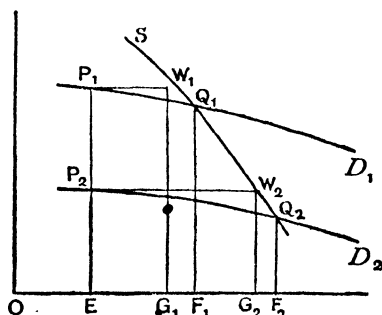

FIG. 14

FIG. 15

Third, there may be a change in the demand curve for labour, such as is due to a change in the degree of monopoly or, in an open system, to a change in money wages or in the exchange rate (p. 20). Once more we will suppose that the reaction upon effective demand is offset, so that employment remains constant.

In Figures 14 and 15 the demand curve falls from D_1 to D_2. Employment is constant at OE. Real wages fall from EP_1 to EP_2. Full employment is altered from OF_1 to OF_2. Unemployment is reduced in Figure 14 by G_2G_1 and increased in Figure 15 by G_1G_2.

It is clear from this analysis that the removal of unemployment may take deleterious as well as beneficial forms and that a situation in which unemployment has disappeared is not in all circumstances to be preferred to one in which it exists.

PART III

THE FOREIGN EXCHANGES[1]

I

THE exchange rate is determined from day to day by supply and demand of home currency in terms of foreign currency. Each transaction is two-sided, and sales are equal, to purchases. Any change in the conditions of demand or of supply reflects itself in a change in the exchange rate, and at the ruling rate the balance of payments balances from day to day, or from moment to moment.

The constituents of the demand for foreign currencies in terms of home currency (or the supply of home currency coming on to the exchange market) may be divided into four groups. Foreign currency may be required (1) in order to pay for goods or services purchased from foreigners (or to make gifts to them), that is, in order to discharge obligations in respect to visible and invisible imports, (2) in order to make loans or purchase securities abroad, (3) for speculative purposes, that is to say, in order to take advantage of an expected reversal in the future course of the exchange rate, (4) in order to remove funds from a country in which political, fiscal or business prospects appear threatening to one in which they seem relatively secure. A fifth group is represented by official exchange dealings, but, since our object is to discover the influences determining the exchange rate in the absence of official

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[1] The subject-matter of this and the following essay has been the battle-ground of innumerable controversies, and I have preferred (apart from one or two specific points) to make no references to other writers, rather than to weary the reader with continual acknowledgments and disagreements. It will be obvious that my main endeavour is to elaborate the hints thrown out by Mr. Keynes in his *Treatise on Money*, Chap. 21.

interference, we shall assume that no official dealings take place, except when special reference is made to them.[1]

Interest on foreign capital invested in the home country is most conveniently treated, in the traditional way, as an invisible import, since it represents a payment for the services of foreign funds borrowed in the past. Day to day fluctuations in the balances of professional exchange dealers may be included in the third group, that is, as speculative transactions, though they do not represent speculation in the popular sense, but are part of the routine business of the exchange market.

If gold is treated as a commodity,[2] and if exchange dealings as an instrument of official policy are ruled out of account, the first four groups cover the whole field. The third and fourth groups shade into each other, and the second shades into both, for exchange prospects and considerations of security influence foreign lending, while funds removed to a foreign country for security will normally be lent at interest, though they may be used to purchase gold or to make a deposit at a bank.[3] Thus the

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[1] An exchange rate which is considered undesirably high can be corrected by direct intervention in the exchange market. But while the monetary authorities can always sell an unlimited amount of their own currency they can only buy as much as their holdings of gold or foreign assets permit. For this reason it is impossible to hold the exchange rate indefinitely above the level determined by a free market without resorting to complete control of all dealings.

[2] In some contexts it is convenient to treat gold movements in a different way (see *General Theory*, p. 335, and *Treatise*, p. 329). In accordance with our present scheme of analysis an increment to the stock of gold inside the country must be regarded as part of home investment and a decrement as disinvestment. This has the advantage of putting the gold-producing countries upon the same footing as the rest, and of putting a reduction in the stock of gold upon the same footing as a reduction in the stock of any other commodity. But no point of principle is involved. An increase in imports accompanied by an equivalent export of gold taken from stocks may be treated either as a decrease in the balance of trade (foreign investment) without any change in home investment, or as home disinvestment, without any change in the balance of trade. Exports of newly-mined gold are in either case treated in the same way as exports of any other commodity.

[3] It is sometimes supposed that an increase in the prospective earnings of capital in one country will lead to an increased desire on the part of foreigners to lend to it, for instance, that a boom on Wall Street 'attracts money' from Europe. But this cannot occur when home and foreign speculators take an equally optimistic view of prospects, for if they do the price of securities will be driven up to such a point as to

motives which govern the demand for currency for foreign lending are inextricably bound up with the motives, which govern exchange speculation and the panic movement of funds. It is therefore most convenient to distinguish only two major categories in the balance of payments—payments in respect to imports and exports, which represent the income account or *balance of trade*, and payments in respect to lending and borrowing (covering the whole of the last three gröups distinguished above) which represent the capital account or *balance of lending*.

Now since the balance of payments always balances it follows that, foï any section of time, payments in respect to the balance of trade must be equal and opposite to payments in respect to the balance of lending. Thus when, over any period, the inhabitants of a country have collectively a surplus of receipts from exports over payments for imports (or *positive* balance of trade)[1] they must, over the same period, on balance be lending (in the broad sense) to the inhabitants of foreign countries an exactly equal sum. Similarly a surplus of imports (or, *negative* balance of trade) must be matched by an equal amount of borrowing. This is merely a truism, but it is a truism which provides the most convenient starting point for the theory of the exchanges.

The same truism can be reached by another route, which it may be instructive to turn aside for a moment to follow. A positive balance of trade is equivalent to investment, from the point of view of the home country, and it has the same influence as investment upon the level of effective demand in the home country. It represents a certain volume of demand for current home output with-

compensate for the improvement in their prospective yield, and no movement of foreign funds will actually take place. Only if the change in opinion leaves foreigners more bullish than home speculators will it lead to an inflow of foreign funds.

[1] The movement of goods and performance of services do not normally synchronise with the payments which are made in respect to them (cf. Haberler, *Theory of International Trade*, p. 18). This fact is of significance in certain contexts, but in order to avoid a cumbrous degree of exactitude we shall speak in what follows of, for instance, an increase in exports relatively to imports as an increase in the balance of trade.

out representing a supply of goods coming on to the home market (for the trade balance represents the home incomes earned by selling to foreigners *minus* that part of home incomes which is expended upon foreigners) and so gives rise to secondary employment. Thus the trade balance is one of the influences which determine the level of income, and consequently the level of saving, in the home country. Since the saving of a community, over any period of time, is equal to its investment for that period, saving is equal to home investment *plus* or *minus* the trade balance. New borrowing at home is equal to home investment, while lending is equal to saving. Therefore foreign lending is equal to the trade balance.

The truism, in the nature of the case, can throw no light upon the manner in which the equality is brought about. It can only tell us that if in fact there is a change in the balance of trade there must be an equal change in the balance of lending. In some circumstances, as we shall find, the two are directly bound together, but in general, though there are always cross-connections between them, they vary in response to independent sets of influences. If I take it into my head to buy a foreign security there is no reason why some compatriot of mine at the same moment should decide to curtail his purchases of imported goods.

The volume of imports and exports is determined by tastes, techniques and resources the world over, and by costs and incomes at home and abroad, which in turn are determined by the levels of money wages and of effective demand. The balance of lending is determined (given wealth and incomes) by relative rates of interest at home and abroad, and by all those considerations which may be lumped together under the heading of 'the state of confidence.' A fall in the home rate of interest (or a rise in rates abroad) or the growth of dismal expectations about home affairs will increase the desire to lend abroad. It is by such diverse influences that the balance of trade and

the desire to lend are determined, and equality between them is preserved not by any natural tendency for the, two to vary consonantly, but by the mechanism of supply and demand. The theory of the exchanges may be regarded as the analysis of the manner in which movements of the balance of trade and the balance of lending are equated to each other.

2

A change in the desire to lend abroad will tend to alter the exchange rate. The reaction upon the balance of trade of an alteration in the exchange rate must be examined at some length. Suppose that, after a certain exchange rate has been in force for some time, the amount which the inhabitants of the home country desire to lend abroad increases. At the ruling exchange rate the demand for foreign currency exceeds the supply and the exchange rate consequently falls. This has the effect of making home-produced goods appear cheaper to foreigners and so increasing the volume of exports. If the physical volume of exports increases their home price cannot fall, therefore the value of exports in terms of home currency must increase. But the effect on imports is more complicated. Foreign goods are now dearer at home, and while the physical volume of imports purchased out of a given income will decline, total expenditure upon them may increase. Thus a decline in the exchange rate will not necessarily increase the balance of trade. If the value of imports (reckoned in home currency) increases by more than the value of exports, then a fall in the exchange rate will reduce the balance of trade.

The argument may be treated in terms of four elasticities: the foreign elasticity of demand for exports, and the home elasticity of supply (which is influenced by the home elasticity of demand for exportable goods), the foreign elasticity of supply of imports and the home elasticity of demand for imports (which is influenced by the home

elasticity of supply of rival commodities).[1] For brevity we may speak of the demand for imports as 'home demand,' the demand for exports as 'foreign demand,' and so forth.

The actual change in imports and in exports which will come about as the result of a change in the exchange rate will depend partly upon the reaction on the demand for imports, and on the supply of exports, of a change in the balance of trade itself. For instance, an increase in the balance of trade leads to an increase in home incomes, and consequently to an increase in expenditure upon imported goods; an increase in exports, or in home manufactures rival to imports, may lead to an increased importation of raw materials, while increased expenditure upon home-produced goods may raise the supply curve of exports. But these effects influence the magnitude, not the direction, of the change in the balance of trade consequent upon a fall in the exchange rate,[2] for the secondary effects follow from the change in home incomes due to the change in the balance of trade, and if the balance of trade does not alter the secondary effects cannot occur. It is therefore legitimate to discuss the initial effect upon the balance of trade in terms of the four elasticities, abstracting from the change in home incomes.

Let us first consider the export side of the balance sheet. As we have seen, a fall in the exchange rate leads to an increase in the value of exports in terms of home currency. The extent of the increase depends upon the elas-

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[1] It assumed throughout this and the following essays that elasticities of supply are positive and of demand negative. Discussions of the magnitude of elasticities must be taken to refer to their numerical, not their algebraical value.

[2] This is not perfectly accurate, for qualitative differences between different types of goods and of expenditure from different types of income may introduce complications into the simple analysis here set out. For instance, suppose that the initial effect of a fall in the exchange rate is to increase the value of both exports and imports to the same extent, while export goods require a higher proportion of imported raw materials than the home goods whose output declines when expenditure upon imports increases. Then the initial effect of a fall in the exchange rate is to leave the balance of trade unaltered while the final effect is to reduce it. The increase in home incomes due to the increase in exports is then less than the reduction due to the increase in imports.

ticity of foreign demand (which must be reckoned in terms of foreign currency). The increase in the value of exports will be smaller the smaller is the foreign elasticity of demand (given the home elasticity of supply). In the limit, if the foreign demand is perfectly inelastic there will be no increase in the volume of exports and consequently no increase in their value.

Next consider the influence of home elasticity of supply. If home supply is perfectly inelastic the volume of exports does not alter, their foreign price is unchanged and the value of exports increases in proportion to the fall in the exchange rate. If home supply is perfectly elastic, the home price is constant and the price to foreigners falls in proportion to the fall in the exchange rate. If the elasticity of home supply lies between zero and infinity the home price of exports is raised by an increase in their volume, and their price to the foreigner consequently falls less than in proportion to the fall in the exchange rate.

If the foreign elasticity of demand is equal to unity, so that expenditure is constant in terms of foreign currency, the value of exports is independent of the home elasticity of supply and increases in proportion to the fall in the exchange rate. If the foreign demand has less than unit elasticity, the increase in the value of exports will be greater the smaller is the increase in their physical volume, that is, the smaller is their elasticity of supply. Thus, when the foreign demand has less than unit elasticity the maximum possible rise in the value of exports is that which is brought about when their elasticity of supply is zero. The value of exports then increases in proportion to the fall in the exchange rate. So long as the foreign demand has less than unit elasticity any increase in the physical volume of exports means that their value increases less than in proportion to the fall in the exchange rate. On the other hand, when the foreign demand has an elasticity greater than unity, an increase in the volume of exports leads to an increase in the foreign expenditure upon them, and the value of

exports increases more than in proportion to the fall in the exchange rate. The increase in the value of exports is then greater the greater is the elasticity of home supply. In short, a high elasticity of home supply tends to reduce or to enhance the increase in the value of exports induced by a fall in the exchange rate according as the foreign elasticity of demand is less or greater than unity.

The minimum effect of a fall in the exchange rate upon the value of exports is produced when the foreign demand has zero elasticity. There is then no increase in exports. The maximum effect is produced when a perfectly elastic foreign demand is combined with a perfectly elastic home supply. The increase in the value of exports is then indefinitely great.

We must now consider the import side of the balance sheet. The value of imports in terms of home currency will increase or diminish according as the elasticity of demand is less or greater than unity.

If the foreign supply is perfectly elastic, so that the foreign price of imports is constant, then their home price will rise in proportion to the fall in the exchange rate; while if the foreign supply is less than perfectly elastic a curtailment of output will cause a fall in the foreign price, so that the home price rises by less than the fall in the exchange rate. It can be seen, therefore, that when the home demand has less than unit elasticity, the value of imports will rise by more, and when it has greater than unit elasticity, will fall by more, the greater is the foreign elasticity of supply.

A fall in the exchange rate produces the maximum increase in the value of imports when home demand is perfectly inelastic. In this case the physical volume of imports is constant, their foreign price is unchanged, and both their price and their value in home currency are increased in proportion to the fall in the exchange rate. The maximum decrease is produced when a perfectly elastic home demand is combined with a perfectly elastic foreign supply. ∙In this case imports are reduced to zero.

We must now combine the two sides of our balance sheet. The relations between the various factors in the problem are complicated,[1] but some simple generalisations can be made. So long as the home demand for imports has more than unit elasticity, a fall in the exchange rate must increase the balance of trade, for the value of imports falls, while the value of exports is at worst constant. If the home demand for imports has less than unit elasticity, the balance of trade, will still increase if there is a sufficient increase in the value of exports, but if the elasticity of foreign demand for exports is not sufficient to compensate for a low elasticity of home demand, then a fall in the exchange rate will reduce the balance of trade.

Before proceding further, the relative magnitudes of the values of imports and exports must be considered. For instance, if the elasticities are such that a fall in the exchange rate brings about an equal proportional increase in the value both of imports and of exports, then if imports were equal to exports in the first instance, so that the balance of trade was zero, it will remain zero when the exchange falls. If it was positive in the first instance, it will increase, for an equal proportional increase in exports

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[1] The general relationships can be expressed mathematically. Let I be the quantity of imports, E of exports, p the home price of imports, and q the home price of exports. Let ϵ_h and ϵ_f be respectively the elasticities of home demand for imports and of foreign demand for exports, η_h and η_f the elasticities of home supply of exports and of foreign supply of imports. Consider the effect of a small fall in the rate of exchange in the proportion k. Let the home price of exports rise by δq. Then the fall in the foreign price of exports is:

$$q - (1 - k)(q + \delta q) = kq - \delta q, \ k \text{ being small.}$$

We now have

$$\eta_h = \frac{\delta E}{E} \bigg/ \frac{\delta q}{q},$$

and

$$\epsilon_f = \frac{\delta E}{E} \bigg/ k - \frac{\delta q}{q}.$$

In the same way,

$$\eta = -\frac{\delta I}{I} \bigg/ k - \frac{\delta p}{p}$$

and

$$\epsilon_h = -\frac{\delta I}{I} \bigg/ \frac{\delta p}{p}.$$

The increase in the balance of trade is $(E\delta q + q\delta E) - (I\delta p + p\delta I)$, which can be reduced to:

$$k \left\{ Eq \frac{\epsilon_f(1 + \eta_h)}{\epsilon_f + \eta_h} - Ip \frac{\eta_f(1 - \epsilon_h)}{\eta_f + \epsilon_h} \right\}.$$

and imports entails a larger absolute increase in exports if exports exceeded imports in the first instance. If the balance of trade was negative in the first instance it will be reduced by the fall in the exchange.[1] When the balance of trade is zero in the first instance, then if the elasticity of foreign demand for exports is greater than unity, a fall in exchange rate must increase the balance of trade, for the value of exports is increased more than in proportion to the fall in exchange rate, while in the worst case, where home demand is perfectly inelastic, the value of imports is increased only in proportion to the fall in exchange rate. If the elasticity of foreign demand for exports is less than unity, the balance of trade will still increase provided that the elasticity of home demand is sufficient to compensate for the low elasticity of foreign demand for exports.

It is now clear that the balance of trade may increase with a fall in the exchange rate even if the elasticities of foreign and home demand are both less than unity. In the simple case, where trade is balanced in the first instance, and the elasticities of home and foreign supply are both infinite, the balance of trade will increase or diminish according as the sum of the elasticities of home and of foreign demand is greater or less than unity, that is, according as the deficiency below unity of the one is more or less than offset by the excess above zero of the other.[2]

[1] The effect of inequality between Eq and Ip (in the notation of the foregoing footnote) can be shown most simply in the case in which the elasticities of foreign and home supply are both infinite.

When η_f and η_h are both equal to infinity, the increase in the balance of trade becomes:

$$k\{Eq\,\epsilon_f + Ip\,\epsilon_h - Ip\}$$

$$\text{or } kEq\left\{\epsilon_f + \epsilon_h\,\frac{Ip}{Eq} - \frac{Ip}{Eq}\right\}$$

It follows that, for the balance of trade to increase with a fall in exchange rate, it is a sufficient, though not a necessary, condition that the elasticity of foreign demand should exceed the ratio of imports to exports.

[2] Cf. A. P. Lerner, *The Economics of Control*, p. 377. In this case not only are η_f and η_h both infinite, but also Eq is equal to Ip, so that the expression for the increase in the balance of trade becomes:

$$k\,Eq\{\epsilon_f + \epsilon_h - 1\}$$

which is positive or negative according as $\epsilon_f + \epsilon_h$ is greater or less than unity.

The repercussions of a change in the balance of trade upon the home demand for imports and supply of exports must be brought into account when the direction of the change has been discussed in terms of the four elasticities. The final change in the balance of trade, in either direction, will be smaller, the greater are the change in demand for imports and the change in supply of exports brought about by the changes in home activity and expenditure which are due to the initial change in the balance of trade. Further, since foreigners are impoverished or enriched by a decrease or increase in the balance of trade of the world with the home country, there is an additional secondary reaction upon the foreign demand for exports, which also tends to mitigate the change in the home balance of trade.

If, at a given exchange rate, the balance of trade falls short of the balance of lending the exchange depreciates. Under favourable conditions this leads to a sufficient increase in the balance of trade to prevent any further fall in the exchange rate. The most favourable conditions from this point of view are, as we have seen, those in which there is perfectly elastic foreign demand and home supply of exportable goods. These conditions prevail as between countries on the gold standard. In the home country gold is on sale at a fixed price, while transport costs are very low and do not rise, except in extreme circumstances, with an increase in the volume of the commodity handled. Supply is therefore perfectly elastic under normal conditions. In foreign countries demand is perfectly elastic at a fixed price. Any tendency for the exchange rate to fall will therefore lead to an indefinitely large export of gold. Similarly home demand and foreign supply are perfectly elastic, so that any rise in the exchange rate would lead to an indefinitely large import of gold. It is for this reason that movements in the exchange rate cannot occur (beyond the limits set by transport costs) so long as the gold standard is maintained.

Other items in the trade balance have certain peculiar

features of their own. Interest on foreign capital which is fixed in terms of home currency represents an export of which the value cannot increase in response to a fall in the exchange rate[1] (though, if debtors are distressed, the reduction in the burden upon them brought about by a rise in the exchange value of their currency may have an important effect in preventing default). For a country in whose total exports this item is an important element, the beneficial effect upon the balance of trade of a fall in the exchange rate is *pro tanto* diminished. From the point of view of a debtor country, interest payments fixed in terms of the creditor's currency represent an import which rises in value in proportion to a fall in the exchange rate,[2] and if such obligations are considerable (and default is not contemplated) exchange depreciation may be extremely dangerous to the balance of trade. Obligations fixed in terms of the debtor's currency represent, from the creditor's point of view, an export whose value rises in proportion to the fall in the exchange rate.[3] They tend, therefore, to make the reaction of depreciation upon the balance of trade favourable. From the debtor's point of view they represent an import which is unaffected by a fall in the exchange rate,[4] and so far as their influence goes, the reaction of depreciation upon the balance of trade is neutral.

A country whose main exports are manufactured goods in which it has no monopoly will normally enjoy a fairly elastic foreign demand, combined, except in boom conditions, with a highly elastic home supply. Its exports will therefore respond favourably to a fall in the exchange rate. On the other hand, if its imports consist mainly of food and raw materials which cannot be produced at home, the

[1] Obligations to the home country fixed in home currency may be regarded from a formal point of view as an export for which the foreign demand is perfectly inelastic.

[2] They may be regarded as an import for which the home demand is perfectly inelastic.

[3] They may be regarded as an export of which the home supply is perfectly inelastic.

[4] They may be regarded as an import for which the elasticity of demand is unity.

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demand for imports is probably inelastic, while if it does not represent a predominant part of the world market the foreign supply will probably be highly elastic. The effect of depreciation upon imports is then unlikely to be favourable, and the benefit to the balance of trade of an increased value of exports may be cancelled out by an increased value of imports.[1] Moreover, if the balance of trade does tend to increase, the extent of the increase will be limited by the increased importation of raw materials which results from increased activity.

A country which is dependent upon the production of commodities (especially raw materials) of which it provides a predominant part of the world supply will normally find the demand for its exports relatively inelastic, for it has no rivals at whose expense its sales can be increased, and it is faced with the demand for each commodity as such. In this case an inelastic home supply will be a source of strength.[2] Countries of this type normally import manufactured goods for which the demand is likely to be relatively elastic, compared to the demand for foodstuffs. In respect to imports, therefore, the effect of depreciation upon the balance of trade is unlikely to be adverse.

In any given situation, with given wages, there will be, for any one country, a certain rate of exchange at which its balance of trade is at a maximum. This may be called the *optimum* exchange rate. It is the 'optimum' rate in a strictly limited sense, for a fall in the exchange rate is likely to raise the price of imports relatively to exports, thus reducing real income per unit of output in the home country,[3] so that the rate which maximises the trade balance is by no means necessarily the most desirable rate from

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[1] Great Britain in 1931 escaped from the dangers of this situation because her depreciation was mainly *vis-à-vis* rival manufacturing nations, while parity was maintained with countries responsible for a high proportion of her sources of raw materials.

[2] For instance, the remarkable steadiness of Australia's output of wool was an important factor in the benefit which she derived from depreciation in 1931. In default of a naturally inelastic supply monopolistic restriction schemes are widely resorted to by raw-material-producing countries.

[3] See below, p. 164.

every point of view. Moreover, a change in the exchange rate, of one of the major countries produces so many reactions upon the rest of the world, and such far-reaching economic and political effects, that it would be absurd to treat it merely in terms of elasticities of supply and demand. But such treatment is a necessary part of the more general discussion of exchange problems, and it is to this narrow sphere that the present analysis is confined.

If the exchange rate stands at the optimum level, any chance fall will precipitate a progressive decline, for each fall in the rate reduces the trade balance and promotes a further fall. In the absence of control, the exchange rate is stable only so long as it stands above the optimum level. But the value of the optimum rate largely depends upon the length of the run which is being considered. From the point of view of very short-period reactions to a fall in the exchange rate, both the foreign elasticity of demand for exports and the home elasticity of demand for imports are likely to be very low (apart from gold), even when over a longer run they would prove to be great, for the fall in the price of the one and rise in the price of the other takes time to produce its effect upon the decisions of purchasers, while, if prices are agreed in terms of the exporter's currency, the force of inertia (and prearranged contracts) delays the rise in the value of exports.[1] Thus it appears at first sight that from the point of view of a very short run the exchange rate can never be above the optimum, and that any country which has abandoned the gold standard must be in chronic danger, no matter how strong its long-period position, that the smallest increase in the balance of lending will precipitate a sudden collapse in the exchange rate.

[1] If prices are agreed in terms of the importer's currency the short-period reaction of a fall in the exchange rate is favourable. For import prices fail to rise, so that inelastic home demand is innocuous, while, in the first instance, the value of exports rises in proportion to the fall in the exchange rate. When the Belga was devalued exporters were urged to continue to charge the same foreign prices and not to increase their output. The effect upon the balance of trade is the same, in such a case, as though home supply were perfectly inelastic.

But against this danger there are two important safe-guards. So long as any country in the world adheres to the gold standard there is one commodity for which even the short-run demand is perfectly elastic, while if there is a market in gold in the country whose exchange is falling the supply of this export will be highly elastic, though less elastic than when it is officially on offer at a fixed price.[1] Exports of gold will thus serve as a stop-gap, and prevent the exchange rate from collapsing at a breath.

Further, a fall in the exchange rate which is not expected to last will call professional speculators into action. Purchases of the depreciated currency, representing a form of foreign borrowing, will bridge the gap in the balance of payments and prevent the exchange rate from falling beyond the level at which it is expected later to come to rest. Thus time will be allowed for a moderate fall in the exchange rate to produce its effect upon the balance of trade, and a slight fall will not necessarily lead to an immediate collapse.

On the other hand, as is only too well known, if specula-tors read a slight fall as a sign that a further fall is to be expected, a violent increase in foreign lending (in the wide sense) will take place and the balance of trade will have no time to react to an initial fall in the exchange rate before a further fall takes place. In this case only official interven-tion can prevent a sudden collapse.

What happens if there is no intervention, while foreign lending remains constant or increases as the exchange rate falls below the level of the short-period optimum? The rate is then sent hurtling towards zero. But on its way thither it must necessarily pass through a pessimum point (at which the balance of trade is a minimum) and come to rest somewhere below it. For a sufficiently violent rise in the price of imports must ultimately choke demand, and even if exports fail to react, in the flurry of

[1] See Einzig, *Bankers, Statesmen and Economists*, p. 86.

the moment, the value of imports must somewhere begin to fall off.

3

A change in the desire to lend abroad can bring about a change in the balance of trade (and consequently in the actual rate of lending) only by way of its effect in altering the exchange rate. But a change in the balance of trade produces a direct effect upon the balance of lending. The rate of saving in the home country exceeds or falls short of the rate of home investment according as the balance of trade is positive or negative. In the normal way a part of the increase in the wealth of individuals in the home country represented by home saving will be used to acquire foreign securities or to make loans abroad. Thus, when the balance of trade increases, and home saving consequently increases, this in itself will lead to an increase in foreign lending. Similarly, when the balance of trade falls off, lending by the world to the home country is directly increased. To look at the same thing in another way, if the balance of trade falls off, there is an increase in the excess of the rate at which home securities (representing borrowing for home investment) are coming on to the market over the rate at which wealth at home is accumulating, while, at the same time, in the rest of the world there is an increase in the excess of the rate at which wealth is accumulating over the flow of new securities, and the world is inclined to buy home securities at a greater rate than before.

If the world capital market were perfect, so that owners of wealth, the world over, were completely indifferent as between home and foreign securities, then, when the home balance of trade falls off, the excess new savings of the world would be devoted to buying the excess of new home securities over new home savings, without any change in relative interest rates, and the rate of exchange would remain in equilibrium in spite of the fall in the balance of trade.

This is normally the case as between different parts of the same country.

But the international capital market is not perfect, and, if foreigners are to be attracted to buy home securities at an increased rate, the home rate of interest must rise relatively to the foreign rate. If the home rate of interest does not rise sufficiently, foreign lending to the home country will fail to increase by as much as the balance of trade has fallen, and the rate of exchange will consequently fall.

4

We must now consider the effect of a change in the home rate of interest upon the rate of exchange. Suppose that a rise in the home rate of interest occurs, other things remaining the same. A rise in the home rate of interest produces its effect upon the exchange in three stages.

The first stage is represented by the additional foreign borrowing (or reduction of lending) which is produced by a rise in the relative rate of interest at home. The increment of borrowing may be divided into two parts, a small increase in the share of world savings devoted to the home country, which will persist (apart from unfavourable reactions upon confidence) so long as the rise in the relative home rate is maintained, and a larger, non-recurrent movement due to the transfer of funds, formerly held abroad, to the home country. Each transfer can only affect the exchange rate as it is made, and to maintain a given volume of transfers over an appreciable length of time the relative rate of interest would have to rise continuously. Thus the balance of payments is not in equilibrium to a given exchange rate and interest rate unless no transfers are taking place.[1]

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[1] Mr. Sayers ('Japan's Balance of Trade,' *Economica*, February 1935, p. 52) suggests that the exchange is in equilibrium when no short-term lending or borrowing is taking place. For practical purposes short-term borrowing provides a useful index of the purely transfer element in the international movement of funds, though the two are not completely identical.

Equilibrium, in the sense that no transfer borrowing or gold movements are taking

There is here a close analogy to gold movements, which also constitute a symptom of disequilibrium in the balance of payments. If the home authorities are subject to the legal obligations of the gold standard or, under influence of more general considerations, desire to maintain a given exchange rate it is the objective of their policy to establish equilibrium in the balance of payments at the exchange rate which they desire to establish, that is to say, to create a situation in which neither gold movements nor transfer lending are taking place at the desired exchange rate.

The second stage in the operation of the rate of interest is its effect upon the balance of trade. A rise in the home rate of interest will curtail investment and so lead to a decline in activity and incomes in the home country. Expenditure upon imports will therefore fall off. Foreign export industries will contract, and the consequent decrease of incomes and expenditure in the rest of the world will reduce the demand for goods exported by the home country. But a part of the reduction in foreign incomes will be subtracted from saving, and even if the supply price of exports in the home country is unaffected it is impossible that exports should be curtailed to the same extent as imports. Moreover, the supply price of a given volume of exports is likely to be reduced, for exportable goods are partly consumed at home and a reduction in home demand will increase the supply available for export,

place, is not the same thing as full equilibrium. Full long-period equilibrium of the balance of payments does not obtain so long as any lending or borrowing is taking place at all. For so long as borrowing is taking place the invisible imports represented by interest payments are mounting up, and as time goes by persistent borrowing will lead, other things equal, to a gradually falling balance of trade. (If, as sometimes occurs, the borrowing corresponds to home investment which would not have taken place without it, other things are not equal, for increased capital equipment will have its reaction upon the other items in the balance of trade.) Full long-period equilibrium is reached only when investment and saving are equal to zero, and imports are equal to exports—a state of affairs which has never been attained in actuality. The present discussion is not concerned with these remote effects, and must be regarded as applying to a length of run within which the accumulation of interest payments is small relatively to current borrowing.

while services common to all industries, such as transport, are likely to become cheaper to the exporters when the total demand for them is reduced. Thus, in spite of the decrease in foreign demand, the volume of exports may actually increase. In short, a decline of effective demand at home tends to decrease imports relatively to exports and so to increase the balance of trade.

Equilibrium with the given exchange rate is reached when, at a constant rate of interest, the balance of trade, excluding gold, is brought to equality with the balance of recurrent lending, and no transfer of funds or movement of gold is taking place. But the position is only attained at the expense of unemployment at home, and any reduction in the rate of interest, by stimulating activity, would set up a tendency for the exchange to fall. The third stage is not reached until increased unemployment has brought about a fall in money wages in the home country.

The effect of an all-round reduction in money wages in the home country upon the balance of trade is precisely similar, apart from obligations which are fixed in terms of home currency, to the effect of a corresponding fall in the exchange rate, for both represent a decline in home incomes and prices measured in terms of foreign currencies. The effect upon the value of imports and of exports in terms of foreign currency is the same for a fall in home wages as for a fall in the exchange rate, while the home purchasing power of a given amount of foreign currency increases equally in each case. Obligations fixed in terms of home currency introduce a difference between the two, for while these are unaffected by a fall in the exchange rate, the real burden of payments, and the real value of receipts, are increased by a fall in home wages.[1] There is a further difference between the effect of pressure upon the exchange

[1] This applies equally to internal and external obligations, and the increase in the share of rentiers in the national income, brought about by a fall in money wages, may have some reaction upon the demand for imports, which would introduce a further difference between the effect on the balance of trade of a fall in money wages and of a corresponding fall in the exchange rate.

rate and of pressure upon the level of money wages which is of the utmost practical importance. While a fall in the exchange will have an automatic and equal effect on the relationship of all home prices to foreign prices, a fall in money wages is never spread evenly over all industries and relative prices inside the home country are never unaffected by it. But for the purposes of our present formal treatment we will consider a case in which the unemployment caused by a rise in the rate of interest brings about an equal proportionate fall in all wages rates.

Just as, with given money wage rates, there is an optimum exchange rate, at which the balance of trade is at a maximum, so, with a given exchange rate, there is an optimum level of money wages. In circumstances in which a fall in the exchange rate would lead to an increase (in terms of home currency) in the value of imports greater than the increase in exports (apart from monetary obligations[1]), an equivalent fall in wages would lead to a decline in the value of exports greater than the decline in value of imports. In such circumstances it is a rise, not a fall, in the level of wages which would redress the balance of payments.[2] But we may suppose for our present purpose that the pre-existing level of money wages was above the optimum in this sense. A fall in money wages will then increase the balance of trade corresponding to a given level of effective demand at home. If the interest rate is maintained at its higher level after wages have fallen the exchange will tend to appreciate; the rate of interest may

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[1] A fall in the exchange rate will have a more favourable effect upon the balance of trade (reckoned in terms of home wage units) than a corresponding fall in wages where payments to foreigners fixed in terms of home currency are an appreciable element in imports, and a less favourable effect when receipts paid in terms of home currency are an appreciable element in exports.

[2] If the exchange has once been allowed to fall below its long-run optimum level, the authorities are landed in an extremely awkward situation. For, while a rise in the rate of interest will produce a beneficial effect upon the exchange at the first stage of its operation and, by reducing employment, at the second stage, its effect at the third stage will make matters worse than ever. In such a case curtailment of imports (by tariffs and so forth) and of foreign lending, combined with direct intervention in the exchange market, will provide the only remedy.

then be lowered and a recovery of employment allowed to take place.

It is in this way that a tendency for the exchange rate to alter can be offset by appropriate changes in the home rate of interest.

5

It is now obvious that there is no one rate of exchange which is the equilibrium rate corresponding to a given state of world demands and techniques. In any given situation there is an equilibrium rate corresponding to each rate of interest and level of effective demand, and any rate of exchange, within very wide limits, can be turned into the equilibrium rate by altering the rate of interest appropriately. Moreover, any rate of exchange can be made compatible with any rate of interest provided that money wages can be sufficiently altered. The notion of *the* equilibrium exchange rate is a chimera. The rate of exchange, the rate of interest, the level of effective demand and the level of money wages react upon each other like the balls in Marshall's bowl, and no one is determined unless all the rest are given.[1]

It will be observed that in the foregoing argument the operations of the gold standard are treated in the same terms as the workings of so-called free exchanges. The only difference between the two is that under the gold standard the authorities are committed to one particular exchange rate so that the equilibrium of the balance of payments must be preserved in face of changing conditions entirely by inducing changes in the level of incomes, and not at all by allowing variations in the exchange rate, while under free exchanges the authorities have some measure of latitude in their choice between the two methods of adjustment.

For a country in which money wages do not readily

[1] One more ball in the bowl is represented by expectations as to the future course of the exchange rate; see p. 148.

yield to the pressure of unemployment the gold standard can be maintained, in an era of rapid change, only by means of recurrent periods of severe unemployment,[1] and it is the realisation of this fact which has in recent years so much impaired the popularity of the gold standard.

[1] The monetary history of Great Britain between 1925 and 1931 is the history of a struggle between the level of money wages and the rate of exchange. It was appropriate that the final collapse of the gold standard should have been brought about by a protest against cuts in pay.

BEGGAR-MY-NEIGHBOUR REMEDIES ·FOR UNEMPLOYMENT

For any one country an increase in the balance of trade is equivalent to an increase in investment and normally leads (given the level of home investment) to an increase in employment.[1] An expansion of export industries, or of home industries rival to imports, causes a primary increase in employment, while the expenditure of additional incomes earned in these industries leads, in so far as it falls upon home-produced goods, to a secondary increase in employment. But an increase in employment brought about in this way is of a totally different nature from an increase due to home investment. For an increase in home investment brings about a net increase in employment for the world as a whole, while an increase in the balance of trade of one country at best leaves the level of employment for the world as a whole unaffected.[2] A decline in the imports of one country is a decline in the exports of other countries, and the balance of trade for the world as a whole is always equal to zero.[3]

In times of general unemployment a game of beggar-my-neighbour is played between the nations, each one endeavouring to throw a larger share of the burden upon the others. As soon as one succeeds in increasing its trade balance at the expense of the rest, others retaliate, and the total volume of international trade sinks continuously, relatively to the total volume of world activity. Political, strategic and sentimental considerations add fuel

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[1] See below, p. 159, note, for an exceptional case.

[2] Unless it happens that the Multiplier is higher than the average for the world in the country whose balance increases.

[3] The visible balances of all countries normally add up to a negative figure, since exports are reckoned f.o.b. and imports c.i.f. But this is compensated by a corresponding item in the invisible account, representing shipping and ₁andling costs.

to the fire, and the flames of economic nationalism blaze ever higher and higher.

In the process not only is the efficiency of world production impaired by the sacrifice of international division of labour, but the total of world activity is also likely to be reduced. For while an increase in the balance of trade of one country creates a situation in which its home rate of interest tends to fall, the corresponding reduction in the balances of the rest tends to raise their rates of interest, and owing to the apprehensive and cautious tradition which dominates the policy of monetary authorities, they are chronically more inclined to foster a rise in the rate of interest when the balance of trade is reduced than to permit a fall when it is increased. The beggar-my-neighbour game is therefore likely to be accompanied by a rise in the rate of interest for the world as a whole and consequently by a decline in world activity.

The principal devices by which the balance of trade can be increased are (1) exchange depreciation, (2) reductions in wages (which may take the form of increasing hours of work at the same weekly wage), (3) subsidies to exports and (4) restriction of imports by means of tariffs and quotas. To borrow a trope from Mr. D. H. Robertson, there are four suits in the pack, and a trick can be taken by playing a higher card out of any suit.

Before proceeding any further it is necessary to make a digression, for it has sometimes been denied that the restriction of imports will increase home employment.[1] This view appears to arise from a confusion as to the nature of the classical argument for free trade. The classical argument states that (with certain well-known exceptions) the pursuit of profit will bring about the specialisation of resources and the distribution of trade between nations in such a way that the maximum of efficiency is achieved.

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[1] See *General Theory*, p. 334. Mr. Keynes offers himself as a sacrifice. But (*pace* Sir William Beveridge) it was never the orthodox view that a tariff cannot lead to an increase in employment in the short period; see Pigou, *Public Finance*, p. 224.

Any arbitrary interference with the channels of trade will therefore lead to a decline in efficiency, and a reduction in the amount of output obtained from a given amount of resources. This argument, on its own ground, is unexceptionable. But in the nature of the case it can throw no light upon the division of a given total of employment between nations. It tells us that, with given employment, output per head will be higher when trade is free. It cannot tell us that when one country increases its share in world employment, at the expense of reducing output per unit of employment, its total output will be reduced. Still less can it tell us that employment in any one country cannot be increased by increasing its balance of trade. Indeed it is obvious to common sense that a tax upon imported goods will lead to an increase in the output of rival home-produced goods, just as a tax upon any commodity will stimulate the output of substitutes for it.

The popular view that free trade is all very well so long as all nations are free-traders, but that when other nations erect tariffs we must erect tariffs too, is countered by the argument that it would be just as sensible to drop rocks into our harbours because other nations have rocky coasts.[2] This argument, once more, is unexceptionable on its own ground. The tariffs of foreign nations (except in so far as they can be modified by bargaining) are simply a fact of

[1] The argument is backed up by the contention that 'exports pay for imports,' see, e.g., Beveridge and others, *Tariffs: the Case Examined*, chap. vi. It is admitted that in some circumstances imports may be curtailed without exports falling to an equal extent, but this entails an increase in foreign lending, and it is argued that if foreign lending increases, home investment must decline (*loc. cit.*, p. 57). Now when the imposition of a tariff increases the balance of trade the increase in foreign lending which is required to prevent a rise in the exchange rate is brought about by a fall in the home rate of interest, and this is calculated to increase, not diminish, the volume of home investment. The flaw in the argument consists in overlooking the fact that an increase in home income will increase saving, so that increased foreign lending is not made at the expense of lending at home.

The classical, as opposed to the neo-classical, argument is usually set out upon the assumption that full employment is the normal state, and in the classical system of analysis the question of a beggar-my-neighbour increase in home employment does not arise.

[2] Beveridge, *op. cit.*, p. 110.

nature from the point of view of the home authorities, and the maximum of specialisation that is possible in face of them still yields the maximum of efficiency. But when the game of beggar-my-neighbour has been played for one or two rounds, and foreign nations have stimulated their exports and cut down their imports by every device in their power, the burden of unemployment upon any country which refuses to join in the game will become intolerable and the demand for some form of retaliation irresistible. The popular view that tariffs must be answered by tariffs has therefore much practical force, though the question still remains open from which suit in any given circumstances it is wisest to play a card.

Exchange depreciation and a reduction in the level of money wages lead to an increase in the balance of trade, in the manner which has already been discussed,[1] provided that each stands above the optimum level.[2] A subsidy to exports will increase the balance of trade provided that foreign demand has an elasticity greater than unity,[3] while restriction of imports by quotas will increase the balance of trade provided that home demand has an elasticity greater than unity. These four expedients are thus all limited in their scope. A tariff reduces the volume of imports, and tends to reduce their foreign price, even when home demand is inelastic. Total expenditure by home consumers upon imports, including tax payments, may increase, but the payment to foreigners must be reduced. Tariffs thus provide an expedient for increasing the balance of trade which can still be used when all else fails.

We must now consider the effect upon home employment of an increase in the balance of trade brought about

[1] See page 138.   [2] See p. 146.
[3] When the foreign demand is inelastic (as in Germany in 1922) or restriction of output (as in many raw-material-producing countries in recent years) will increase the balance of trade (cf. p. 146), while at the same time reducing the amount of employment in the export industries, and increasing the ratio of profits to wages in them. In these circumstances, therefore, an induced increase in the balance of trade may be accompanied by no increase, or even a decrease, in the level of employment.

by each of the four expedients. To simplify the discussion we may postulate that the funds necessary for a subsidy are raised, or the receipts from import duties expended, in such a way as not to interfere with the distribution of income or to alter thriftiness in the home country.[1] Each expedient must be supposed to produce its own full effect. For instance, it must not be supposed that the influence of a fall in the exchange rate on the balance of trade is counteracted by a rise in money wages, or that a tariff leads to a rise in the exchange rate.

A fall in the exchange rate, or in money wages, causes a primary increase in employment in export industries, and in industries producing goods rival to imports. For a given increase in the value of exports (in terms of home wage units) the increase in employment will be greater the greater is the elasticity of supply, and for a given decrease in the value of imports it will be greater the greater is the elasticity of foreign supply and the greater is the elasticity of supply in the rival home industries.[3] It is possible that an increase in the balance of trade may lead to no primary increase in employment. For instance, suppose that the elasticity of home supply of export goods is zero and the elasticity of demand for import goods unity. Then a fall in the exchange rate will lead to a proportional increase in the value of exports, without any increase in their volume, and consequently without any increase in employment in the industries producing them,

[1] The manner in which funds are raised or receipts expended is, of course, of the utmost importance, but analysis of the effects of changes in fiscal policy on employment can easily be superimposed upon the analysis here set out. For instance, if receipts from import duties are paid into a sinking fund, or used to relieve taxation on the rich in such a way as to increase their savings, there will be an increase in thriftiness which will counteract the effect upon employment of increased foreign investment.

[3] If the elasticity of demand for imports is less than unity, there will be a primary decrease in employment in these industries, since additional expenditure upon imports will be made at their expense, but in this case a given increase in the balance of trade must entail so much the greater increase in exports.

[3] This generalisation can be made applicable to the exports and imports represented by foreign obligations if the elasticities concerned are treated in the manner suggested in the footnotes to p. 145.

while the value of imports and the output of rival com-
modities will be unchanged.

In the case of a subsidy the primary increase in employ-
ment is in the export industries alone,[1] while in the case of
a tariff the primary increase is in the industries rival to
imports[2] and in the industries benefited by the expenditure
of the receipts from duties.[3] In the case of quotas the
primary increase is in the rival industries alone.

In each case, the increase in incomes due to the increased
balance of trade will lead to secondary employment.
Thus even when there is no primary increase in employ-
ment at all, total employment will increase as a result of
the increased balance of trade. The lower are the elastici-
ties of supply in the industries primarily affected the greater
will be the increase in profits, relatively to wages, in them,
and the smaller the increase in expenditure coming from
them. Thus the secondary increase in employment is
likely to be smaller the smaller is the increase in primary
employment.

We must next consider the effect of the various
expedients upon real income per unit of employment.
Output per unit of employment normally falls off as em-
ployment increases. For a given increase in employment
the decline in output per unit of employment will be greater
in the case of subsidies, tariffs or quotas than in the case of
exchange depreciation or a fall in wages, since advance is
being made upon a narrower front. This is merely another
way of stating the classical argument that the mal-distribu-
tion of resources due to an artificial stimulus of particular
industries leads to a decline in output for a given level of
employment.

The change in income per unit of employment will also

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[1] While there may be a primary decrease in employment in industries whose
costs are raised as a result of the increase in output of export goods or whose receipts
are reduced by the collection of funds for the subsidy.

[2] While there may be a primary decrease in employment in the industries whose
costs are raised.

[3] In general, the more elastic is the demand for imports the larger will be the
increase in the output of the rival industries and the smaller the proceeds of the duties.
Cf. above, p. 160, note.

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be influenced by the effect of the various expedients upon the terms of trade. An improvement in the terms of trade, that is, a rise in the price of exports relatively to the price of imports represents an increase in incomes, per unit of employment, earned in export industries, relatively to the cost of imported commodities. If the total value of imports and of exports is more or less commensurate an improvement in the terms of trade will therefore bring about a rise in the average real income per unit of employment for the country as a whole.

A fall in money wages, which affects all industries equally, is equivalent, as we have seen, to an equal proportional fall in the exchange except in respect to obligations fixed in terms of home currency.[1] Abstracting from them for the moment, we may conduct our discussion in terms of exchange depreciation alone, the argument being made applicable to a fall in wages by means of reckoning prices and incomes in terms of home wage units.

A fall in the exchange rate, which stimulates the output of export goods and reduces the demand for import goods, leads to a fall in the world price of both types of goods, and a rise in the home price. Since the prices of both types of goods move in the same direction it is impossible to say out of hand what the effect will be upon the terms of trade.

The fall in the world price of export goods in the first instance will be greater the less elastic is the foreign demand for them, and the more elastic is the home supply; while the fall in the price of import goods will be greater the more elastic is the home demand and the less elastic is the foreign supply. It can be seen that if the elasticity of foreign demand for exports is equal to the elasticity of foreign supply of imports, while the elasticity of home supply of exports is equal to the elasticity of home demand for imports, the initial effect of a fall in the exchange rate will be to move both sets of prices to the same extent, so that the terms of trade are unchanged. Further, if

the foreign elasticity of supply exceeds the foreign elasticity of demand in the same proportion as the home elasticity of demand exceeds the home elasticity of supply, the terms of trade are unchanged.[1]

In general, each country is more specialised in respect to the goods which it produces than in respect to the goods which it consumes, so that any one country plays a more dominant role in the world supply of those goods which it exports than it plays in the world market for those goods which it imports. In general, therefore, the world demand for the exports of one country is less elastic than the world supply to it of those goods which it imports. So far as the foreign elasticities are concerned, there is thus a strong presumption that a fall in the exchange rate will turn the terms of trade in the unfavourable direction.

Each country imports a large number of commodities which cannot be produced at home, so that the elasticity of demand for imports tends to be low. The elasticity of supply of exports will depend upon the particular types of goods in question, and upon the general state of trade. In slump conditions, such as prevail when the game of beggar-my-neighbour is most in vogue, the elasticity of supply of all commodities, except certain agricultural products, is likely to be high. It is thus only in exceptional cases that the home elasticity of demand can exceed the home elasticity of supply to a sufficient extent to compensate for the excess of the foreign elasticity of supply over the foreign elasticity of demand, and in general a fall in the exchange rate must be expected to cause a deterioration in the terms of trade.

An exceptional case would occur if the home supply of exportable goods were perfectly inelastic. There would then be no fall in the world price of exports, while unless

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[1] Using the notation of p. 142, note, the adverse change in the terms of trade is $\frac{\delta p}{p} - \frac{\delta q}{q}$, which is equal to $k\left(\frac{\eta_f}{\epsilon_h+\eta_f} - \frac{\epsilon_f}{\eta_h+\epsilon_f}\right)$. Thus the change in the terms of trade is adverse or favourable according as $\frac{\eta_h}{\epsilon_h}$ is greater or less than $\frac{\epsilon_f}{\eta_f}$.

either home demand for import goods is perfectly inelastic or the foreign supply of them perfectly elastic, there will be some fall in the price of imports, and the terms of trade will become more favourable when the exchange rate falls. Thus, as we have already seen,[1] for an agricultural country which produces a considerable proportion of the world supply of some commodity, the drawbacks of an inelastic world demand for its exports may be overcome by a sufficiently inelastic home supply. A country for which an inelastic foreign demand is combined with a highly elastic home supply will suffer a serious deterioration in the terms of trade as a result of exchange depreciation.

The importance of the home country in world markets will also affect the result. The change in world prices brought about by exchange depreciation will in general be smaller the smaller is the country concerned, and the narrower will be the range of the possible changes in the terms of trade. A large country is likely to suffer a greater deterioration in the terms of trade, when its exchange depreciates, than a small country, but at the same time it is only for a very large country that a favourable move-ment in the terms of trade can possibly occur, for it is only a large country which can exercise an appreciable influence on the world prices of the goods which it imports.

The effect upon the terms of trade of a fall in money wages differs from the effect of depreciation in so far as there are foreign obligations fixed in terms of home currency. These are unaffected by a fall in the exchange rate, while a fall in wages raises the cost of payments and the value of receipts in terms of home wage units. Thus, in so far as payments fixed in terms of home currency are an appreciable element in invisible imports, the deleterious effect of a fall in wages upon the terms of trade will be greater than the effect of a corresponding depreciation in the exchange, while a given increase in the balance of trade, in terms of wage units, will require a larger fall

[1] P. 146.

in wages, and so entail larger changes in the prices of other imports and exports. In so far as receipts fixed in terms of home currency are an appreciable element in invisible exports, the deleterious effect of a fall in the exchange rate will be greater.

A subsidy to exports leads to a fall in the world price of export goods which will be greater the less elastic is foreign demand and the more elastic is home supply. In so far as the price of import goods is affected at all, it must be raised. The output of export goods is increased, and their price in the home market, in which they are not subsidised, is raised,[1] so that the price of imports which are rival in the home market to exportable goods may be raised. A subsidy to exports therefore causes an unfavourable movement in the terms of trade.[2] In this respect a subsidy is necessarily more deleterious than exchange depreciation or a fall in money wages.

A tariff leads to a fall in the world price of import goods, which will be greater the less elastic is foreign supply and the more elastic is home demand. In so far as it affects the price of exports it must raise them. Raw materials entering into export goods may be subject to duties, while the increase in the output of home goods which are substitutes for imports may raise the price of the exportable goods. A tariff therefore has a favourable effect upon the terms of trade.

Neither a tariff nor a subsidy can normally be applied to the invisible exports and imports (with the exception of shipping services). Where it is possible to increase the invisible balance by means of exchange depreciation without any adverse effect upon the terms of trade (for

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[1] Services such as transport must be regarded as exports in so far as they enter into the production of export goods.

[2] Income per unit of output in the export trades is not reduced, but real income per unit of output for the country as a whole is reduced by the levy of funds to pay the subsidy.

[3] This is known as 'making the foreigner pay the tax.' If foreign supply is perfectly inelastic, price to the home consumer is not raised by the import duty at all and 'the foreigner pays the whole of the tax.'

instance when the main invisible export consists of receipts fixed in terms of foreign currency), the advantage of a tariff, as opposed to exchange depreciation, is *pro tanto* diminished, and the disadvantage of subsidies increased.

The restriction of imports by means of quotas does not have the same effect upon the terms of trade as a tariff, since it leads to a rise in the home price of import goods, while preventing the restriction in home consumption from lowering the foreign price. A quota upon imports has much the same effect as an increase in the degree of monopoly amongst foreign suppliers. It leads to a deterioration in the terms of trade, while the benefit from the raised price to the home consumer, which goes to the exchequer under a tariff, goes to the foreign producers under a quota.

We have so far considered the terms of trade only in the light of the elasticities of home and foreign supply and demand. Any increase in the balance of trade, by whichever expedient it is brought about, will lead to an increase in home incomes and activity. It will therefore raise both the demand curve for imports and the supply curve of exports.[1] But the effect of increased incomes in raising the demand for consumable imports, and the effect of increased activity in raising the demand for raw materials, will normally be far greater than the effect of increased home consumption in reducing the supply of goods available for export. Increased activity is therefore likely to have a larger effect in raising the price of imports than in raising the price of exports, and therefore tells in the direction of worsening the terms of trade. The presumption that the terms of trade will deteriorate as a result of a fall in the exchange rate or of wages is therefore increased, the deterioration due to a subsidy or to quotas is enhanced, and the improvement due to a tariff mitigated, by the effect of increased activity.

The effect of changes in the terms of trade upon income

[1] See p. 139.

per unit of employment must be combined with the effects, discussed above,[1] of the distribution of home activity between different groups of industries. The beneficial effects of a tariff upon the terms of trade may offset the deleterious effects of concentrating output in a narrower group of industries, and in favourable circumstances may even lead to an increase in income per unit of employment. Exchange depreciation and wage cuts occupy the intermediate position on both counts; while subsidies and quotas are the most deleterious, on both counts, of all the expedients for increasing the balance of trade.

The change in real wages which is brought about by the various expedients is not necessarily commensurate with the change in real income per unit of employment, for wage earners may consume goods of various types in different proportions from the average for the country as a whole, while, in the case of a tariff, the benefit to wage earners of the expenditure of tax receipts is not necessarily, or usually, commensurate with the contribution which they make to them. For a given increase in the balance of trade, the rise in the home price of export goods is greatest in the case of a subsidy, and the rise in the price of import goods, and of home goods which are rival to them, greatest in the case of tariffs, while a fall in the exchange rate or in money wages has an intermediate effect upon both sets of prices (prices being calculated in wages units, in the case of a fall in money wages). Thus for a country whose export goods are an unimportant element in the consumption of wage earners the fall in real wages will be least for a subsidy, greater for depreciation, and greatest for tariffs, while for a country which exports food-stuffs and imports the luxuries of the rich the order of preference is reversed. Quotas, which are commonly applied to agricultural commodities and so raise the price of food-stuffs, and which make no contribution to fiscal revenue, bring about the

largest fall in real wages of all the expedients for increasing the balance of trade.

The various expedients have important effects upon the distribution of income and activity between industries within the home country. An increase in the balance of trade is accompanied by a rise in the home price of export goods, or of goods which are rival to imports, or of both together, so that an increase in the balance of trade increases not only activity, but also income per unit of output, in the industries concerned in producing these goods. Now, when the game of beggar-my-neighbour is being hotly played, these industries suffer a decline in incomes relatively to the industries which are not subject to foreign competition,[1] and an improvement in their situation may be regarded as desirable for its own sake, apart from any increase in the total of activity and incomes of the country. This consideration is of particular importance in so far as it affects agricultural commodities, since the agricultural community is in general poorer than the industrial. Any policy which is designed to increase the exports, or reduce the imports, of agricultural commodities has the effect of turning the terms of trade between agriculture and industry inside the home country in favour of agriculture, and so of reducing the inequality in their earnings. Such policies are widely held to be beneficial, in spite of the fall in the average of real wages which they necessarily bring about.[2]

[1] Even in a country so greatly dependent upon foreign trade as Great Britain these industries occupy much less than half the working population, while the Multiplier appears to be normally something in the neighbourhood of 2. Thus a given decline in employment in the foreign trade industries causes an almost equal absolute, and therefore a smaller proportionate, decline in employment in the home trade industries. This is known as 'the problem of the unsheltered industries.'

[2] A fall in the exchange rate, or an all-round reduction in wages, will benefit the export industries even when they bring about no increase, or even a decrease, in the balance of trade, while quotas will always benefit the home industries protected by them, and subsidies the industries which receive them. These expedients may therefore be resorted to in certain circumstances entirely for the sake of the industries concerned, without regard to their effect upon the general level of activity, while tariffs are often designed for the benefit of particular groups without much regard to their incidental effect in improving the balance of trade.

Certain special considerations apply to each of the four expedients. We have treated a reduction in wages as being in general equivalent to a fall in the exchange rate, but there is one difference between the two which is of the utmost importance. Even if obligations to foreigners fixed in terms of home currency are unimportant, internal indebtedness still has to be considered. A cut in wages leads to a redistribution of real income in favour of the fixed-income classes, and an increase in the burden of indebtedness within the home country. For this reason a cut in wages is undesirable so long as any other expedient will serve, even if it can be brought about smoothly without the distress and wastage of industrial disputes, and even if it can be made equal in all industries so as to avoid arbitrary redistribution of income and activity between them.

Depreciation of the exchange rate has the disadvantage of being regarded as a breach of international good faith, while the apprehension of a fall may have serious effects upon the international financial position of the home country.

Tariffs and subsidies bring well-known political evils in their train, from which the more general, automatic and inhuman mechanism of exchange depreciation is comparatively free, while tariffs foster monopoly by violently reducing the elasticity of demand for home goods formerly subject to foreign competition, and so making the gains of monopolisation more tempting to the home producers. Tariffs, it is true, have the advantage that they are selective, and may be devised in such a way as to bring about the minimum decrease in real wages for a given increase in employment, but actually they are not always devised with this end in view.

All expedients are subject to the objection that they are calculated to promote retaliation; indeed this is the very nature of the beggar-my-neighbour game. Which ex-

pedient is the least dangerous from this point of view will depend upon general political considerations.

When a nation, hard pressed in the game, is determined to take a trick, the decision as to which suit it is wisest to play must be taken in the light of all the considerations set out above, as they apply to the particular situation of the nation concerned at the particular moment when the decision is taken.

From an un-nationalist point of view all are equally objectionable, since each is designed to benefit one nation at the expense of the rest. But there are circumstances in which a limited indulgence in them cannot be regarded as a crime. First of all, they may be justified by the plea of self-defence, and secondly they may be used merely to cancel out a benefit to the rest of the world that would otherwise result from the policy of one nation. An increase in home investment in one country tends to increase activity in the rest of the world, and measures designed to protect the balance of trade when home investment increases merely cause a larger share of the reward of virtue to fall to the virtuous nation, while measures which protect the balance of trade when money wages rise at home merely prevent the rest of the world from gaining an advantage, and leave it no worse than before.

PART IV

INDETERMINACY

THEORETICAL economists usually display an extreme anxiety to discover 'determinate' solutions of the problems which they study. Determinacy, for the economist, means that the problem is susceptible of analysis by the methods which he has been brought up to use. When 'causes of "indeterminateness" are said to be detected this is merely another way of saying that a new set of determining forces has been found: forces whose behaviour and manner had not hitherto been reducible to uniformities'.[1] The problem is 'indeterminate' when the specifically economic factors (that is, factors the economist has been accustomed to handle), do not serve to provide a unique solution, so that 'non-economic' factors have to be brought into the story before an answer to the problem can be found. 'Non-economic' factors, such as human error or sentimentality, political disturbances, the state of confidence in the currency, or the strategical position of Trade Unions, are those which cannot easily be fitted into the existing structure of pure economic analysis.

The first task of the analytical economist is therefore to discover determinate problems on which to work. Some writers, brought up in the tradition of 'methodological pessimism'[2] consider this task of such importance that they attempt no other. After counting up the number of equations and the number of independent variables involved in a problem and triumphantly pointing out that the two numbers are equal, so that the solution of the problem is determinate, they are quite content to let the matter rest, without making any attempt to tell us what the solution is.

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[1] Kaldor, *Review of Economic Studies*, February 1934, p. 122.
[2] See my pamphlet *Economics is a Serious Subject*.

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Others, taking a less humble view of their function, are apt to resort to special pleading to show that some problem which they desire to solve can in fact be completely dealt with by the methods at their disposal, and to display un-reasonable hostility to anyone who attempts to maintain the contrary opinion.

This bias in favour of determinateness is certainly very natural. If the problems in the real world are not deter-minate in the economist's sense, predictions about events in the real world cannot be made by means of economic analysis, and economics can never become a science. Each particular event can only be studied after it has occurred, by the methods of the historian. Or, alternatively, the economist must wait for the development of a science of social psychology to supplement his own methods of analysis. To discover too much 'indeterminacy' in the real world would therefore deprive the economist of self-respect, if not of the means of livelihood. But to discover too much 'determinacy' in his theoretical system ought to damage his self-respect quite as much. For it is, after all, the aim of theory to reflect as closely as possible the conditions of the real world, and we all know from daily experience that in the real world many problems are indeterminate in the economist's sense. My neighbour owns a small paddock at the bottom of my garden, which I desire to buy. No one but he can supply what I require, and no one but I wishes to buy from him. The price which will be settled between us cannot be predicted by any purely economic line of reasoning. It will depend on his avarice or sense of fair play, upon my weakness at bluff or ability to appeal to his better nature. If economic theory were to tell me that there is only one price which can rule, I should know very well that economic theory was wrong. Similarly with wage bargaining. It is obvious that the determination of actual wage rates is largely influenced by non-economic factors. But economists are apt to resent the suggestion that marginal productivity

analysis is not sufficient to give a aetermmate answer to the problem.

For instance, when Mr. J. A. Hobson pointed out that marginal productivity analysis cannot deal with a situation in which the amount of labour employed must be altered in an appreciable proportion or not at all, he was very severely dealt with by Edgeworth,[1] who delighted to mock at his ignorance of the differential calculus. Mr. Hobson's innocence was no doubt an irresistible temptation to Edgeworth's ' wit, but it is necessary for the mathematical economist to concede to the simple-minded critic that in the real world the minimum feasible change in the amount of labour employed is often a large proportion of the whole, and that when this is the case the principle of marginal productivity cannot be made to provide an exact account of the rate of wages that will be paid.

Another example is provided by a criticism by Mr. Hicks of Pareto.[2] Pareto argues that where the proportions of the factors are fixed by technical considerations the principle of marginal productivity will not suffice to determine the wages of the factors. He gives the example of a silk factory where an addition to the amount of floor-space on which the silk can be spread out adds nothing to the output of silk. 'This,' remarks Mr. Hicks, 'is merely silly.' Now Pareto's example may not be very well chosen. Probably more space for walking about between the pieces of silk would be very useful. But clearly the marginal productivity of any one factor falls off more rapidly as that factor is increased, the others remaining constant, the more rigid are the technical conditions. In the limiting case, where only one combination of factors is technically possible, the marginal productivity of any one factor falls off infinitely rapidly as that factor is increased, and the value of the marginal productivity is not uniquely

[1] *Papers Relating to Political Economy*, vol. i, p. 19, note.
[2] 'Marginal Productivity and the Principle of Variation,' *Economica*, February 1932, p. 86, note.

determined. In this particular case all ended well, for Mr. Hicks was able to show that when the 'factors' are widely defined and when the conditions of supply of factors are brought into the story a determinate value for their prices can be found. But the reader cannot help but suspect that Mr. Hicks' comment upon Pareto arose from over-anxiety to discover a determinate solution for the problem.

These examples are concerned with real wages. To turn to the question of money wages: economists of the most divergent opinions agree that in Great Britain between 1926 and 1931 prices were maintained at a relatively high level by the tenacity of Trade Unions in refusing to accept wage-cuts in the face of severe unemployment. Yet, in the theory by which we were brought up to account for the general level of prices, the bargaining power of Trade Unions never seemed to appear specifically in the equations. Of course, a story could be told of how inexorable economic forces play upon the minds of the Trade Union secretaries in such a way as to force them to decide upon a certain line of conduct. But the story was very long, very complicated and very unconvincing.

It is a great merit in the General Theory of Employment that it allows us to believe that the general level of prices is determined very largely by arbitrary human decisions, and yet saves our self-respect by leaving us such problems as the determination of the level of real wages and the amount of employment to be discussed by the methods of pure economic analysis.

AN ECONOMIST'S SERMON

Economics is the dope of the religious people

CONSIDER the case of a man to-day who has an honest intelligence, a strong social conscience and an independent income.

His intelligence tells him that he has no particular right to enjoy a privileged position. 'Right' is a vague phrase. A doctor has in a sense a right to a motor-car because it makes him do his work better than he could without it. And if he uses it to visit his friends as well as his patients, no harm is done to anyone. But our man is too honest to try to persuade himself that his own comfort really makes very much difference to the amount of benefit that he does to other people. His conscience tells him that he would be doing a good act if he endowed a hospital with his wealth and worked for his living. But his independent income is not easy to give up.

He cannot keep all three—integrity of mind, a quiet conscience, and the privileges of wealth. One must be sacrificed. If he is a saint he sacrifices the wealth—but we will suppose that he is not. If he is a man of no definite religious creed he can keep his mental honesty and his income by sacrificing his conscience. He can say 'I am a selfish individual. I don't pretend to have any better right than anyone else to a comfortable life, but I propose to enjoy it if I can.'

But if he belongs to a definite religion this line of escape is impossible for him. Conscience is more precious than anything else. Without its approval he can have no peace. He will have to sacrifice his honesty of mind instead, and make up arguments to show that it is right for him to be better off than the majority of his neighbours.

Now, it is here that the economist is a godsend to him.

The economist is a self-appointed expert. It is his business to know about these things. A man may have an honest and independent mind and yet take on trust the opinion of experts on a subject that he has not time to master for himself. If the economist tells him it is all right, then he can keep his integrity, his income and his conscience all intact.

One of the main effects (I will not say purposes) of orthodox traditional economics was to fill this want. It was a plan for explaining to the privileged class that their position was morally right and was necessary for the welfare of society. Even the poor were better off under the existing system than they would be under any other. There is a significant passage in the reminiscences of Alfred Marshall.[1] As a young man, a mathematician and philosopher, before he had embarked upon economics, he began to be troubled by social conscience.

> From Metaphysics I went to Ethics, and thought that the justification of the existing condition of society was not easy. A friend, who had read a great deal of what are called the Moral Sciences, constantly said: 'Ah! if you understood Political Economy you would not say that.'

Marshall himself did much to break down the doctrine that no matter how much poverty and distress there may be it is still true that all is for the best in the best of all *possible* worlds. But even in the system of economics as it was handed down by Marshall the main theme is still the justification of the existing system.

I will put forward three examples of the products of traditional teaching: First, the doctrine that increased wealth of the propertied class brings about an automatic increase of income to the poor, so that, if the rich were made poorer, the poor would necessarily become poorer also. A familiar instance is to be found in Mrs. Marcett's

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[1] *Memorials of Alfred Marshall*, p. 10.

Conversations on Political Economy, a popular early nineteenth-century work designed to explain the principles of Political Economy to the masses. Mrs. B. explains to Caroline the subject of Poor Law Relief:

> The greatest evil that results from this provision for the poor is that it lowers the price of labour; the sum which the capitalist is obliged to pay as poor rates necessarily reduces the wages of his labourers, for if the tax did not exist, his capital being so much more considerable, the demand for labour and consequently its remuneration would be greater . . .[1] Where there is capital the poor will always find employment, the demand for labour is therefore proportioned to the extent of capital.[2]

This argument is based upon the postulate of nineteenth-century economic teaching, that an increase in the capital equipment of industry is the result of an increase in thriftiness. An unsophisticated inquirer might wonder how it comes about that a decline in the demand for consumption goods, due to transferring income from the poor who must spend it to the rich who may save it, can possibly lead to an increase in the demand either for the labour or for the capital equipment which is required to make the goods. But he is silenced by appeal to the mysterious Law of Economics which teaches that saving is only another form of spending. This Law, as it happens, entails that unemployment cannot occur, so that, if it held true in fact, 'the poor' would always be fully employed in any case. Mrs. Marcett's argument that the thriftiness of the rich is necessary to provide employment for the poor is therefore a violent contradiction. The whole basis of the argument lies in a simple confusion of thought.

But that is not the concern of our honest inquirer with capital of his own. He can take the word of the experts and rest satisfied. If the experts' arguments do not hold

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[1] *Conversations on Political Economy*, p. 164.   [2] *Op. cit.*, p. 130.

water it is not his business to put them right. And see how comforting their word is. If poor relief did the poor good, the awkward question might arise whether he ought not to contribute to the aid of the poor more than the State demands, or ought not to vote for a government that would demand more. But if even poor relief does the poor positive harm then he can go on enjoying his comfortable life without distress of mind.

My next example is more modern. By a statistical calculation, which has had considerable vogue, it is shown that, if the present national income were equally distributed, even the poorest would be hardly any better off than they are now. This leads to the conclusion that it is no good causing the sacrifice to the rich of redistribution, as it will only reduce everyone to a dead level of poverty. For my own part I have never been able to see the *moral* force of this argument. If the average is so low, it seems to me all the more disgraceful to live above the average standard. But actually this conclusion is found to be of great comfort to the social conscience of the wealthy.

Now, even on the assumption that the aggregate consumption of the nation remains unchanged, the calculation is very hard to believe. A calculation in money values has little meaning—a calculation in terms of productive resources is obviously required—and it is hard to believe that if, for instance, the equivalent of all the domestic servants who would be dismissed from wealthy households after the redistribution of income were turned into attendants at nursery schools, the average of welfare would not be increased. But however that may be, it is impossible to maintain that the aggregate of consumption would in fact be no greater than before, for the thriftiness of the community would be lowered by redistribution, and taking one year with another, the total waste of resources through unemployment would be very much reduced. The aggregate of consumption and the average standard of life would therefore be raised. The statistical argument, like

so many others which provide dope for the conscience of the pious rich, loses its force when the Law that saving is a form of spending has been removed from the statute book.

My last example is taken from a letter tŏ *The Times* of the Bishop of Gloucester. At the time of the 'National Crisis' in 1931 it was considered necessary to introduce emergency measures to balance the budget. In the name of 'equality of sacrifice' an addition was made of 6d. to the income tax and a cut of 10 per cent. in unemployment benefit. In 1934, the budgetary position being favourable, the Archbishop of York published a plea in *The Times* that in the event of a surplus, the restoration of cuts in the allowances of the unemployed should come before any other concessions, including remission of income tax.

To his letter the Bishop of Gloucester replied as follows:[1]

'1. "Unemployment is more than a misfortune for those who are overtaken by it; it is a curse." So he [the Archbishop of York] tells us. I agree, and therefore it seems to me to be the first duty of the Government to do all in their power to reduce the number of unemployed. It is recognized that one of the most fruitful causes of unemployment is excessive taxation, and in particular a high income tax. I am convinced that nothing would ease the situation more at the present time than a substantial reduction of income tax, for it is very largely a tax on industry. We are none of us concerned with the discomforts of those, whether ourselves or others, who are reputed wealthy. But the experience of history tells us that it is always the poorer classes who suffer most from excessive taxation. If a man is compelled to dismiss a certain number of his workmen, it may diminish his profits or comfort, but it ruins the men dismissed.

'2. The result is still more the case if funds thus diverted from industry are used to increase the amount spent in supporting the unemployed, for all money spent in that way