

The General Theory of Employment, Interest and Money

Full text of Gutenberg of Australia's
ebook of the General Theory

By John Maynard Keynes

Chapter 16

SUNDRY OBSERVATIONS ON THE NATURE OF CAPITAL

w/ JLH highlights of text on natural limits of finance

I

An act of individual saving means—so to speak—a decision not to have dinner to-day. But it does not necessitate a decision to have dinner or to buy a pair of boots a week hence or a year hence or to consume any specified thing at any specified date. Thus it depresses the business of preparing to-day's dinner without stimulating the business of making ready for some future act of consumption. It is not a substitution of future consumption-demand for present consumption-demand,—it is a net diminution of such demand. Moreover, the expectation of future consumption is so largely based on current experience of present consumption that a reduction in the latter is likely to depress the former, with the result that the act of saving will not merely depress the price of consumption-goods and leave the marginal efficiency of existing capital unaffected, but may actually tend to depress the latter also. In this event it may reduce present investment-demand as well as present consumption-demand.

If saving consisted not merely in abstaining from present consumption but in placing simultaneously a specific order for future consumption, the effect might indeed be different. For in that case the expectation of some future yield from investment would be improved, and the resources released from preparing for present consumption could be turned over to preparing for the future consumption. Not that they necessarily would be, even in this case, on a scale *equal* to the amount of resources released; since the desired interval of delay might require a method of production so inconveniently 'roundabout' as to have an efficiency well below the current rate of interest, with the result that the favourable effect on employment of the forward order for consumption would eventuate not at once but at some subsequent date, so that the *immediate* effect of the saving would still be adverse to employment. In any case, however, an individual decision to save does not, in actual fact, involve the placing of any specific forward order for consumption, but merely the cancellation of a present order. Thus, since the expectation of consumption is the only *raison d'être* of employment, there should be nothing paradoxical in the conclusion that a diminished propensity to consume has *cet. par.* a depressing effect

on employment.

The trouble arises, therefore, because the act of saving implies, not a substitution for present consumption of some specific additional consumption which requires for its preparation just as much immediate economic activity as would have been required by present consumption equal in value to the sum saved, but a desire for 'wealth' as such, that is for a potentiality of consuming an unspecified article at an unspecified time. The absurd, though almost universal, idea that an act of individual saving is just as good for effective demand as an act of individual consumption, has been fostered by the fallacy, much more specious than the conclusion derived from it, that an increased desire to hold wealth, being much the same thing as an increased desire to hold investments, must, by increasing the demand for investments, provide a stimulus to their production; so that current investment is promoted by individual saving to the same extent as present consumption is diminished.

It is of this fallacy that it is most difficult to disabuse men's minds. It comes from believing that the owner of wealth desires a capital-asset *as such*, whereas what he really desires is its *prospective yield*. Now, prospective yield wholly depends on the expectation of future effective demand in relation to future conditions of supply. If, therefore, an act of saving does nothing to improve prospective yield, it does nothing to stimulate investment. Moreover, in order that an individual saver may attain his desired goal of the ownership of wealth, it is not necessary that a *new* capital-asset should be produced wherewith to satisfy him. The mere act of saving by one individual, being *two-sided* as we have shown above, forces some other individual to transfer to him some article of wealth old or new. Every act of saving involves a 'forced' inevitable transfer of wealth to him who saves, though he in his turn may suffer from the saving of others. These transfers of wealth do not require the creation of new wealth—indeed, as we have seen, they may be actively inimical to it. The creation of new wealth wholly depends on the prospective yield of the new wealth reaching the standard set by the current rate of interest. The prospective yield of the marginal new investment is not increased by the fact that someone wishes to increase his wealth, since the prospective yield of the marginal new investment depends on the expectation of a demand for a specific article at a specific date.

Nor do we avoid this conclusion by arguing that what the owner of wealth desires is not a given prospective yield but the best available prospective yield, so that an increased desire to own wealth reduces the prospective yield with which the producers of new investment have to be content. For this overlooks the fact that there is always an alternative to the ownership of real capital-assets, namely the ownership of money and debts; so that the prospective yield with which the producers of new investment have to be content cannot fall below the standard set by the current rate of interest. And the current rate of interest depends, as we have seen, not on the strength of the desire to hold wealth, but on the strengths of the desires to hold it in liquid and in illiquid forms respectively, coupled with the amount of the supply of wealth in the one form relatively to the supply of it in the other. If the reader still finds himself perplexed, let him ask himself why, the quantity of money being unchanged, a fresh act of saving should diminish the sum which it is desired to keep in liquid form at the existing rate of interest.

Certain deeper perplexities, which may arise when we try to probe still further into the whys and

wherefores, will be considered in the next chapter.

II

It is much preferable to speak of capital as having a yield over the course of its life in excess of its original cost, than as being *productive*. For the only reason why an asset offers a prospect of yielding during its life services having an aggregate value greater than its initial supply price is because it is *scarce*; and it is kept scarce because of the competition of the rate of interest on money. If capital becomes less scarce, the excess yield will diminish, without its having become less productive—at least in the physical sense.



I sympathise, therefore, with the pre-classical doctrine that everything is *produced by labour*, aided by what used to be called art and is now called *technique*, by natural resources which are free or cost a rent according to their scarcity or abundance, and by the results of past labour, embodied in assets, which also command a price according to their scarcity or abundance. It is preferable to regard labour, including, of course, the personal services of the entrepreneur and his assistants, as the sole factor of production, operating in a given environment of technique, natural resources, capital equipment and effective demand. This partly explains why we have been able to take the unit of labour as the sole physical unit which we require in our economic system, apart from units of money and of time.

It is true that some lengthy or roundabout processes are physically efficient. But so are some short processes. Lengthy processes are not physically efficient because they are long. Some, probably most, lengthy processes would be physically very inefficient, for there are such things as spoiling or wasting with time. With a given labour force there is a definite limit to the quantity of labour embodied in roundabout processes which can be used to advantage. Apart from other considerations, there must be a due proportion between the amount of labour employed in making machines and the amount which will be employed in using them. The ultimate quantity of *value* will not increase indefinitely, relatively to the quantity of labour employed, as the processes adopted become more and more roundabout, even if their physical efficiency is still increasing. Only if the desire to postpone consumption were strong enough to produce a situation in which full employment required a volume of investment so great as to involve a negative marginal efficiency of capital, would a process become advantageous merely because it was lengthy; in which event we should employ physically *inefficient* processes, provided they were sufficiently lengthy for the gain from postponement to outweigh their inefficiency. We should in fact have a situation in which *short* processes would have to be kept sufficiently scarce for their physical efficiency to outweigh the disadvantage of the early delivery of their product. A correct theory, therefore, must be reversible so as to be able to cover the cases of the marginal efficiency of capital corresponding either to a positive or to a negative rate of interest; and it is, I think, only the scarcity theory outlined above which is capable of this.

Moreover there are all sorts of reasons why various kinds of services and facilities are scarce and therefore expensive relatively to the quantity of labour involved. For example, smelly processes

command a higher reward, because people will not undertake them otherwise. So do risky processes. But we do not devise a productivity theory of smelly or risky processes as such. In short, not all labour is accomplished in equally agreeable attendant circumstances; and conditions of equilibrium require that articles produced in less agreeable attendant circumstances (characterised by smelliness, risk or the lapse of time) must be kept sufficiently scarce to command a higher price. But if the lapse of time becomes an agreeable attendant circumstance, which is a quite possible case and already holds for many individuals, then, as I have said above, it is the short processes which must be kept sufficiently scarce.

Given the optimum amount of roundaboutness, we shall, of course, select the most efficient roundabout processes which we can find up to the required aggregate. But the optimum amount itself should be such as to provide at the appropriate dates for that part of consumers' demand which it is desired to defer. In optimum conditions, that is to say, production should be so organised as to produce in the most efficient manner compatible with delivery at the dates at which consumers' demand is expected to become effective. It is no use to produce for delivery at a different date from this, even though the physical output could be increased by changing the date of delivery;—except in so far as the prospect of a larger meal, so to speak, induces the consumer to anticipate or postpone the hour of dinner. If, after hearing full particulars of the meals he can get by fixing dinner at different hours, the consumer is expected to decide in favour of 8 o'clock, it is the business of the cook to provide the best dinner he can for service at that hour, irrespective of whether 7.30, 8 o'clock or 8.30 is the hour which would suit him best if time counted for nothing, one way or the other, and his only task was to produce the absolutely best dinner. In some phases of society it may be that we could get physically better dinners by dining later than we do; but it is equally conceivable in other phases that we could get better dinners by dining earlier. Our theory must, as I have said above, be applicable to both contingencies.

If the rate of interest were zero, there would be an optimum interval for any given article between the average date of input and the date of consumption, for which labour cost would be a minimum;—a shorter process of production would be less efficient technically, whilst a longer process would also be less efficient by reason of storage costs and deterioration. If, however, the rate of interest exceeds zero, a new element of cost is introduced which increases with the length of the process, so that the optimum interval will be shortened, and the current input to provide for the eventual delivery of the article will have to be curtailed until the prospective price has increased sufficiently to cover the increased cost—a cost which will be increased both by the interest charges and also by the diminished efficiency of the shorter method of production. Whilst if the rate of interest falls below zero (assuming this to be technically possible), the opposite is the case. Given the prospective consumers' demand, current input to-day has to compete, so to speak, with the alternative of starting input at a later date; and, consequently, current input will only be worth while when the greater cheapness, by reason of greater technical efficiency or prospective price changes, of producing later on rather than now, is insufficient to offset the smaller return from negative interest. In the case of the great majority of articles it would involve great technical *inefficiency* to start up their input more than a very modest length of time ahead of their prospective consumption. Thus even if the rate of interest is zero, there is a strict limit to the proportion of prospective consumers' demand which it is profitable to begin providing for in advance; and, as the rate of interest rises, the proportion of the prospective consumers' demand for which it pays to produce to-day shrinks *pari passu*.



III

We have seen that capital has to be kept scarce enough in the long-period to have a marginal efficiency which is at least equal to the rate of interest for a period equal to the life of the capital, as determined by psychological and institutional conditions. What would this involve for a society which finds itself so well equipped with capital that its marginal efficiency is zero and would be negative with any additional investment; yet possessing a monetary system, such that money will 'keep' and involves negligible costs of storage and safe custody, with the result that in practice interest cannot be negative; and, in conditions of full employment, disposed to save?

If, in such circumstances, we start from a position of full employment, entrepreneurs will necessarily make losses if they continue to offer employment on a scale which will utilise the whole of the existing stock of capital. Hence the stock of capital and the level of employment will have to shrink until the community becomes so impoverished that the aggregate of saving has become zero, the positive saving of some individuals or groups being offset by the negative saving of others. Thus for a society such as we have supposed, the position of equilibrium, under conditions of *laissez-faire*, will be one in which employment is low enough and the standard of life sufficiently miserable to bring savings to zero. More probably there will be a cyclical movement round this equilibrium position. For if there is still room for uncertainty about the future, the marginal efficiency of capital will occasionally rise above zero leading to a 'boom', and in the succeeding 'slump' the stock of capital may fall for a time below the level which will yield a marginal efficiency of zero in the long run. Assuming correct foresight, the equilibrium stock of capital which will have a marginal efficiency of precisely zero will, of course, be a smaller stock than would correspond to full employment of the available labour; for it will be the equipment which corresponds to that proportion of unemployment which ensures zero saving.

The only alternative position of equilibrium would be given by a situation in which a stock of capital sufficiently great to have a marginal efficiency of zero also represents an amount of wealth sufficiently great to satiate to the full the aggregate desire on the part of the public to make provision for the future, even with full employment, in circumstances where no bonus is obtainable in the form of interest. It would, however, be an unlikely coincidence that the propensity to save in conditions of full employment should become satisfied just at the point where the stock of capital reaches the level where its marginal efficiency is zero. If, therefore, this more favourable possibility comes to the rescue, it will probably take effect, not just at the point where the rate of interest is vanishing, but at some previous point during the gradual decline of the rate of interest.

We have assumed so far an institutional factor which prevents the rate of interest from being negative, in the shape of money which has negligible carrying costs. In fact, however, institutional and psychological factors are present which set a limit much above zero to the practicable decline in the rate of interest. In particular the costs of bringing borrowers and lenders together and uncertainty as to the future of the rate of interest, which we have examined above, set a lower limit, which in present circumstances may perhaps be as high as 2 or 2½ per cent on long term. If this should prove correct, the



awkward possibilities of an increasing stock of wealth, in conditions where the rate of interest can fall no further under *laissez-faire*, may soon be realised in actual experience. Moreover if the minimum level to which it is practicable to bring the rate of interest is appreciably above zero, there is less likelihood of the aggregate desire to accumulate wealth being satiated before the rate of interest has reached its minimum level.



The post-war experiences of Great Britain and the United States are, indeed, actual examples of how an accumulation of wealth, so large that its marginal efficiency has fallen more rapidly than the rate of interest can fall in the face of the prevailing institutional and psychological factors, can interfere, in conditions mainly of *laissez-faire*, with a reasonable level of employment and with the standard of life which the technical conditions of production are capable of furnishing.

It follows that of two equal communities, having the same technique but different stocks of capital, the community with the smaller stocks of capital may be able for the time being to enjoy a higher standard of life than the community with the larger stock; though when the poorer community has caught up the rich—as, presumably, it eventually will—then both alike will suffer the fate of Midas. This disturbing conclusion depends, of course, on the assumption that the propensity to consume and the rate of investment are not deliberately controlled in the social interest but are mainly left to the influences of *laissez-faire*.



If—for whatever reason—the rate of interest cannot fall as fast as the marginal efficiency of capital would fall with a rate of accumulation corresponding to what the community would choose to save at a rate of interest equal to the marginal efficiency of capital in conditions of full employment, then even a diversion of the desire to hold wealth towards assets, which will in fact yield no economic fruits whatever, will increase economic well-being. In so far as millionaires find their satisfaction in building mighty mansions to contain their bodies when alive and pyramids to shelter them after death, or, repenting of their sins, erect cathedrals and endow monasteries or foreign missions, the day when abundance of capital will interfere with abundance of output may be postponed. 'To dig holes in the ground', paid for out of savings, will increase, not only employment, but the real national dividend of useful goods and services. It is not reasonable, however, that a sensible community should be content to remain dependent on such fortuitous and often wasteful mitigations when once we understand the influences upon which effective demand depends.



IV

Let us assume that steps are taken to ensure that the rate of interest is consistent with the rate of investment which corresponds to full employment. Let us assume, further, that State action enters in as a balancing factor to provide that the growth of capital equipment shall be such as to approach saturation-point at a rate which does not put a disproportionate burden on the standard of life of the present generation.

On such assumptions I should guess that a properly run community equipped with modern technical resources, of which the population is not increasing rapidly, ought to be able to bring down the marginal efficiency of capital in equilibrium approximately to zero within a single generation; so that we should attain the conditions of a quasi-stationary community where change and progress would result only from changes in technique, taste, population and institutions, with the products of capital selling at a price proportioned to the labour, etc., embodied in them on just the same principles as govern the prices of consumption-goods into which capital-charges enter in an insignificant degree.



If I am right in supposing it to be comparatively easy to make capital-goods so abundant that the marginal efficiency of capital is zero, this may be the most sensible way of gradually getting rid of many of the objectionable features of capitalism. For a little reflection will show what enormous social changes would result from a gradual disappearance of a rate of return on accumulated wealth. A man would still be free to accumulate his earned income with a view to spending it at a later date. But his accumulation would not grow. He would simply be in the position of Pope's father, who, when he retired from business, carried a chest of guineas with him to his villa at Twickenham and met his household expenses from it as required.

Though the rentier would disappear, there would still be room, nevertheless, for enterprise and skill in the estimation of prospective yields about which opinions could differ. For the above relates primarily to the pure rate of interest apart from any allowance for risk and the like, and not to the gross yield of assets including the return in respect of risk. Thus unless the pure rate of interest were to be held at a negative figure, there would still be a positive yield to skilled investment in individual assets having a doubtful prospective yield. Provided there was some measurable unwillingness to undertake risk, there would also be a positive net yield from the aggregate of such assets over a period of time. But it is not unlikely that, in such circumstances, the eagerness to obtain a yield from doubtful investments might be such that they would show in the aggregate a *negative* net yield.