COLLECTED ECONOMIC PAPERS

Volume Three

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INTRODUCTION

THESE papers are gleanings from the last five years, except for two pieces which have strayed in from an earlier period.

The first group of papers are mainly controversial discussions of basic economic theory. The second group is concerned with some aspects of Keynes' theory and the third with Marx. The last section is the result of travels in Asia.

I have made a few excisions and minor verbal changes in the original texts. Points of substance are discussed in Postscripts.

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PART I

TEACHING ECONOMICS

A Passage to India

For many years I have been employed as a teacher of theoretical economics; I would like to believe that I earn my living honestly, but I often have doubts. I am concerned particularly for India and other developing countries whose economic doctrines come to them mainly from England and in English. Is what we are giving them helpful to their development?

In Cambridge, one or two of our best men, in most years, come from the sub-continent. This is not at all surprising. If talent is fairly evenly distributed in various populations, there must be ten potentially first-class men there for every one bred in Britain and where economic problems are of great importance and the natural sciences not very well endowed, a larger proportion of talent is attracted to the subject than with us. A small proportion come to English Universities, but a small proportion of a large total comes to quite an appreciable number.

These good men who come to us to be taught (and the not-so-good ones also) go home often to teach in their turn, and their pupils, too, become teachers and influence thought through other channels. Moreover, the books and the subjects chosen for examinations bear the stamp of English teaching. We have a great responsibility on our shoulders. Are we doing more harm or good?

In a gloomy mood, I think of the harm. Most students, of course, approach their studies merely with the aim of passing an examination and acquiring a degree. (This is not a matter of natural talent, but of character and circumstance. Some who are naturally brilliant may set themselves this limited aim. Some less clever may be more serious.) The exam-passers learn the trick of saying what is expected; of *not* asking themselves what is

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Economic Weekly (Bombay), January 1960.

meant by what they are saying (for that is disturbing and dangerous and may lead to losing marks), of repeating the particular formula which sounds as though it was relevant to each particular question. In India, especially, where the ancient belief in the power of words as such is still strong, this comes quite naturally. The exam-passer who does well becomes in due course an examiner, and by then he has quite lost any doubts he may once have had to stifle. He has come to believe that this kind of thing really is education. And so the system feeds on itself.

What about the few who are serious, who really want to learn something? What do we do for them? The serious student is often attracted to economics by humanitarian feeling and patriotism—he wants to learn how to choose economic policies that will increase human welfare. Orthodox teaching deflects these feelings into the dreary desert of so-called Welfare Economics, a system of ideas based on a mechanistic psychology of a completely individualistic pursuit of pleasure and avoidance of pain, which no one believes to be a correct account of human nature, dished up in algebraical formulae which do not even pretend to be applicable to actual data. As he goes deeper into the matter, he reads some brilliant and subtle authors who debunk the whole subject and show conclusively that its methodology was inadmissible. For most, this is too bitter a pill to swallow and they desperately cling to some scraps of what they have learned because no other way has been offered of formulating the vague benevolent feelings with which they began.

The serious student was hoping, also, to learn something that would help him to make up his mind on the great question that lies open before all the developing countries. How far can private-enterprise capitalism be made to serve national ends? Why is it that the Socialist countries appear to develop faster than the democracies? Is the cost that they exact from their people necessary, or could the job be done with less pain? Must he make an all-or-none choice or is there a middle way?

He soon begins to notice that, without any overt discussion of the question, he is being indoctrinated with notions soaked in a prejudice for *laissez-faire*. This is partly the result of a mere time-lag. Nineteenth-century economic teaching was built up round the conception of the merits of the free market, and in particular,

of free trade (which at that time favoured British national interests, though it was damaging to India); the modern text-books are still much influenced by the masters of that period. It is partly the result of the choice of curriculum. A large proportion of his time is taken up by the theory of relative prices. The question of the distribution of *given* resources amongst alternative ends, subject to the condition that there is an equitable (and not very unequal) distribution of purchasing power among the families concerned, lends itself to exhibiting a free market in a favourable light; the student is required to work out exercises devised to show how, in these conditions, interference with the free play of the forces of supply and demand causes harm to the individuals who make up the market. All this is very complicated, and when modified by modern embellishments such as the theory of oligopoly and imperfect competition, may well occupy a year of lectures and reading. If the serious student has the hardihood to ask: But are resources given, and is income distributed equitably? he is made to feel foolish. Do you not understand that these are necessary simplifying assumptions for the analysis of prices? You cannot expect to do everything at once.

It is true that we cannot, in the time available, teach everything that we would like. But why do we pick out for treatment just that selection of topics that is least likely to raise any questions of fundamental importance?

Trudging through these arid lands, the serious student still hopes to learn something about development, planning, inflation and all that concerns the burning questions of India today. Here the mere pressure of events has forced some new questions into the curriculum and a new theoretical apparatus of capital/output ratios and growth rates has been hastily botched up to meet the need. Systematic teaching, however, for the most part still rests at the stage of the old equilibrium theory. Take, for example, the question of choosing the capital/output ratio in framing the plans for industrialization. The text-book theory says no more than that, if we compare two economies, each already in equilibrium, with the same total value of capital already in existence in each, the one with the lower level of real wages will have (on certain stated assumptions about competition, etc.) a higher level of employment. That is where the argument is left. If the student falls into

the trap of concluding that cutting wages would cause employment to increase, very likely no one will go out of their way to explain why this is a *non-sequitur*.

The prestige of the teachers and the books bears down on the serious student with a heavy weight. He learns to distrust his native common sense and to curb his generous impulses. He submits himself to a course of miseducation and comes out, not 'by the same door wherein he went' but by another door, in the wrong street.

So in my gloomy mood. But even at the gloomiest, I do not think of giving up. The subject does exist. For better or worse it has become the basis of a flourishing profession. There is no stopping it now. We must keep on pegging away and try to make the best of it.

II

How would I like to see teaching reformed? First, do not let us bother about the exam-passers. Whatever we teach they will reduce to slogans, and new slogans cannot be more mis-educating than the old ones. If the new ones are less easy to detach from reality, they might even be a shade less mis-educating.

For the serious students, I would take the bull by the horns and start from the beginning to discuss various types of economic system. Every society (except Robinson Crusoe) has to have some rules of the game for organizing production and the distribution of the product. *Laissez-faire* capitalism is only one of the possible sets of rules, and one in fact which is unplayable in a pure form. It always has to be mixed with some measures of collective control. The Indian scene provides examples of pre-capitalist. capitalist and socialist games being played side by side. Students acquainted with the old fast-vanishing world can help in trying to puzzle out the economic analysis of its functioning and to test out the meaning of concepts such as wages and capital in non-capitalist contexts.

Adam Smith, Ricardo, Marx, Marshall and Keynes would be treated in terms of the model of an economic system that they each had in mind and of the actual problems that each sought to solve.

I should displace the theory of the relative prices of commodities from the centre of the picture and make the main topic production,

accumulation and distribution, looked at from the point of view of an economy taken as a whole. Keynes' General Theory then falls into place as the short-period section of a truly general theory. Here price theory comes in as an element in the theory of distribution, for the relation of prices to money-wage rates in the industrial sector of an economy is one of the determinants of the distribution of proceeds between workers and capitalists or the state, and the relation of agricultural to manufacturing prices is a main determinant of distribution between sectors of the economy.

Markets and the laws of supply and demand I should treat not only in terms of an ideal equilibrium already achieved but also in terms of actual dealings in commodities, with their tendency to develop cobweb cycles, and the violent shocks that are given from time to time to the communities dependent on them.

Welfare I should treat in human terms and teach the students to look, not for 'preference surfaces', but for objective tests of standards of nutrition and health.

In all this I should emphasize that economic theory, in itself, preaches no doctrines and cannot establish any universally valid laws. It is a method of ordering ideas and formulating questions. For this reason, I should pay a good deal of attention to method. I should insist upon the distinction between an accounting identity, a statement of equilibrium conditions and a summary of econometric facts. $Y \equiv C + S$, (where Y is net value of national income of a period, C is the value of purchases of consumable goods and S, net saving) is an identity. The word 'net' covers a balancing factor (amortization of pre-existing capital) which makes the two sides equal by definition. $S = sY$ (where s is the proportion of national income *normally* saved) is a statement of conditions of equilibrium; its whole significance lies in the sense given to *normally*. A table of figures giving estimates of S and Y over some past period is a statement, *ex post*, of supposed facts; its significance depends largely on the reliability of the estimates. None of these tells us anything about causation; models built with these bricks will never stand up. To find causal relations we want to know how individuals behave and how the behaviour of various groups reacts on each other. I should try to break down the awe that students feel for formulae, not so as to induce a sceptical drift into intellectual nihilism, but so as to form the habit of picking them to pieces and putting them together again with the

ambiguities cleaned off, and keeping them firmly in their place as useful adjuncts to common sense, not as substitutes for it.

All this sounds dry and formalistic but, illustrated first with precise imaginary simple examples, and then with rough and inexact actual examples, leading up to questions of real importance, it can be made interesting and educational for the serious students. The exam-passers will not be any the worse for it.

A generation well educated, resistent to fudging, imbued with the humility and the pride of genuine scientists, could make contributions both to knowledge and to the conduct of affairs that no one need be ashamed of.

Returning from this happy day-dream, my gloom is all the deeper. To write down what I want to see emphasizes how unlikely it is that I ever shall. But, courage! We must try as best we may to do a little good here and there to set in the scales against all the harm.

PRELUDE TO A CRITIQUE OF ECONOMIC THEORY

It is no wonder that this book[1] took a long time to write. It will not be read quickly. Addicts of pure economic logic who find their craving ill satisfied by the wishy-washy products peddled in contemporary journals have here a double-distilled elixir that they can enjoy, drop by drop, for many a day.

For some, indeed, the logic may be too pure. We plunge immediately into the argument without any preliminary discussion of assumptions and delimitation of topics. Evidently we are in a capitalist economy, but to avoid the ambiguities which have clustered around the word, capital is never mentioned. There is profit, but no enterprises; wages, but no pay-packets; prices, but no markets. Nothing is mentioned but the equations of production and the necessary conditions of exchange.

There is a great deal to be said for this method of exposition (over and above its lapidary style), for every attempt by an author to explain himself in terms of the preconceptions of one reader confuses another. Best leave each to work it out for himself.

To find a clue, let us to back a stage and pick up the argument from Sraffa's Preface to Ricardo's *Principles*. Postulate that corn is the only commodity consumed by workers and that the corn-wage rate is fixed. Corn is required also as seed, and there is no other commodity or equipment necessary for the production of corn. Then a stock of corn in existence at the beginning of a year has reproduced itself with a surplus at the end of the year. The ratio of the surplus to the stock is the rate of profit. The workers are, so to speak, intermediate goods, like machines, necessary for the process by which corn produces corn.

The corn-profit may be used to employ more workers either to produce luxuries, or to carry out investment; or it may rot in the barns. The way it is used cannot affect the rate of profit, which is fixed by technical conditions, and the equilibrium prices of all other products are determined in terms of corn (and so

[1] *Production of Commodities by Means of Commodities*, 'Prelude to a Critique of Economic Theory,' by Piero Sraffa.

Oxford Economic Papers, February 1961.

in terms of each other) by their costs of production, including profit at the corn-rate upon the capital (valued in corn) required to produce them.

Can the propositions derived from this model survive the removal of the postulate that only corn is required to produce corn?

The first step—here the present argument begins—is to introduce a variety of wage goods. Let there be a number of distinct commodities each of which is required, in a particular quantity, to be consumed by a worker, just as particular quantities of oil and fuel are required to operate a machine. The commodities are also required to produce each other and themselves. (To set us off on the right tack, wheat, iron, and pigs are mentioned. But they soon become commodities '*a*', '*b*', . . ., '*k*'.) The same argument applies as before. The commodities reproduce themselves with a physical surplus. The condition that the rate of profit is uniform throughout the economy settles their relative prices. The value of the stock of commodities at the beginning of the year and of the surplus after they have been replaced can be expressed in terms of any one of the commodities. The value of the real wage (which is fixed in physical composition by technical necessity) is also determined, and the cost of production of any commodities that do not enter into the real wage (subject to the condition that they yield the ruling rate of profit) settles their prices. This merely elaborates the corn-wage model without altering its essence.

The next step takes us much further. Instead of the real wage being fixed by physical necessity, the workers receive a share of the surplus. The author toys with the idea of separating the wage into a part which is necessary and the rest; he rejects it in deference to ordinary usage. He makes this concession with evident reluctance, but readers may welcome it, not only to avoid verbal clumsiness but also because we could hardly imagine that, when the workers had a surplus to spend on beef, their physical need for wheat was unchanged. Wage goods thus cease to be necessary for production in technically fixed proportions. There remain, however, commodities which are necessary as means of production for themselves and each other. (The pigs and wheat presumably drop out, but the iron remains.) They reproduce themselves with the aid of labour and yield a surplus out of which the labour is paid.

We are now launched on the main problem—the effect upon prices of changes in the division of the surplus between wages and profits.

Nothing is said about what determines the division. We are to consider the consequences, not the causes, of changes in the real wage.

It is this, not the austere style, that makes the book difficult. We are concerned with equilibrium prices and a rate of profit uniform throughout the economy, but we are given only half of an equilibrium system to stand on. We need a fence to prevent us plunging off into the abyss. The author suggests as a helpful (but not necessary) provisional assumption that constant returns prevail. I, for one, found that this only made me all the more dizzy. It seems better to assume that changes in the share of wages do not affect the composition of output.

There is a further difficulty. The wage 'changes' only in the sense that the value of x changes as we run our eye up and down a curve. In the year that we are examining, each change has already happened. So long as all commodities reproduce themselves within a year, this is easy to accept; but when long-lived machines come into the picture (in a later chapter) it causes discomfort. Can the equalization of the rate of profit throughout the economy come about except through the equalization of expected profits on new investment in various lines? If the rate of profit has changed during the life-time of machines in existence this year, there is no equality between expected and realized profits in any one line—why should there be equality between realized profits in different lines? Let us add to the protective fence of provisional assumptions that we need not take the word 'change' literally. We are only to compare the effects of having differing rates of profit, with the same technical conditions and the same composition of output. Thus reassured, we can remain on the narrow ledge without vertigo.

When the wage is not given by technical conditions, what do prices mean? A change in the division of the surplus between wages and profits alters relative prices. But we need to know the prices to value the surplus that is to be divided. This was the problem that flummoxed Ricardo.

Sraffa's solution is ingenious and satisfying. He isolates those *basic* commodities which enter directly or indirectly into the

production of all commodities and, from the technical equations which show how each enters into the production of the others, he constructs a standard of value in the form of a composite commodity into which each particular item enters, as means of production, in the same proportion as it appears as output.

The beauty of this is that, as the wage reckoned in terms of this standard rises, the prices of some of the commodities composing it (in which wages are a high proportion of cost) rise, and others (in which profits are a high proportion of cost) fall, to just such an extent as to balance each other, and leave the ratio of the value of the surplus to the value of the means of production unchanged. This provides a technically determined ratio of surplus to means of production which is independent of the division of the surplus between wages and profits.

Now, given the n technical equations for n commodities, and the wage rate in terms of the standard, the $n-1$ prices and the rate of profit are determined. Or, given the n equations and the rate of profit, the wage is determined.

Assuming that wages are paid at the end of the year (no capital is required to finance a wage fund) there is a linear relationship between the share of wages in the surplus and the rate of profit.

This having been established, the standard commodity can be left to look after itself and the argument is conducted in terms of the rate of profit corresponding to zero wages (that is, the ratio of surplus to means of production), and the actual rate of profit, with the wage rate that it entails.

In order to construct the standard commodity it must be possible to find a quorum of basics—commodities that enter directly or indirectly into the production of all commodities. So long as there are necessary wage goods there are bound to be basics, for, via labour, the wage goods enter into all production. But when wages are part of the surplus we have to fall back on an assumption that there is at least one basic commodity. Certainly that is plausible enough, but it is natural to ask what would happen if there were none. Does the whole method stand or fall on this assumption? I think not.

Suppose that technical equations could be divided into two systems without any overlap, in one of which iron enters directly or indirectly into the production of all commodities, and in the other, wood. The two systems of equations belong to the same

economy in the sense that the rate of profit and the wage rate are the same in both. Now, when the rate of profit is given, the wage rate in terms of the iron-standard is determined for the iron system and the wage rate in terms of the wood-standard is determined for the wood system. The fact that the wage is uniform determines the price of iron in the wood-standard. The assumption of at least one basic commodity thus appears to be a mere simplification, not a crucial step in the argument.

After exploring the properties of a system in which each productive process takes one year and produces one commodity, we are shown the application of the method to joint products, fixed capital and land, and to the choice of technique when alternative methods are available for producing a single commodity. The argument then ceases as suddenly as it began.

In elaborating the method to deal with complexities such as long-lived machines, many points of great interest are turned up (including a version of the formula for the relation of the value of a machine to its cost which was worked out, presumably, much later, though published earlier, by Kahn and Champernowne), but the main point of dealing with these problems is just to show that it can be done. The essence of the argument remains that which is exhibited with circulating capital only.

The sub-title gives a hint of the purpose for which it has been established—*Prelude to a Critique of Economic Theory*. In the preface, after referring to a draft of the book which he discussed with Keynes in 1928, Sraffa writes:

> As was only natural during such a long period, others have from time to time independently taken up points of view which are similar to one or other of those adopted in this paper and have developed them further or in different directions from those pursued here. It is, however, a peculiar feature of the set of propositions now published that, although they do not enter into any discussion of the marginal theory of value and distribution, they have nevertheless been designed to serve as the basis for a critique of that theory.

The significant word is 'however'. Others have developed input-output systems and process analysis to higher degrees of elaboration than are shown here, but they have not brought them to bear on the foundations of orthodox doctrine.

Can we divine what the critique will be? There are three main propositions which can be derived from the corn-wage model

and which have been shown to survive all the necessary modifications that follow from elaborating its assumptions.

The first is that, when we are provided with a set of technical equations for production and a real wage rate which is uniform throughout the economy, there is no room for demand equations in the determination of equilibrium prices. (When we take down our protective fence, and allow that changes in distribution affect the composition of output, we shall need a fresh set of equations relating them, but that is quite another matter.)

Some might complain that this is only flogging a dead Marshallian horse (which Sraffa himself helped to kill, even before 1928). But to my mind it emphasizes a point which, both in its scholastic and in its political aspect, is of great importance; in a market economy, either there may be a tendency towards uniformity of wages and the rate of profit in different lines of production, or prices may be governed by supply and demand, but not both. Where supply and demand rule, there is no room for uniform levels of wages and the rate of profit. The Walrasian system makes sense if we interpret it in terms of an artisan economy, where each producer is committed to a particular product, so that his income depends on his output and its price. Each can have a prospective rate of return on investment in his own line, but there is no mechanism to equalize profits between one line and another. In real life, no one expects to see an equalization of the rates of profit obtainable from sugar in Cuba and cocoa in Ghana or can even say what an equal rate of profit would mean.

The intrusion of demand equations into the theory of the wage economy, and the attempt to foist a rate of profit on to the exchange economy, have led to endless confusion; a critique to clear it up is long overdue.

The second proposition is mentioned by Sraffa in his *References to the Literature*. It is the rejection of the claim 'that the price of every commodity, either immediately or ultimately, resolves itself entirely (that is to say, without leaving any commodity residue) into wage, profit, and rent'.

In the corn-wage economy, the production of corn this year requires that there should be a stock of corn already in existence, to provide seed and the subsistence of the workers until the next harvest. Sraffa has removed the assumption of a technically determined physical real wage. This throws great weight upon

commodities regarded as means of production, a weight made all the greater by the assumption that capital is not required for a wage fund. *Production of Commodities by means of Commodities* is his central theme.

It leads to the very striking proposition that there is a technically determined maximum notionally possible rate of profit, which would obtain at zero wages. (It is only notionally possible, for even when the postulate of a precise physically necessary wage has been abandoned, there is still a vague but tough lower limit to possible real wages and so an upper limit to the possible rate of profit.)

The third proposition, if we may indulge in a loose mode of expression that the author carefully avoids, is that the marginal productivity theory of distribution is all bosh.

Sraffa does not deny any sensible arguments that can be expressed in marginal terms. His treatment of diminishing returns from land and of the choice of technique makes room for legitimate uses of the concept of a production function. What he demonstrates decisively (though doubtless the deaf adders will take no notice) is that there is no such thing as a 'quantity of capital' which exists independently of the rate of profit.

It is important to realize that the third proposition does not depend upon the second.

Certainly the proposition that no production, by the methods known today, could take place without some pre-existing commodities, is highly plausible, but it is a matter of fact, not of logic. It does not mean that if prices could be reduced without residue, to wage, profit and rent, then the marginal productivity theory of distribution would be cogent.

Flint mines were dug with antlers picked up in the forest. If this economy was run on capitalist lines, it must have been necessary to advance wages to the men collecting antlers (otherwise they would be self-employed traders). Men dug the pits and shaped the flints. All processes could be reduced to terms of dated inputs of labour. To find the capital required for production (in the sense in which capital is the principal on which profit is the interest) we must know either the wage in terms of axes or the rate of profit.

Certainly, Sraffa is right that in Ricardo's time, or our own, commodities are necessary to produce commodities. But even the

neolithic rate of profit was not determined by the 'marginal product of capital'.

Presumably, it will be a little time before the critique to which this is the prelude will be published. We might have some self-criticism meanwhile.

Postscript

The comment upon Sraffa's second proposition is evidently incorrect. When wages are advanced to the workers searching for antlers, there must be a stock of wage-goods already in existence, or productive capacity to supply them. If these are purchased from an independent peasantry, outside the capitalist economy, the peasants, in turn, must be able to support themselves while the production is going on. Either way, commodities are required to produce commodities, and Sraffa's proposition holds.

The reference to deaf adders has turned out to be sadly correct, as the following papers in this section show.

EQUILIBRIUM GROWTH MODELS

MODELS are customarily set out with the assumptions at the beginning and the conclusions at the end, but this is not how they are built. An author starts from some doctrine which he wishes to defend or some proposition that he hopes to establish, and sets about finding the least unplausible-looking assumptions that will lead to the conclusions that he requires. (A professed empiricist might think this queer, but he is doing much the same thing when he picks the headings for the columns in which his figures will be grouped.) Once the assumptions have been found, a return journey towards the conclusions must be made, and in the course of it the author (or a critic tidying up after him) often discovers logical relationships which he did not yet know of; thus fresh explorations are made in the process of establishing foreknown conclusions.

I

Professor Meade has added one more to the troop of long-run macrodynamic models of growth in a pure free-enterprise economy.[1] There are now a sufficient number of them roaming around to make it possible for us to map out the logical field in which they move.

For such a survey, the familiar formula, $g = s/v$, is not a good starting point. If we take it as *ex post* accounting identity, we have to define its terms (as with other truisms, such as $S = I$ or $MV = PT$) in such a way as to beg all the questions that are to be discussed. As the statement of *ex ante* equilibrium conditions, it fails to isolate the independent variables; s, the ratio of annual net saving to annual net income, is strongly influenced by the ratio of profits to income, which in turn is strongly influenced by the ratio of annual net investment to the value of capital, that is, by g itself; v, the ratio of value of capital to annual net income, is influenced, both through the prices of capital goods and through the choice of technique, by the rate of profit, which

[1] J. E. Meade, *A Neo-Classical Theory of Economic Growth.*

The American Economic Review, June 1961.

is a function of s and g. All the formula can say is that, if growth is going on under equilibrium conditions at the rate g, then s/v is equal to it.

Harrod, certainly, whatever his warranted rate of growth was supposed to mean, did not intend to throw away the *General Theory* and make savings govern investment. What his theory reveals is something much more interesting than this barren formula. What he shows is that, if we write down a function for the inducement to invest (whether in terms of the accelerator, or of expected profits, of the supply of finance, or just of the animal spirits of the managers of firms) generating a desired rate of growth, and a set of technical conditions (the labour supply, the flow of new inventions and so forth) providing a 'natural' or better, a physically possible rate of growth, and, furthermore, postulate equilibrium with full employment, we have over-determined our system.

There are three ways of getting out of the impasse. One is to give up the idea of equilibrium and exhibit an economy blundering on from one situation to another (as happens in the history of the world we live in) following no simple predictable path The second is to introduce a functional connection between the desired and the possible growth rates so that one determines the other. The third is to give up the desired rate of growth and simply assume that actual growth goes on, in equilibrium conditions, with continuous full employment of available labour.

Harrod himself sketches very sketchily growth paths of the historical type. (Because of the peculiar inducement-to-invest function that he uses, they are wildly erratic.) My 'golden age' has been criticized for just what I regard as its chief merit—that it is not an equilibrium path. It is a special case of an imagined historical path in which the desired rate of accumulation, the physically possible rate and the initial conditions happen to be in harmony; its use is to illuminate the causes and consequences of various kinds of disharmony.

Kaldor follows the second method.[1] His technical-progress function permits the desired rate of growth to bring the possible rate into equality with itself. Though he uses the language of history, he argues in terms of equilibrium. His equations describe

[1] 'A Model of Economic Growth', *Economic Journal*, Dec. 1957. Reprinted in *Essays on Economic Stability and Growth.*

a golden-age path which the economy, when not already on it, is seeking to reach, moving from any given starting point along a determinate route at a determinate pace. Kahn[1] shows how we can construct a model which achieves equilibrium the other way around, by making the possible rate of growth control the desired rate via the mechanism of the supply of finance, provided that the desired rate is sufficiently high and sufficiently interest elastic. Duesenberry[2] works out an equilibrium path for desired growth and trusts to a kindly Providence to keep the possible rate in line with it.

Meade's model is frankly of the equilibrium persuasion. The rate of investment is always equal to the full-employment rate of saving, the demands for labour and other means of production are equal to the available supplies and perfectly competitive prices rule. He gives a token explanation in terms of interest policy and the behaviour of money wages, but it is evidently not to be taken to mean anything more than a postulate that equilibrium is always maintained.

II

Before discussing his particular assumptions, let us consider in general what full-employment, competitive equilibrium implies. The basic conception is that full employment of available labour obtains at every stage of the accumulation of capital. Taking as given the technical conditions, the supply of labour, and the propensity to save from each type of income (the thriftiness conditions, for short) there is an equilibrium relationship between the stock of capital in existence in any particular position and its rate of growth. Thus, if we specify a particular rate of growth (which in the special case of a stationary state is zero) the equilibrium stock of capital is indicated; if we specify a stock of capital, the equilibrium rate of growth is indicated. Moreover, in any position that we chose to examine, with a certain labour force in existence and a certain rate of growth going on in the labour force and in the over-all value of capital per man employed, the postulate of equilibrium entails not only the over-all value of the stock of capital but its precise composition. In particular the

[1] 'Exercises in the Analysis of Growth', *Oxford Economic Papers*, June 1959.
[2] *Business Cycles and Economic Growth.*

stock of durable equipment in existence must be of the amount and form appropriate to the rates of output being produced.

Competitive equilibrium implies a uniform rate of profit throughout the economy. Thriftiness conditions and the rate of accumulation determine the level of the current rate of profit at each moment. This, combined with the physical rates of output, determines all prices in terms of money-wage units, and so determines real wages.

Given an equilibrium situation, output and consumption today determine what stocks of goods of all kinds will be tomorrow, and the stocks today determine what output and consumption must have been yesterday. The present position, combined with the postulate of continuous equilibrium, decrees what the situation will be at any date in the future, and entails what it was at any date in the past. The model is 'a creature that moves in determinate grooves—not even a bus, but a tram'.

Kaldor has professed himself unable to see 'where marginal productivity comes in'.[1] Certainly there is no room here for the view that the marginal product of labour directly influences the wage bargain. (Well, my man, I see that your marginal product has gone up and I am glad to give you a raise.) As for the marginal product of 'capital', no one has yet told us even what it is intended to mean. But all the same there is a certain sense in which marginal products clearly do come in. One of the conditions of equilibrium is that no firm, given today's prices and prospects, is using one technique of production when another would have been more profitable. This conception can be expressed in an *ex ante* micro-production function in terms of labour, value of capital per man and value of output.

The 'degree of mechanization' of different techniques can then be shown by their relative positions on the *ex ante* production function expressed in terms of value at constant prices. The marginal productivity of each factor, as between one technique and another *at constant prices*, then has a definite meaning. One technique offers a higher output per head, compared to the next below it, in virtue of a higher cost of capital per man. The extra output is the marginal product of the extra investment. The less

[1] 'Alternative Theories of Distribution', *Review of Economic Studies*, 1955–56, 23 (2). Reprinted in *Essays on Value and Distribution*, p. 236.

mechanized technique offers a higher output per unit of investment in virtue of more labour to be employed per unit of value of capital. The value of the extra output, plus or minus the difference in other costs required to produce it, is the net marginal product of the extra labour. To say that the correct technique is chosen means that the net marginal productivity of each factor, in this sense, to the individual firm, is not less than the marginal cost of employing it.

The assumption of continuous equilibrium is very exacting. For instance, when the path that the economy is following entails a falling rate of profit on capital over the future, investment which is being made today in long-lived installations will be designed for a more mechanized technique than would have been chosen if today's rate of profit were going to continue, while very short-lived investments will be appropriate to nearly today's current rate.

The choice of technique on these principles, of course, has little bearing on actual investments made in the rough and tumble of real life. An equilibrium system, by its very nature, is cut off from reality. It is useless to interpret history in terms of it and illegitimate to appeal to history for evidence to support it. All it can do is to display the logical relations generated by its assumptions.

Once we have laid down a set of assumptions, it is easy enough to run the model along its tram lines. As general simplifications, postulate a closed economy in which wages and profits exhaust total net income; no economies of scale or scarce natural resources; a constant labour force; and (for convenience in exposition) a clear-cut distinction between capital equipment and consumption goods, so that output and employment are exhaustively divided into a consumption-good and an investment sector. Some simple cases may be distinguished.

1. There is no technical progress, so that the set of *ex ante* production functions, though changing with prices, retains its physical characteristics. The technical conditions exhibited in the production functions, with specified thriftiness conditions and constant employment, determine a particular stationary state in which the total amount and form of the stock of capital goods, the rate of profit on capital and the real wage are compatible with zero net saving.

With any valuc of capital lcss than that appropriate to the stationary state, accumulation is taking place. Choosing assumptions about the production functions congenial to the neoclassical point of view (a continuously falling output/capital ratio associated with a rising capital/labour ratio) and assumptions about thriftiness congenial to a Keynesian point of view (the ratio of saving to income falling as the share of wages in the value of output rises) we find that a lower value of capital is associated with a higher rate of profit and a faster rate of accumulation. The economy is following a determinate path with the value of capital per man, the real wage rate and the value of output per man rising, the pace of accumulation decelerating and the rate of profit on capital falling. The stationary state is the asymptote to the path that the economy follows. This is the process usually described as 'deepening' investment.

We can compare several economies described by the same equations, all following a single path through infinite time, but each with a different stock of capital 'today'. Then they are all pursuing each other; that with the smallest stock of capital has the fastest rate of growth and the sharpest deceleration; it will never pass the one above it; by the 'date' when it has the same stock of capital as that one has 'today' it will have slowed down to the pace at which that one is moving 'today'.

With the assumptions that we have chosen, the value of capital per man (all values being reckoned in terms of a basket of consumption goods) is continuously rising and the rate of profit on capital continuously falling. The value of output per man is continuously rising and so is the real-wage rate. The share of wages in the value of net income may go either way. By the same token, net investment per unit of capital is continuously falling and capital per unit of income continuously rising. The value of net investment per unit of income may go either way. The same feature of the situation that would make the share of wages rise—*ex ante* production functions along which substitution of capital for labour is sticky—would make income per unit of net investment rise. Thus the share of wages and the ratio of saving to income that goes with it is in harmony with the ratio of investment to income required to keep the model on its equilibrium path.

There is no particular virtue in the case of a constant relative share of wages. It does not correspond to any simple kind of

technical condition such as can be expressed as a unity elasticity of substitution between 'factors of production', since the share depends on a mixture of technical relations (such as can be shown in *ex ante* production functions at given prices) and the effects of the price changes associated with a changing rate of profit.

2. For our second example we drop the *ex ante* production functions and introduce technical progress. At each moment of time there is one best technique for each product considered separately, which would be chosen for new investment whatever the wage rate, but fresh superior techniques are continually being discovered, so that each round of gross investment goes into a different form.

For present purposes neutral technical progress can be sufficiently described by saying that it makes possible a rise of output per head of consumption goods while requiring an unchanged cost in terms of wage units of equipment per man employed (though unfortunately Meade uses a different, and highly idiosyncratic, terminology). When output is growing at the rate given by technical progress (with constant employment), this entails a constant value of the stock of capital in terms of wage units (as Harrod pointed out long ago). Since equilibrium requires the real wage rate to be rising at the growth rate of the system, the value of the stock of capital in terms of consumption goods is growing at the same rate.

A steady rate of neutral technical progress, in this sense, provides a ceiling, like the stationary state in the first example, with a constant capital/output ratio (in value terms) and a constant rate of profit on capital. It has the characteristics of what I have called a golden age.

An economy in which technical conditions develop in the same way as those depicted on the golden-age path, but which has a lower value of capital per man, has a higher rate of accumulation than that appropriate to the golden-age path and is decelerating towards it. The path that the model follows is then a sort of pursuit curve approaching asymptotically to the golden-age path. To fill in the details we must specify the length of life of equipment of various kinds, so as to be able to say, at any given point on the pursuit curve, how many generations of older, less productive, equipment are in existence and so what is the average productivity of labour at that point.

3. A capital saving bias in technical progress means that the cost in terms of wage units of equipment per man falls as time goes by. At the ceiling, when thriftiness conditions are such as to require a constant rate of growth of the value of capital, output is growing at a constant, faster rate. (This is what I have called a quasi-golden age.) There is then a constant rate of profit on capital, the real wage is rising faster than output per head of consumption goods, labour is being drawn out of the investment sector into the consumption sector and the value of the stock of capital goods in terms of wage units is falling. (The psychology of capitalists, expressed in the thriftiness conditions, must be such as to permit this to occur; otherwise a chronic condition of scarcity of labour would be set up by the competition for hands between the two sectors.) The case of a capital-using bias can be described symmetrically, with labour moving out of the consumption sector into the investment sector.

4. To combine elastic *ex ante* production functions with neutral technical progress makes no difference as far as the ceiling is concerned. Neutrality means that the *ex ante* production functions are rising iso-elastically to themselves, so that the capital/output ratio corresponding to a given rate of profit remains constant. Since the rate of profit on capital is constant on the golden-age path, techniques of the same degree of mechanization are chosen from the successive sets of *ex ante* production functions. There is no call for a movement 'along' them, and their shape has no effect. Relative shares and the division of the labour force between sectors remain constant, as before. The real wage rate rises in step with output per head.

5. To combine technical progress which is unevenly distributed between the sectors with elastic *ex ante* production functions introduces some complications. In such a case a capital-saving tendency in technical progress may be combined with 'deepening' investment. This opens up a wide range of possibilities. We may, if we please, select a set of assumptions that make the two tendencies (capital saving bias and increasing 'depth') just balance, so that the capital/output ratio and the division of the labour force between the sectors remain constant. This produces the same effect as a golden age with neutral technical progress. The rate of profit on capital and the share of wages in the value of output remain constant while the system grows at a steady rate.

III

Meade's prime object is to demonstrate that the movement along an equilibrium path can be described in terms of the marginal physical productivities of factors of production. To do so, he lays down a formidable barrage of special assumptions.

There are two products, a consumption good, let us call it a shirt, and a capital good, steel. We can easily accept a notional shirt as an index of the physical output of consumer goods. What is 'steel'? The author tells us that it 'can be made into machines of different forms to suit the current state of technical knowledge and to suit the ratios of labour and land to machines which the current cost of the different factors makes possible; but we have assumed that the tonnage of steel incorporated in any machine can in the short run as well as in the long run be readily and without cost transformed into a different type of machine which is more profitable in the light of changing technical knowledge and changing relative scarcities of the factors of production'.[1] Evidently this 'steel' is like land in that it can be used for various kinds of production, in various proportions with labour, and in newly invented superior techniques, without losing its physical identity. On the other hand it is more like steel in the literal sense in that it enters into the production of itself. We are not told what its unit—a ton—is intended to represent. It is not a unit of productive capacity, nor of employment offered, nor of cost. One cannot help suspecting that the author would rather like us to have in mind the associations of 'a ton of steel' in its everyday sense while salving his conscience by having written down assumptions that show that he is talking about something quite different. He foxes us still more by always referring to the stock of steel in existence as 'machines'.[2] For present purposes let us write it *leets*, so as to be continuously reminded that we do not know what it means.

There are two production functions, at each moment of time, in terms of labour and leets as inputs, one with shirts and the other with leets as outputs.[3] These are not merely *ex ante* micro-production functions governing the choice of technique for new

[1] Op. cit., p. 45.

[2] Chapter 6 purports to introduce a variety of types of equipment specific to particular outputs and particular techniques, but no attempt is made to explain what a quantity of 'machines' or their marginal product is then intended to mean.

[3] For most of the main text the two production functions are identical.

investment. They relatc the use of physical stocks of factors of production, already in existence, to current rates of output in physical terms. (In the terminology used above, a higher overall leets/labour ratio would correspond to a higher degree of mechanization having bcen chosen for the whole stock of means of production in existence.)

No working capital is required, and it appears from the description quoted above that the division of leets and labour between the two industries, and the proportions of leets to labour in each, can be instantaneously adjusted, without cost, to any change.

Because of its versatility, leets cannot suffer from obsolescence and, though it suffers from physical decay it does so by evaporation at a rate that is independent of its age.[1] The owners of leets employ workers, paying wages and receiving quasi-rents. The money price of shirts is constant, and the money wage is such that all labour is employed.

By considering these assumptions (rather than from the author's explanations) it can be seen that, given the technical conditions exhibited in the production functions, the quantity of leets in existence and the propensity to save of workers and leets owners determine the whole system.

Equilibrium requires that the ratio of leets to labour in the shirt industry is such that the marginal product of additional labour employed with a given quantity of leets is equal to the wage (product and wage both being a quantity of shirts) for, without working capital, the marginal cost of a man-year of labour is simply the wage per man year. In the leets industry, the ratio of the additional product of an additional quantity of leets employed with a given amount of labour, to that quantity of leets, is equal to the current rate of profit on capital. Equilibrium also requires that the ratio of the output of shirts to the shirt value of total output corresponds to the ratio of consumption to income. Thus the shape of the two production functions, the thriftiness conditions, and the stock of leets in existence determine the equilibrium values of the shirt wage, the shirt price of leets

[1] This assumption is removed and a special chapter devoted to depreciation, but it does not seem to be very well integrated with the rest of the analysis. The numerical examples do not hang together for, though the argument is based on the Kahn-Champernowne formula for value of capital, it has not been used in working them ut.

and the rate of output of each commodity at any point. The rate of output of leets governs the growth of the economy from that point on.

In the terminology used above, an iso-elastic rise in the shirt production function (with no change in the leets sector) corresponds to neutral technical progress. It raises output per head while leaving unchanged the labour and leets required to equip a man for a technique of a given degree of mechanization. A rise in the leets production function, with the shirt production unchanged, is capital-saving or capital-using, according as the elasticity of substitution between leets and labour in the shirt sector is less or greater than unity.

The thriftiness conditions, and the form of the production functions and their rate of rise, define a ceiling and a pursuit path. The amount of leets in existence defines the point on the pursuit path that the economy is at and the pace at which it is moving along it.

Instead of setting out a number of such paths, as we have done above, and following each one through, Meade proceeds by taking, so to speak, a spot check here and there, showing what the relations must be between the rate of growth of the stock of leets and the changes in the shirt price of leets and the shirt wage that are going on, on paths characterized by different shapes of the production functions or different thriftiness conditions. (He also brings a changing labour force and land as a factor of production into the analysis.) This does not make for clarity. We are always in the course of moving without being told where we start from. In particular, the determination of the division of the labour force and of the stock of leets between the two sectors, at the point where a spot check is being taken, though entailed by the marginal productivity conditions, is not set out in a perspicuous manner. Also, there is a current rate of profit on capital somewhere boiled into the mixture but not strained out of it. Some of the *obiter dicta*, such as that technical progress in the leets sector has a tendency to raise the rate of profit on capital, are distinctly queer; but most of the time the rate of profit on capital drops out of sight altogether and the argument is conducted in terms of the shirt-value of profit per ton of leets.

The author does not seem to find any particular significance in the relations that he discovers, except for one case which he regards as specially important, and for which he sets out the characteristics of the path in a coherent manner. It is the case in which technical progress is combined with a constant division of the labour force between the two sectors.

He specifies it as follows. The production functions, both rising through time, each show a unit elasticity of substitution between leets and labour. The share of wages in the value of output in each sector separately therefore remains constant as the leets/labour ratio alters. There is a constant proportion of saving out of wages and out of profits. These two conditions combined to ensure that there is a constant proportion of output of shirts to the shirt value of the output of leets. The proportionate division of labour and leets between the two sectors remains constant as the stock of leets grows. The shirt wage rate and the shirt value of profit per ton of leets rise in the same proportion as total output.

The reason why this case has particularly taken Meade's fancy is evidently because it shows a steady rate of growth together with a movement along the production functions (as the over-all leets/labour ratio rises) which gives a prominent role for the marginal products to play. The composition of output remains constant as the total increases, so that physical product has an unambiuous meaning, and it is possible to say that the marginal physical product of labour is rising in proportion to output, when the marginal product means the addition to total output that would be produced by an additional unit of labour with the same total quantity of—yes, but of what?

He seems to be an ill advocate of the cause that he has at heart. If there is no sense to be made of the idea of a production function unless 'capital' can be presented as a homogeneous physical substance, with some of the properties of land and some of the properties of ectoplasm, then indeed there is no sense to be made of it. But this is certainly not the case. Postulate full employment in continuous competitive equlibrium and the assumptions we choose to make about technical and thriftiness conditions will see us through, right on till Kingdom Come, without any need to resort to ectoplasm. What they cannot do is to tell us anything about the history of the world we live in.

IV

There is another feature of Meade's special assumptions which is interesting for the light that it throws upon the nature of equilibrium analysis. He claims that he does not need to start his model off at any moment already on its appropriate pursuit curve. It can start anywhere, with any arbitrarily given stock of leets, and will find its way on to the path. There is one exception. When leets per man is much greater in the leets sector than in the shirt sector, and neither of the production functions is very elastic, a fall in the output of leets, requiring a transfer of factors to the shirt sector, makes leets redundant and its price falls to zero. Presumably if this had been foreseen it would not have been allowed to happen. In this case, therefore, if the story begins in a position where the rate of investment is higher than is appropriate to the equilibrium path, the economy cannot get on to the path without falling out of equilibrium. To guard against this case Meade assumes that the production functions are sufficently elastic to be able to accommodate any over-all leets/labour ratio to any division of factors between the sectors that equilibrium may require. Subject to this proviso, he can show that whatever amount of leets there may happen to be in existence, it will be sorted out so as to satisfy the conditions of equilibrium and set the model moving along the path appropriate to its assumptions.

The reason why he can do so is that he has eliminated all effects of past history upon what happens 'today'. The age composition of the stock of leets does not affect its future productivity or its value; no fossils from past out-of-equilibrium investment can affect the future course of investment.[1] The versatility of leets means that investors have no need to worry about its future usefulness—if the rate of investment falls off in the future they will switch leets from the leets sector to the shirt sector. It is true that such movements will be accompanied by changes in the shirt value of the stock of leets, but it appears from the way that the thriftiness conditions are laid down that invcstors take no account of capital gains or losses. No one, it seems, either has or needs any foresight. All that is required is to shift factors about from day to day (which can be done without cost) so that the marginal product of labour in shirts per man is equated to the shirt cost of

[1] In Chapter 6 some of these problems are referred to but not resolved.

employing a man (since there is no working capital, this is equal to the shirt wage) and the value of the marginal net product of leets is equal in the two sectors.

It seems rather strange to describe this system, in which the concept of capital is totally divorced from time, as neoclassical. The neoclassics, Böhm-Bawerk, Marshall and Wicksell, were all intensely preoccupied by the role of time in the process of accumulation and sought in it to find a clue to the meaning and measurement of capital as a factor of production.

However that may be, Meade's peculiar assumptions, by the trouble which they take to emasculate history, show very clearly what is the nature of the assumption of equilibrium and the manner in which it insulates the analysis from contact with reality.

Postscript

The difference between Professor Meade's special case of steady growth and my golden age is in verbal exposition, not in the logic of the analysis. A golden age requires technical progress to be neutral in the sense used above, so that a constant rate of profit accompanies a constant capital/output ratio; and it requires that the physical composition of the stock of capital is appropriate to the rate of accumulation that is going on.

An iso-elastic rise in the shirt production function alone is neutral in the above sense. This can be expressed in terms of Harrod's definition as an equal increase in productivity throughout the economy, for it automatically causes a corresponding rise in output per man in the leets sector, when output there is measured, as is appropriate, in units of productive capacity. (In tons of leets it is constant, but productive capacity per ton has been raised by the technical progress in shirt-making.)

When technical progress raises output per head in the leets sector, leets becomes cheaper relatively to labour; unit elasticity of substitution in the shirt sector therefore causes an increase in leets per man employed there proportionate to the rise in output per head in the leets sector, which in turn causes a proportional rise in output per head in the shirt sector. Once more the technical progress is neutral. (When the elasticity of substitution in the shirt sector is less than unity, the increase in productivity in that sector is less than in the leets sector; the technical progress

has a capital-saving bias; labour is released from the leets sector at a constant rate of accumulation. Contrariwise, when the elasticity of substitution in the shirt sector is greater than unity, the technical progress has a capital-using bias.)

Thus technical progress in each sector separately, on Meade's special assumptions, is neutral for the economy as a whole, and it is neutral in whatever proportions it is divided between them. Meade's special case conforms to the ordinary case for a golden age. The division of the labour force between sectors remains constant as accumulation goes on at a steady rate.

Meade's assumptions are designed to ensure a constant proportion of saving to income. Thus, in consonance with the Harrod formula, steady growth entails a constant capital/output ratio, in value terms. This is maintained because the shirt wage rate rises with the shirt-value of overall output per head, and the shirt-value of leets per man rises proportionately.

Meade's assumptions also ensure that the relative shares of wages and profits in the value of output are constant through time. With a constant capital/output ratio and a constant profit/output ratio, it follows that the rate of profit on capital is constant through time, just as in a golden age.

The nature of leets ensures that the composition of the stock of capital is instantaneously adjusted to whatever occurs. The question of appropriate initial conditions therefore does not arise.

FACTOR PRICES NOT EQUALIZED

THE queer methodology nowadays acceptable in our subject is exemplified in *An International Comparison of Factor Costs and Factor Use*[1] all the better because Dr. Minhas is an exceptionally bold and skilful practitioner of it. One cannot but admire the courage with which he leaps from a skyscraper of abstract assumption on to the hard facts. *C'est magnifique, mais ce n'est pas la science.* It would be better to descend step by step to the level of *a priori* plausibility before beginning to test the assumptions.

The study takes its origin in the kind of exercises in comparative statics in which countries are endowed, in given proportions, with factors of production, each homogeneous over the wide world, supplying commodities each of which also is exactly the same wherever it comes from. The production function, in factors and output, is the same for each commodity in every country. There is full employment and perfect competition within each country and in world markets. Transport costs and tariff are not important. Trade for each country always balances, so that no international capital movements take place.

According to a famous proposition of Professor Samuelson's, set out in terms of two factors, two products and two countries, when the proportions of the factors are different in the two countries, trade between them must lead either to at least one country becoming completely specialized in the production of one commodity, or to equal factor prices in the two countries. This proposition requires the assumption that technology is such that the commodity which is more labour-intensive at one level of real wages is more labour-intensive at all.

Samuelson stated his proposition in terms of labour and land and invited us to think of two commodities such as wheat and nylon stockings. This makes the factor-intensity assumption seem plausible. But there is not much future in considering problems

[1] By Bagicha Singh Minhas (Amsterdam: North-Holland Publishing Co., 1963).

Quarterly Journal of Economics (Cambridge, Mass.), May 1964.

of international trade under the assumption of world-wide homogeneity of land. Tea must be grown in tea gardens, and copper mined from deposits of copper ore. The homogeneity assumption makes more sense when we think of both products as manufactured and of the second factor as 'capital' which, if the production functions are alike in the two countries, can be adapted to the appropriate concrete form. Then the assumption that relative factor-intensities of the two commodities do not vary with the real wage becomes unplausible. If it does not apply, the high wage country and the low wage country can both produce both commodities and factor-price equalization is inhibited. All this has been worked over by a number of writers who enjoy pure economic logic for its own sake and it is now generally accepted. These propositions are to be applied by Minhas to actual data.

He is properly cautious about the selection of commodities—the same name in censuses of production may cover goods that differ considerably both from the point of view of consumers and from the point of view of the technology appropriate at given factor-prices. However he considers that the outputs of industries called by the same name in different countries are near enough alike to get the argument started.

It is easy to find countries with widely different wage rates (money wages converted to dollars at the ruling exchange rate). If these countries correspond to points on a production function we should expect to find a high rate of profit in the low-wage country, and low in the high. But of course we expect nothing of the kind. However imperfect the world capital market may be, large national differences in the yield of shares (of more or less the same credit standing) could not be continuously maintained. And large differences in the marginal efficiency of investment would lead to great flows of capital (high home investment offset by a surplus of imports) as happened in the nineteenth century. There is nothing of this kind in the picture. The rate of profit, on the admittedly rough measure that is possible, appears to be about the same in the various countries. Then they are not points on a single production function.

One would have supposed that this would bring the whole skyscraper down with a flop. But not a bit of it. Relying on some work which he did under the aegis of a distinguished array of

American professors,[1] Minhas tells us that the differences between countries are neutral as between capital and labour, so that the production functions for the various countries are all iso-elastic.

The difference in productivity covers differences in the personal efficiency and diligence of workers; differences in management; differences in the extent of shift working; differences in the climate, transport system, and so forth; differences in economies of scale in the particular industries, and still more in the scale and specialization of the whole country's economy; as well as the differences in technology which the production function is supposed to represent; furthermore it reflects any systematic difference there may be in the skill with which firms select their technology, for of course actual managers are never quite so good at producing a given output at minimum cost as the ideal entrepreneur is assumed to be.

What is the meaning of the assumption that there is a basic elasticity of substitution between 'labour' and 'capital' which is unaffected by all these differences?

There are further difficulties in the concept of the factors themselves. For labour we observe the convention that a man's a man for a' that, or rather a man-year is a man-year. 'Capital' is measured by the book value of the assets of firms. Conventional systems of depreciation admittedly create large differences between 'capital' per man in this sense and the factor ratio of static theory. A worse difficulty arises from differences in the pattern of relative prices in different countries. The purchasing power of a dollar's worth of yen, of sterling, or of rupees is much the same over internationally traded goods at f.o.b. prices, but it is vastly different over non-tradable home products, among which construction, transport and improvements of land are important items. A dollar's worth of book value of capital therefore has a totally different concrete content in different countries. What are the 'factors' that the elasticity of substitution is supposed to operate upon?

If all these objects could be met, a worse remains. The production functions which are assumed iso-elastic to each other are supposed to represent the state of technical knowledge as it exists today. This is the production function that appears in the

[1] K. J. Arrow, H. B. Chenery, B. S. Minhas and R. M. Solow, 'Capital-Labour Substitution and Economic Efficiency', *Review of Economics and Statistics*, XLIII (Aug. 1961).

static theory. It is somewhat of a tall order to suppose that this technical knowledge is the same in each country at a given date, without any patents, trade secrets, or differences in all-pervasive know-how, as well as managerial capacity to apply knowledge. But even if the *ex ante* production function from which choices for current investments are being made were in some sense the same for any one industry in each country, we should not be able to see it in the statistics. The capital equipment in existence at any moment in each country has been built up over a long past during which there has been an accumulation of technical knowledge, with changing compositions of output, changing levels of activity, changes in the personal efficiency of workers and the skill of management, changes in the over-all scale of industry and in the scale of particular enterprises, and many other influences.

The *de facto* relation of cost of capital per man to output per man reflects differences between one country and another in their past history for varying lengths of time (since the age of equipment is not the same in all). Nothing that we can learn from comparisons between them will tell us anything about what choice of technique *would have been made*, in any one of them, if the level of real wages *had been* different, at some date, from what actually it was.

If ever there was a case of looking in a dark room for a black cat that we are pretty certain is not there, it is looking for a static production function in international statistics.

It is a sad comment on the state of education that a talented young man should be fetched from India to be bamboozled like this.

There is no reason, however, why the statistical work should be wasted if we can interpret it with concepts drawn from nearer to ground level.

For instance, let us compare industry in the United States and in Japan, where differences are so large that they ought to show up in spite of all the imperfections in the figures.

We expect to find value added per man-year much higher in the United States because of more advanced technology, greater economies of scale in industry as a whole and in some cases in individual industries also, more efficient management, and so forth. It would not be surprising for American industry to be more capital-intensive also. Industry in the United States grew up

under conditions of scarcity of labour, with high profit-expectations to make finance for investment easily available. We should expect therefore a capital-using bias in the technology evolved there, compared with Japan, where the labour supply was always superabundant, and capital-saving techniques were consciously sought for. Moreover we should expect quite a lot of straightforward substitution in the production-function sense, for even when two industries are working with the same central type of equipment, there are many ancillary tasks—packing, handling, transporting, etc.—which in a high-wage country are mechanized and in a low-wage country performed by hand and foot.

Thus if the rate of profit were the same in the two countries, we should expect to find the share of wages in value added somewhat lower in the United States. The over-all figures quoted show the reverse. Unfortunately they apply to a pair of years in which the over-all rate of profit was markedly higher in Japan. The share-of-wages comparison is therefore presumably showing up different degrees of short-period utilization of equipment rather than long-period differences in capital per head. Could this be eliminated by a different choice of years, so that we can catch a glimpse of the long-period relationships? If the United States is the high-share country with equal profit rates, the factor-ratio concept will be pretty thoroughly discredited.

There are interesting differences within each country between different industries. In the United States, the author tells us that differences in the rates of profit can be 'explained' by differences in the concentration ratio and in the rate of growth of output. (Here he has descended from his skyscraper and is asking answerable questions.)

There is a considerable variation of wages between industries; much greater in Japan than in the United States. Are low-wage industries, high-share industries? And if so, is it because of substitution, or are they also low profit industries, for short-period reasons (they are depressed) or for long-period reasons (they are easy to enter on a small scale)? We should expect low-wage industries rather to be low-share industries—low wages being due to weak bargaining position of the workers and a high rate of exploitation. In the over-all national figures, the contrast between Australia with a share of wages in value added of about 60 per

cent and Nicaragua with less than 30 per cent, alerts us to the importance of this influence.

There is no particular reason why these influences should work in the same way in industries called by the same name in different countries. For instance, iron and steel has a rate of profit above the average for the country in the United States and Canada, and much above in India; while it is slightly below average in the United Kingdom and appreciably so in Japan.

Much fascinating information could have been distilled from the research that lies behind this book, and many fresh questions opened up. As for international trade, a wisecrack quoted from Samuelson, that the export of tropical fruit from the tropics is due to the prevalence of tropical conditions there, seems to be the most hopeful starting point.

SOLOW ON THE RATE OF RETURN

THE three lectures delivered by Professor Solow at the F. de Vries Foundation[1] are full of sharp observations and interesting asides. The main theme is the reinterpretation and defence of the concept of marginal productivity, which provides an occasion to try to advance towards a better understanding of the latter-day neo-classics.

I

He opens boldly by asserting that everyone except Joan Robinson agrees about capital theory. However, there is one point on which I agree with him—that the notion of factor allocation in conditions of perfect competition makes sense in a normative theory for a planned economy rather than in a descriptive theory for a capitalist economy, and that the notion of the marginal productivity of investment makes sense in the context of socialist planning. I have tried to start students thinking along these lines.

For the planner who takes over at a particular moment in history there are in existence certain concrete means of production, and 'a given state of knowledge' that includes all the techniques that have been in use anywhere in the world since 1760. The cost to society of a slightly greater amount of investment this year can be expressed in terms of the consumption that has to be forgone. For instance, if there is an excess of available labour over the employment offered by equipment for producing consumable commodities, which is the typical state of affairs in underdeveloped economies, the cost to society of labour employed in investment is zero. The benefit to society of a little more rather than a little less investment this year is derived from the additional means of production that it creates. Professor Solow measures this benefit by the amount of extra consumption that could take place next year without reducing future growth below the amount

[1] *Capital Theory and the Rate of Return* (North-Holland Publishing Company, Amsterdam, 1963).

Economic Journal (London), June 1964.

that would have been achieved if the extra investment had not taken place. This seems to be somewhat arbitrary. The purpose of investment is to increase productive capacity. Why work out what would happen if it were disinvested again next year? It would be very troublesome to make the calculation. The planner, who must be concerned with long-lived installations, has to think in terms of alternative paths to be followed over the next twenty years or so, and even a small change in the amount of investment decided upon this year may require extensive changes in the physical specifications of the plan over a long future as well as for this year. And so does the consumption to be permitted next year. However, Professor Solow admits that his is only one possible measure of the marginal productivity of investment from the point of view of society, and I have argued that it can, in principle, be measured; if everyone else is of the same opinion, so much the better.

The difficulty is to connect this line of thought to the neo-classical theory of distribution. We may postulate that, in the planned economy, consumable income is distributed as wages, and that all production can be divided into outputs of consumable commodities and capital equipment (abstracting from armaments, social services, etc., and from investment in working capital). Then, labour in the two sectors being alike, the real wage bears the same proportion to the average output per man employed in producing commodities that employment in that sector bears to total employment. (When 20 per cent of labour is otherwise employed the wage is 80 per cent of the average output of a man in the commodity sector.) It has nothing whatever to do with the marginal product of labour. This is most sharply seen in the extreme cases, where the marginal product of labour in the commodity sector is zero because all plant is already working to capacity, and where it is equal to average productivity, because there is idle plant of not less than average quality. (This might occur where the planner has taken over an economy which was formerly saving less than he now decrees.)

How can this be reconciled with the neo-classical micro-economic proposition that in conditions of perfect competition (abstracting from interest on working capital) the marginal product of labour equals the real wage? Logic is the same for everyone. There cannot be a special kind of neo-classical logic.

When Professor Solow and I make the same assumptions we ought to come to the same conclusions, errors and omissions excepted.

Let us take his assumptions. All output consists of a homogenous physical substance, let us call it butter for short. There is a proper neo-classical production function with butter as output and labour and butter as input. With a given heap of butter in existence, there is a definite marginal product, at full employment of the labour available, being the output of butter lost when one man-year of labour is withdrawn. This is, evidently, independent of the consumption of butter. The wage, however, depends upon the proportion of the year's output of butter that is to be added to stock.

Now consider a capitalist economy with the same labour force, the same quantity of butter in existence and investment plans which will cause the same quantity of butter to be added to stock, as in the planned economy. First take a case where the level of investment is rather low, so that in the planned economy the wage-rate would exceed the marginal product of labour. If, in the capitalist economy, the wage was equal to the full-employment marginal product, the wage bill in terms of butter and the amount of butter put to stock would not exhaust full-employment output. Full employment could be realized only if the capitalists consumed a sufficient amount of butter.

If workers save some of their wages, consumption of unearned income has to be all the greater.

Perhaps it is helpful to introduce a money price of butter into the argument. The wage-rate is fixed in terms of money, and butter is sold for consumption. If the only purchasers are the wage-earners the total gross profit on the sale of butter for consumption cannot exceed the wage bill for the butter added to stock. With butter selling at this price the value of the marginal product of labour at full employment is less than the wage. *A fortiori* it is less than the wage *plus* interest on the wage fund, which is the marginal cost of employing an additional man with a given quantity of butter. Therefore employment must be sufficiently less than full to ensure that the higher physical product per man, together with the larger gross profit per unit of butter sold, raises the value of the marginal product to equality with the marginal cost of labour to an employer. Alternatively, capitalists may spend

a sufficient proportion of their profits on consumption of butter to secure full employment.

When the rate of investment is so high that, in the planned economy, the wage would be less than the marginal product at full employment there would be excess demand for labour in the capitalist economy. In money terms the wage-rate would be bid up by employers eager to get hands until some action was taken to check the inflation. Either investment must be checked or there must be a levy on wage-earners to reduce consumption.

Given the propensities to consume of capitalists and workers, when the rate of investment is such as to secure full employment without excess demand for labour, the marginal product of labour at full employment is equal to the wage plus interest on the wage fund.

Once the real-wage rate is known, with given technical conditions we know the share of gross profits in the value of output. In the butter economy we can calculate the rate of profit on capital (after slipping in a proviso that the value of a stock of butter is independent of its age). But Professor Solow agrees with me about the difficulty of giving a meaning to the value of capital, and therefore to the rate of profit, outside the butter economy, in a short-period situation with an arbitrarily given stock of means of production.

The expected rate of profit on new investment (which may be supposed to influence decisions of capitalists) depends upon what they expect to happen to prices and wages in the future. If they project the present prices of various products (abandoning the butter assumption) they will see different rates of profit on different investments, and presumably each investor will go in for the lines within his sphere of competence that promise the highest rate. Over the long run there is a tendency in Marshall's sense, for the rate of profit towards equality in different lines. But this arises because each individual capitalist wants to get the best return on his individual investment. There does not seem to be any reason for the planner to act so. He may have worked out the marginal productivity of investment in some sense, but he does not care about the expected rate of profit, while the capitalists are interested in the rate of profit and do not care about marginal productivity.

II

In the next lecture the scene changes. The economy gets into long-period equilibrium, with a constant rate of profit. This must mean that all products are selling at normal prices, in the sense that gross margins cover depreciation and profit at the ruling rate on the value of equipment and working capital involved in production. At any moment, with given technical conditions, the real-wage rate is then determined. Technical progress is going on and full employment is being preserved. To simplify, let us suppose that employment is constant. Output is then growing at the rate, g, at which output per head is rising—the 'natural' rate of growth in Harrod's sense.

Now that we are in equilibrium I do not see why we should not talk about the value of capital. When the share of net profit in the value of net output (reckoned in terms of commodities) and the rate of profit are both constant the value of capital is growing at the rate g. If K is the value of capital and I a year's net investment, $I/K = g$. When all wages are consumed, $I = sP$, where P is net profit and s the proportion of net profits saved. Then P/K, the rate of profit, is equal to g/s.

These are merely accounting identities, but it is useful to keep them in mind.

For Professor Solow, however, 'capital' is something physical. The discussion of technical progress is not easy to follow because, in spite of all his good resolutions, he frequently refers to the quantity of 'capital' without saying what it is a quantity of.

In the case of purely disembodied progress, which affects old plants, not merely the blue-prints for new ones, presumably 'capital' means a stock of equipment. When employment is constant and equipment is being kept intact, disembodied technical progress is raising the output of commodities at the rate g, Since the rate of profit is constant, the real wage-rate must be rising at g. Once more it simplifies matters to bring money wages into the argument. Let us postulate that the money price of commodities is constant. Then the money wage-rate is rising at g; the reproduction cost, and therefore the money value, of the stock of physically unchanged equipment is rising at the same rate.

A kind of technical progress can be conceived in which physical equipment per unit of output remains constant, while output per

man both in producing equipment and in producing commodities rises at a steady rate. (Cloth per loom remains constant, but the number of looms that a weaver can mind is rising at the rate g, and so is the number of looms produced per man employed in the investment sector.) This seems to be the picture that Professor Solow has in mind when he discusses embodied technical progress. He mentions, but does not elaborate, the case of truly embodied progress, where improvements are made in the design of equipment, which is therefore continuously changing in physical form. In golden-age conditions, with a constant rate of growth and a constant rate of profit on capital (which entails that real wages are rising at the rate g), all three kinds of technical progress come to much the same thing.

In Professor Solow's scheme there is also a production function. What does this mean? Presumably we are invited to consider a number of economies, all being presented with the same series of technical possibilities as time goes by, each with a different rate of profit. An economy with a lower rate of profit has a higher real-wage rate at any moment of time, and, measuring equipment in units of productive capacity, a larger stock of equipment.

The locus of points corresponding to the positions of these various economies at any moment is not, strictly speaking, a production function. It is similar to Professor Samuelson's so-called 'surrogate production function' and my 'real-capital-ratio curve', which show the possible positions of stationary long-period equilibrium compatible with one 'state of technical knowledge' in the sense of the book of blue-prints exhibiting the technology known at one moment in history. But there is a new book of blue-prints every year, the same for all the economies, and the locus of possible equilibrium points corresponding to each new book has the same shape all the time.

This seems to be an extremely implausible concept and quite unnecessary to the development of the analysis. Professor Solow has evidently introduced it out of piety to neo-classical traditions.

He tells us that his production function is Cobb-Douglas, but he does not say what the 'capital' which has a unit of elasticity of substitution with labour consists of. In each economy, with a different rate of profit, the pattern of relative prices of different products must be quite different (unless a fresh lot of fudge or butter is introduced into the assumptions) and the physical

specifications of equipment are different (even in the looms-to-weaver kind of technical progress, looms at a later date that can be minded by fewer weavers are in some way different from earlier ones). Does the Cobb-Douglas nature of his production function mean that in all the economies, by a queer fluke, the share of wages in net value of output is the same? And if so, why is it interesting? Or does it mean that there is some idiosyncrasy in the technical conditions (in terms, say, of the number of man-years of work required, in each economy, to provide a man with the latest equipment for producing commodities) which makes 'labour embodied' in the stock of equipment proportional to output in the various economies? Or what?

There is also a short-period relation between employment and output, which we may call a *utilization function*, to distinguish it from a production function. It shows product per man falling as more labour is applied to given plant. In each economy, therefore, there is an intensive and an extensive margin, the marginal physical product of labour on the best plant in existence in each line at any moment being equal (under perfect competition) to the average product of the oldest, the value of both being equal to the wage, or rather to the wage plus interest on the requisite wage fund. This short-period utilization function has the same shape in each economy, and retains its shape as productive capacity grows. It, also, is said to be Cobb-Douglas, which presumably means that, in perfect competition with the value of the marginal product of labour in each line equal to the marginal cost of labour to an employer, the share of the wage bill in the total value of output is the same at each level of utilization.

All this seems to be a perfectly unnecessary piece of piety that complicates the argument without enriching it.

Let us concentrate on any one economy, chugging along with a constant rate of profit. From a highly fashionable proposition in neo-neo-classical economics, we know that, when the rate of profit is higher than the rate growth, consumption exceeds the wage bill. Suppose that a planner took over an economy in this condition and decided to impose a greater rate of saving upon it for a time, so as to reach a position with a higher level of consumption, at some date in the future, than would have been reached on the former path, while continuing from then on to realize the former growth rate. (The growth rate that can be

permanently maintained is the 'natural' rate given by autonomous technical progress.) The planner cuts down consumption and transfers some workers permanently from the commodity sector to the investment sector. It takes a period equal to the length of life of plant for the extra investment to build up a balanced stock of productive capacity at the higher level. During this period, with the larger output of the newest type of plant, more old plant than formerly has to be scrapped to release labour to man it. Average output per head in the commodity sector is rising at a faster rate than that given by technical progress. There is no need to bring the mysterious production function into the argument. Output per head rises because the proportion of the newest type of equipment in the total stock is increasing. When a balanced position is reached again the length of service life of equipment has been reduced, all plant older than the new maximum age has been scrapped and the economy has settled down to steady growth once more, having made a step up above the old path.

In such a case we could reckon the cost of making the change in terms of consumption forgone during the transition from the old path to a higher one, and so arrive at the marginal productivity of investment from the point of view of society.

This is not how Professor Solow looks at it. He considers the effect of making a little more investment in one year only, and allowing additional consumption thereafter to carry the economy back to its old path.

To see what this involves we may take a simplified example. Technical progress is fully embodied—at each round of gross investment there is a new blue-print for superior plant that raises the output of commodities per worker employed. Suppose that ten vintages of plant co-exist in the commodity sector, each manned by a cohort of 100 teams of men. One plant employs one team throughout its life. Taking a year as the gestation period for plant, each vintage is used for ten years. At the end of that time the real wage has risen to absorb its whole output and it is scrapped. Now, when plant of vintage V_{10} is being constructed, the capitalists, by consuming less than usual, release resources to have 101, instead of the usual 100, plants built. Thereafter they return to building 100 a year. To man the extra plant, a team must be taken from vintage V_1 which is entering its last year of life. Next

year only 99 teams are released when the remaining V_1 plants are scrapped. A team has to be taken from V_2 to man the hundredth V_{11} plant, and so on until V_{10} enters the last year of its life. One team is then transferred to V_{19}. At the end of the year the remaining 100 teams are released, and go to V_{20}. The normal position is then restored.

Now, the additional output, over and above what would have been available without the extra V_{10} plant, in the first year consists of the output of one V_{10} team minus the output of one V_1 team. The V_1 output was scarcely more than the real wage of a team at the rate then ruling. Thus the additional output this year is equal to the quasi-rent on a V_{10} plant in the first year of its life. Next year the additional output is the output of a V_{10} team minus the output of a V_2 team, which is approximately this year's wage. It is thus equal to the quasi-rent on a V_{10} plant in the second year of its life. And so forth. The additional output, over the ten years, is equal to the series of quasi-rents of a plant, which yields the normal rate of profit on its initial cost. Thus (assuming that the economy was flexible enough to permit one extra plant to be built without additional cost) the extra consumption is equal to the rate of profit on the extra investment.

The argument is certainly ingenious, but what is it supposed to prove? There is a suggestion that Professor Solow thinks that it proves that the rate of profit must be higher when the pace of technical progress is faster. This is evidently not correct. A higher g (other things equal) requires a larger proportion of gross investment to output, but this may be offset by correspondingly greater thriftiness of the capitalists, that is by a larger proportion of profits being saved, so that the rate of profit is no higher in a high-g economy than in a low-g economy. In the low-g economy the difference in productivity between one vintage of plant and the next is lower than in the high-g economy, but the greater consumption out of profits depresses the real wage and makes the life of plant longer. Thus the difference between the output of the latest and the oldest plant at any moment is no less than in the high-g economy.

The rate of profit is constant because the rate of accumulation (which is here equal to g) and the excess of consumption over the wage bill are such as to keep it so. Professor Solow has managed to find a marginal something that is equal to it, and so has

satisfied his piety in the manner of those modern parsons who say that they believe in the Virgin Birth, but only in a Pickwickian sense.

III

In the third lecture Professor Solow sets out to find, from actual statistics, the production function which piety obliges him to say that he believes to exist. However, it turns out that the production function is in terms of labour and the 'effective stock of capital'. This effective stock of capital is the actual plant in existence weighted by its productivity. Thus as output per head gradually rises with technical progress, whether embodied or not, the effective stock of capital grows.

Now, Professor Solow purports to be able to divide the rate of growth of output per head between the contribution due to technical progress and a contribution due to the increase in 'capital'. He works out what increase in 'capital' would have produced the observed increase in output per head if there had been no technical progress. Here is a mystery indeed.

The clue seems to lie in the short-period utilization function. With given plant in existence, in perfectly competitive conditions, a reduction in employment leads to a rise in output per head. The marginal physical product of labour in each line of activity rises, for the least efficient plant is put out of action and the intensity of cultivation of more efficient plant reduced. (If there were no short-period diminishing returns there could not have been perfect competition in the first place.) It seems that having postulated a short-period utilization function of a particular form, Professor Solow concludes that a comparable rise in output per head would take place if the ratio of 'capital' to labour were increased by investment, with constant employment. To adapt Sir Dennis Robertson's example, nine men with nine spades are digging a hole; dismiss eight; then we are to deduce from the productivity of one man with all nine spades what his productivity would be if he were working a bulldozer.

In his first lecture Professor Solow seemed to admit that it is impossible to describe the plant in existence at any moment as a quantity of capital. It is a specific stock of equipment of various kinds, built in various past phases of technical development.

How can we deduce from actual outputs with different amounts of employment (which might be discovered over the course of short-period fluctuations) what productivity would have been if there had been no technical progress in the past, or what plant would be added to the stock if investment now took place without technical progress in the future?

It seems as though Professor Solow has, after all, never really emerged from his butter economy, where future and past melt into one. If everyone except me is perfectly happy to stop there I wish them joy.

The upshot of the statistical investigation appears to be that the rate of profit is about the same in the United States as in Germany, and in both much above the rate of growth. This indicates that the length of life of obsolescent plant is above the optimum and that more investment, matched by more saving out of profits, would be a jolly good thing. With this we can all agree.

Postscript

The reference to interest on the wage fund on p. 38 has been added to the original text. Trying to meet Professor Solow on his own ground, I made a concession which is not really feasible. The orthodox micro-theory of perfect competition is that the individual employer, in short-period conditions with a given stock of equipment, offers employment to such a number of men as to equate the marginal cost of labour to him to its marginal product for him. Prime costs other than wages (for raw materials, power, etc.) are eliminated by postulating complete vertical integration, and user-cost of plant is ignored. Even then it is not true that the marginal cost of labour is merely the wage. The marginal product of a certain number of men must make it worthwhile to employ that number; it must compensate for the interest, as well as the wage, which would be saved by employing somewhat fewer.

In any case, of course, this line of thought is not applicable to modern manufacturing industry, where prices are formed by adding a margin to prime cost. The short-period marginal product of an additional man-week of employment with given plant (abstracting from materials, etc.) is equal to the wage plus the gross margin.

All this may appear to be mere logic chopping, but it points to the source of the trouble. The neo-classical theory of distribution is derived from a model in which land and labour are the only factors and no capital equipment is used. But if there is a wage, there must be an employer. When wages are paid in arrears, out of the harvest, the workers are lending to the landowners, and their income represents wages plus interest on their subsistence over the period of production. When wages are paid in advance, the cost of labour to the landowner includes interest. Either way, the marginal product of labour exceeds the wage by an amount equal to interest on the required wage fund. As Marshall pointed out, the only correct statement of the orthodox theory is the circular one: in equilibrium conditions of perfect competition the marginal *net* product of labour to the individual employer is equal to the wage.

In the original version of this paper, I did not mention interest on working capital as it is not relevant to the main point. When we accept all Solow's assumptions, it is still possible to say only that the marginal product of labour is determined by the short-period technical conditions (shown in the utilization function) and the state of effective demand. Unless effective demand happens to be just right, the marginal product will not be at the level which corresponds to full employment. This could be said perfectly well without assuming the butter, and, with the butter, we can say no more.

ROBINSON ON FINDLAY ON ROBINSON

Dr Findlay[1] has set out the formal relations of the model in my *Accumulation of Capital* more succinctly than I was able to do. He shows how Harrod's truism—$g = s/v$—can be elaborated by making s (the share of net saving in total net income) a function of the share of profit in income; and by showing that v—the ratio of the value of capital to total annual net income—is affected by a difference in the rate of profit even when technical coefficients are fixed, through the difference in the relative prices of capital goods and consumer goods which it brings about, one way or the other, except in the case where the capital/labour ratio happens to be the same for both groups of products. (The latter case is sometimes described as a 'neutral Wicksell effect'; the case where given capital goods have a higher value in terms of consumer goods at a lower rate of profit, as a 'positive Wicksell effect', since this is what Wicksell himself regarded as normal; and the converse case as a 'negative Wicksell effect'.) He shows that introducing the second complication without the first upsets the apple cart, for, when the capital/labour ratio is higher for the production of capital equipment than for consumption goods, a lower rate of profit is associated with a lower cost of given capital goods (a negative Wicksell effect) and consequently may entail a *lower* capital/output ratio in value terms for a *more* 'capitalistic', that s, more highly mechanized, technique of production. Thus v in the formula not only fails to measure 'capital intensity' but may actually move in the opposite sense; the generalization that a higher ratio of saving to total income necessarily tends to lead to greater 'capital intensity' is shown to be invalid.

All this is very neatly expressed, but the model has been formalized in such a way as to deprive it of significance. It seems ungracious to complain of a reader who has taken so much trouble on my behalf, but perhaps it might be useful to any other readers that I may have to explain how my own ideas about my model differs from his.

[1] 'The Robinsonian Model of Accumulation', *Economica*, February 1963.

Economica (London), November 1963.

Findlay has emptied causality out of the model by standing it on its head. He bases his interpretation on an Accumulation Function according to which the level of the real-wage rate (modified by technical conditions and the propensity to consume of capitalists) determines the rate of accumulation of capital. This is all very well in a Ricardian world where the wage rate is fixed in terms of corn. Technical conditions in the production of corn then determine the rate of profit on capital. Each individual capitalist decides how much of his share of corn to devote to investment. But when the wage bargain is made in terms of money, the real wage depends upon the level of prices. When all wages are spent on consumption, the overall gross profit on the sale of consumption goods corresponds to the expenditure of capitalists, taken as a whole, on consumption and investment. In my model the rate of accumulation and the propensity to save out of profits are the independent elements that determine the rate of profit on capital; while the rate of profit, together with technical conditions, determines the real wage. When there is a variety of known techniques, the prospective rate of profit governs the choice made amongst them. Thus when the rate of profit is given, the appropriate stock of capital is determined, in physical form, in real cost and in value. The prime mover in the whole affair is the overall rate of accumulation which emerges from the struggles of individual firms to increase their productive capacity.

Even on the purely formal plane, Findlay overlooks some important distinctions. For instance, he pays a lot of attention to the Wicksell effect (especially when it is strongly negative, so as to produce paradoxes from a neo-classical point of view) but he does not seem to be aware of how it arises. When we discuss saving and net additions to wealth, we are thinking in terms of value; when we deal with investment and additions to productive capacity, we are thinking in terms of physical equipment and work in progress. The difference between these two aspects of capital is concealed, not explained, in models which purport[1] to abolish the distinction, by assuming, for instance, that capital equipment and consumption goods are all made of one homogeneous substance.

[1] They do not altogether succeed. A neutral Wicksell effect is not sufficient to make the value of given capital goods independent of the rate of profit, for the Wicksell effect is concerned only with the first cost of capital goods. The value of a stock of equipment also depends upon the length of life of equipment and the rate of profit, in the manner illustrated by the Kahn-Champernowne formula.

Similarly, Findlay does not seem to recognize any difference between a comparison of equilibrium positions, each with its own past and its own expectations about the future, and the analysis of a process going on through time, with expectations changing.

In long-period equilibrium, expectations held in the past about today are proving correct; each individual firm is assumed to have chosen the technique of production that maximizes the rate of profit on its capital; this entails that the marginal net product of labour is equal to the real wage; the thriftiness conditions are such that the rate of profit is compatible with the rate of growth (which may be zero). Neo-classical and Keynesian equilibrium conditions are both satisfied.

A process of deepening the capital structure can be imagined to occur (as Findlay shows) with both sets of equilibrium conditions satisfied, a falling rate of profit being associated with deceleration of accumulation and rising real wages associated with rising marginal net product, though no one has shown how the economy can be supposed to be kept on the equilibrium path.

These are both exercises in pure economic logic. Harrod intended his model, rather, to throw some light on reality. There is a missing link in his argument. With given technical conditions and a given rate of profit, the value of v (the capital/income ratio) and s (the ratio of saving to income) are determined. Thus technical and thriftiness conditions determine the growth rate compatible, in equilibrium, with the given rate of profit. What is lacking in Harrod is a theory of what determines the rate of profit. Once it has been supplied, it is easy to turn the proposition: with a given saving ratio, only one rate of growth is compatible with a given rate of profit, into the proposition: with given thriftiness conditions, the rate of growth determines the rate of profit.

This brings out all the more clearly the importance of Harrod's antinomy between the 'natural' rate of growth of the effective labour supply and the rate of accumulation of capital that satisfies the capitalists. My model is intended to show that when the urge to accumulate ('animal spirits') is high relatively to the growth of the labour force, technical progress has a tendency to raise the 'natural' rate of growth to make room for it, so that near-enough steady growth, with near-enough full employment may be realized (though even then uncertainty may give rise to short-run

instability). In the converse case, the existence of a growing surplus of labour, though it may slow down technical progress, cannot be relied upon to bring the 'natural' rate of growth down to equality with the sluggish rate of accumulation.

Dr Findlay maintains that monetary variables have been left out of the picture. When investment is the mainspring of the mechanism, this is evidently not true. One of the reactions that may drag an economy off the path of steady growth is a failure of the quantity of money to expand sufficiently to prevent the rate of interest from rising as total income grows, so putting a drag on investment. On the other tack, the operation of what I have called the *inflation barrier* which checks an acceleration of accumulation that threatens to depress the real-wage rate intolerably, is an essential part of the analysis.

He ends with a brief discussion of the lineage of the latter-day models: 'Behind Harrod and Domar there is Keynes; beyond[1] Solow and Swan there is Wicksell; and behind Mrs. Robinson there is Marx.' This is more epigrammatic than correct. He does not mention what I think is the most interesting and important Marxian idea incorporated in my model—that excess demand for labour speeds up technical progress; he himself shows how large a part Wicksell's conceptions play in it (other critics complained, I think more justly, that I made too much fuss about them); the Keynesian elements were spilled out when he stood the model on its head. And he fails to mention Kalecki who provided an essential clue: the workers spend what they get and the capitalists get what they spend. I would prefer to claim all four amongst the progenitors of my model.

[1] Is this a misprint? Or does it mean that Solow and Swan are retrogressive?

HARROD'S KNIFE-EDGE

In the discussion aroused by Sir Roy Harrod's *Dynamic Economics* there has been some confusion between the *existence* of a possible steady-growth path and its *stability*.

(1) The famous formula $g = s/v$ applies to the accumulation of the stock of capital. Harrod's neutral technical progress, which raises output per man hour of labour uniformly throughout the economy, can be treated as equivalent to growth of the effective supply of labour. Thus n, the 'natural rate' can be regarded simply as the rate of growth of the available labour force.

Given s, the ratio of net saving to net income, and v, the ratio of the value of capital to the net income of, say, a year, g, the percentage rate of growth per annum is determined. There is only one value of g which (provided that it does not exceed n) is not impossible. The uniqueness of g, not any question about the stability of the corresponding growth path, created the problem of the knife-edge.

To get off the knife-edge by the neo-classical route requires some construction such as Professor Meade's leets.* An elastic production function in leets and labour ensures that v can take on any value. Thus, with s given, no value of g between zero and n is impossible. Then g is put equal to n and there is nothing more to discuss.

Without the help of leets, this escape route is precarious. For any growth rate (g), a higher s entails a higher v. According to the neo-classical point of view greater thriftiness (a higher value of s) entails a lower rate of interest and more capital-intensive methods of production. But, with a lower rate of interest, the cost in terms of commodities of a given physical stock of capital may be lower (a negative Wicksell effect) and the value of a stock of given cost must be lower (a Kahn-Champernowne effect). Thus v cannot be relied upon to respond sufficiently, or even in the right direction, to differences in s/g. The knife-edge is only slightly blunted.

Not previously published.

* See p. 23.

This difficulty arises from adhering to Harrod's original assumption that the ratio of saving to income (s) is indepcndent of the distribution of income between wages and profits. The difficulty disappears if we make the assumption (which is much less unnatural) that saving comes only from profits.

Let s_p be the proportion of profits saved. Then the rate of profit on capital is g/s_p. The share of profit in income is gv/s_p. Then

$$\begin{aligned} s &= s_p(gv/s_p) \\ &= gv \end{aligned}$$

Given the value of s_p, a higher value of g, entailing a higher rate of profit, may be associated with a higher or a lower value of v, as we have just seen.

In the fluke case where the value of v is invariant to the rate of profit, the share of profit, and therefore the share of saving in income (s), is proportional to the rate of profit, which (with given s_p) is proportional to the rate of growth (g).

When a higher rate of profit is associated with a lower value of v, the share of profit is less than proportional to the rate of profit. Indeed, v might be so much lower that a smaller share of profit in income is associated with a higher rate of growth. But, even so, the consequent reduction in the saving ratio exactly matches the reduction in the investment ratio required (because of the much lower capital/output ratio) to maintain the higher growth rate.

When a higher rate of growth is associated with a higher value of v (the case which stymies the neo-classicals) the share of profit is raised sufficiently (by depressing the real-wage rate) to provide the required saving.[1]

Thus, on the assumption of no saving out of wages, it is not impossible for g to have any value between zero and n[2].

[1] In the first edition of my *Accumulation of Capital*, p. 406, there was an error on this point. Having been corrected twice subject to the need for matching the number of letters in the paragraph, the passage as it appears in the second edition is not as perspicuous as it might be.

[2] Intermediate assumptions, which allow some saving out of wages, require the story to be filled in with an account of what happens to the profits received by worker-capitalists (cf. L. L. Pasinetti 'The Rate of Profit and Income Distribution in Relation to the Rate of Economic Growth', *Review of Economic Studies*, Oct. 1962). If we assume that a savings ratio is attached to each class of income, independently of who receives it, the danger of getting stuck on the knife-edge, when v rises with g, is greater the smaller the excess of the profit-savings ratio over the wages-saving ratio. For the sake of logical completeness we may remark that if the wages-saving ratio were the higher, v rising with g would make a solution possible, and v falling with g would be the dangerous case.

(2) To inquire at what values of g steady growth is possible, we must introduce causation into the model. Harrod now agrees that there was a missing link in his original formulation.[1] The rate of accumulation cannot be accounted for just by saying that investment is sufficient to absorb saving. Saving is influenced by the rate of accumulation. Moreover, the propensity to save is related to net income while investment decisions are necessarily made in gross terms.

The propensity to accumulate is generally expressed as a function of the expected rate of profit. But as we have seen, the rate of profit realized along a steady growth path is a function of the rate of accumulation. If accumulation were more sensitive to the expected rate of profit than the actual rate of profit is to the rate of accumulation, there would exist no path capable of being steadily maintained. For an equilibrium path to exist there must be some value of g such that the rate of profit the expectation of which induces accumulation at that rate is actually generated by that rate of accumulation.[2] When the propensity to accumulate is fairly inelastic, there exists such an equilibrium path corresponding to each value of s_p.

(3) We must now inquire whether such an equilibrium path is stable in the sense that, once established, it would be maintained in face of chance shocks. Harrod originally made it completely unstable. This had nothing whatever to do with the knife-edge problem, though the two seem to have been connected in his mind. The instability arose because a chance increase in expenditure relatively to a given stock of capital in existence was conceived to lead to an acceleration of investment. In short, it was neither more nor less than the familiar mechanism of a trade-cycle model. The long-run growth model is unstable in this sense if expectations are strongly influenced by current experience, and stable if they are inert.

(4) All this concerns only g, the rate of accumulation of capital. There is no indication that one of the possible growth paths (whether stable or not) must correspond to n, the rate of growth of the effective labour force; nor is there any mechanism in the model to cause it to seek such a path when it does exist.

[1] 'Are monetary and fiscal policies enough?' *Economic Journal*, December 1964.
[2] See *Essays in the Theory of Economic Growth*, p. 48, for a diagram illustrating this.

This was Harrod's original contention, which comes out all the more strongly when we see that the knife-edge was not really the point.

(5) In another sense, stability means the capacity to seek a predetermined equilibrium position from some arbitrary starting point. For this question there is nothing to bite on. The whole argument is conducted in terms of the rates of growth without any discussion of initial conditions. To discuss them we should have to descend from the generality of the equations to a particular point of time and consider the characteristics of the stock of capital in existence at that moment (unless it is made of leets, in which case the economy cannot be out of equilibrium and the question does not arise); the amount of employment offered relatively to the supply of labour available; and the habits, expectations and policies of the people concerned. A tougher kind of model is needed for such an inquiry.

PRE-KEYNESIAN THEORY AFTER KEYNES

The orthodox theory which produced the doctrines that Keynes was attacking thirty years ago had never got itself clearly stated; he was obliged to construct a cockshy to knock down. Nowadays it is being used as a basis for models set out in mathematical terms and so had to present itself more coherently. The practitioners in this line, however, are apt to be rather shy of making clear which of their assumptions are necessary to their conclusions and which are merely used to exclude inessential complications.[1]

The essential features of the economic system which appear in the pre-Keynesian models are that accumulation is governed by the propensity to save of the economy as a whole and that the wage bargain is made in terms of product. With a given amount of 'capital', profit-maximizing entrepreneurs offer more employment the lower the wage; thus, provided that there is enough 'capital' in existence to offer full employment at a positive wage, competition among workers for jobs eliminates unemployment.

The 'capital' that comes into the argument may be taken, in a short-period sense, to be the stock of concrete means of production in existence. There is then a *utilization function* relating output to employment, which figures also in Keynes' theory. What 'a quantity of capital' means in a long-period sense, when its form can be adapted to take advantage of different factor prices, in an old puzzle. Professor Solow is unable to see the problem, and treats the long-period production function as being identical with the short-period utilization function;* but most of the latter-day neo-classicals are aware of the difficulty and evade it by assuming that capital goods are made out of a homogeneous physical substance. There has been a great deal of fuss about the question of 'measuring capital' but, as we shall see, the failure of the

[1] Among innumerable works in the genre, I rely particularly upon the contributions of Professors Samuelson and Solow to the *Review of Economic Studies*, June 1962; J. E. Meade, *A Neo-classical Theory of Economic Growth*; B. S. Minhas, *An International Comparison of Factor Costs*; R. M. Solow, *Capital Theory and the Rate of Return*; and on Professor Solow's Marshall Lectures. I have also benefited very much from conversation with Dr. C. von Weizsacker, a rare neo-classical who has the candour to explain clearly what his assumptions are.

Australian Economic Papers 1965.
* Cf. p. 45.

neo-classicals to give a plausible account of it is a symptom, rather than a cause, of the real difficulties in their position.

In what follows we outline a number of questions that are discussed in terms of the neo-classical theory, stressing the assumptions and leaving the practitioners in this art to fill in the elegant details.

The Pseudo Production Function

There are a number of economies, completely independent of each other, which however have in common the composition of the output of consumer goods and the book of blue-prints setting out the physical specifications for all the known methods of producing them. The labour force in each economy is alike. It is convenient also to take the money-wage rate per man hour to be the same in each. Each is in stationary equilibrium, with zero net saving; the stock of means of production is such that no entrepreneur wishes to be using any other than those he has. The difference between the economies consists in a difference in the rate of interest (equal to the rate of profit on capital) at which zero net saving obtains.

To compare these economies there is no need to make any fanciful assumptions about the nature of capital goods or to resort to any tricks for measuring capital. In each economy there is a specific stock of means of production, a set of prices, and a level of the real wage. The value of the stock of capital can be reckoned in any convenient *numeraire*, such as a man-hour of labour or a basket of consumer goods.

As we move down the series, from higher to lower rates of profit, we may see first a group of economies identical in every physical respect, with lower money prices (since the money-wage rate is the same in each). The real-wage rate is higher as we descend the series, but the value of the stock of capital in terms of product may be either rising or falling, according as the relative prices of capital goods and consumption goods change with the change in factor prices.

Some way down the series we come to a corner where two techniques of production are equally profitable.[1] Here there is a

[1] In Professor Samuelson's version, the series is represented by a curve relating the rate of profit to the real-wage rate; the economies with the same physical capital lie on a straight line and those with the same rate of profit are at a corner. If the curve is drawn in terms of the real-capital/labour ratio, the lines appear as corners and the corners as lines.

group of economies each with the same rate of profit and real-wage rate, but with progressively higher output per head and value of capital, as the proportion of the more mechanized of the two techniques grows. At the point where only one technique is in use we enter another stretch with economies all alike except for rising real wages, and so on down.[1]

This exercise is useful for clearing up some fuzzy points in the old theory but it has no application to anything on earth. Two economies with different rates of profit must be divided either by time or space, and they will neither have the same book of blue-prints (including specifications about the climate and human nature) nor will either be in stationary equilibrium with its own rate of profit. The exercise cannot be used to provide hypotheses for interpreting real data.

The Tram Line

Another traditional question concerns an economy with a given labour force, a given book of blue-prints, and a given propensity to save, accumulating capital subject to the conditions that full employment is always preserved and that the form which investment takes is decided in the light of correct foresight about profit opportunities.[2] The economy is following a determinate path at a determinate pace. At any moment, today's prices and the expectations held today about future prices having been foreseen, the capital goods in existence today are of the form that will maximize profits for their owners, the level of real wages is such that the stock of capital in existence is offering full employment, and the division of output between consumption goods and capital goods is consonant with the desire to save. Since foresight has always been correct, any investments made in the past that are no longer yielding profits have been amortized. The value of the

[1] Samuelson's trick of measuring each stock of capital in terms of its own product is of no use, because the physical composition of gross output and the pattern of prices are both different in each economy. He is in error in saying that the elasticity of his curve corresponds to the relative shares of wages and profits in the value of output. I am indebted to von Weizsacker for the mathematical demonstration of this.

[2] For this story to be told, the book of blue-prints must show methods of producing capital goods with a low capital/labour ratio.* See H. Uzawa, 'On a Two-sector Model of Economic Growth', *Review of Economic Studies*, Vol. 29 (1961–2).

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* Cf. p. 27.

stock of capital in existence today is the cumulated sum of all the net savings made in the past. As we look back down the path into the past, there may be some ups and downs but broadly the value of capital and the real-wage fall, the capital/output ratio falls and the rate of accumulation rises. Contrariwise as we look forward into the future.

Savings may be a simple proportion of the value of total net income, or some more complicated function of it. The pattern of interest rates for various terms must correspond to the expected future rates of profit. We cannot therefore make use of the interest rate, in a Keynesian manner, to ensure that investment absorbs saving. It is necessary just to postulate that savings are invested.

To get out of this difficulty Professor Meade invented a world in which foresight is unnecessary. There capital goods are made of ectoplasm and can be remoulded into the profit-maximizing form from day to day. He then operates on the rate of investment through monetary policy. His is a pseudo-Keynesian model rather than a truly neo-classical one. The assumption of ectoplasm is not really anything to do with the problem of 'measuring capital'; it is a substitute for the assumption of correct foresight.*

Both assumptions are out of this world, and the analysis has no application.

Walrasian Accumulation

In another type of model, there is correct foresight about the future starting from today, but, in the past, what today would be like was not foreseen. There is, therefore, in existence today a job lot of means of production, including machines of various kinds, which are in no particular relation to the pattern of demand now obtaining.

Walrasian supply-and-demand prices are ruling. There is a wage rate, say in terms of bread, at which all labour is employed. To keep the argument simple we may assume a constant labour force from now on.

With the incomes now being enjoyed, there is a certain volume of saving, reckoned in terms of bread. Saving consists in buying machines and building up working capital to operate them. There

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* Cf. p. 17.

is a book of blue-prints for machines of types not inferior to those already in existence. It seems to be necessary to postulate that the minimum size of machine is rather large in terms of employment offered and that the savings function is somewhat 'classical'[1] so that most workers do not save; otherwise the economy would quickly become an artisan system, with all producers self-employed, to which another kind of model would be more appropriate.

The whole amount of savings in any one year is devoted to buying the type of machine that offers the highest prospective rate of return. There is a notorious difficulty about introducing a rate of profit into the Walrasian general equilibrium system. Since the future is known, we can reckon the quasi-rents that any machine purchased today will earn for its owner. The rate of return is the rate of discount that reduces the future quasi-rents to a sum equal to the present cost of the machine. But how are we to find the present cost, which includes interest on the value of the capital that entered into its production?

One way of circumventing this problem is to assume that some basic tools, that can be used to make machines, are produced by labour alone. But if workers can produce tools with their bare hands from free raw materials gathered in the jungles, they have no need to work for wages. The price at which they sell tools to the savers depends upon supply and demand; there is no reason why their earnings should not exceed the wage offered by machine-owning employers (or fall short of it when demand is low, if they prefer freedom to extra bread).

Another way round the problem is to postulate that there is some basic equipment, let us call it a park of machine-tools, that can reproduce itself as well as making other machines. Let us suppose that when the story opens the park is rather small, and that machine-tools promise a higher rate of return than any other kind of machine. The bread price of a new machine-tool is then the year's physical output from the existing park divided into the year's savings valued in terms of bread.

The future quasi-rents of a new machine-tool being known, we can find the rate of discount that makes its value equal to its price. This is the rate of return on investment. When we know

[1] This term has been suggested by R. C. O. Matthews to describe the postulate that saving out of profits is much greater than out of wages.

the rate of return we can value the park of pre-existing machine-tools accordingly. The cost of a new machine-tool is then equated to its value by including in the cost a bill for interest, at a rate equal to the rate of return, on the value of the machine-tools needed to make it. This is only arithmetic. Essentially the value of a new machine-tool is a demand-and-supply price.

All the old machines in existence are valued by discounting their expected quasi-rents at a rate equal to the rate of return. The cost of production (including interest on the value of the machine-tools required to produce it) of each type is greater than its value.

By the time that the park of machine-tools has been enlarged, their future quasi-rents have been reduced (the largest, nearest, ones have passed into the past). At the same time, supply having increased, the current price of a new machine tool has fallen, unless saving has increased correspondingly. The rate of return, therefore, may not have fallen. But even if it has not, the cost of production of other machines has been reduced, for this cost includes interest on the value of the machine-tools that make them, which has now fallen. When the cost equals the value of a machine, it begins to be produced. Since there was full employment already, the bread-wage rate rises, as the stock of new machines grows, sufficiently to reduce the current quasi-rent of some old machines to zero, so that labour is released to man the new ones. Current and remaining future quasi-rents are consequently falling and sooner or later the rate of return falls. When it does, the value of old machines rises. More types of machines become eligible to be produced.

Now there are two sectors in the economy. It is still true that the price level of the output of the machine industry as a whole is such as to equate the value of its physical output to the rate of saving, but within it all the machines being produced have values equal to their costs; each commodity produced by them is selling at a normal price, in Marshall's sense, which yields the appropriate amount of profit on their values. The calculation of normal prices is extremely complicated because of the expected future fall in the rate of return, but they are in principle quite unambiguous.

Meanwhile old machines whose value is still lower than their cost of production continue to operate. The New sector gradually grows and absorbs labour until the Old sector dwindles away to

nothing. The Old machines were not necessarily inferior in the strict sense, but they had been produced in proportions inappropriate to the situations that they lived to meet. Some may survive until their cost and value become equal, in which case they are absorbed into the New sector.

When all types of machines are being produced (or at least being maintained) all values are equal to costs and normal prices obtain throughout the economy.

The economy is approaching the position that it would have been in if perfect foresight had prevailed in the past. In due course it reaches the tram line, or rather comes close to it. Some scars from its actual history will always remain. It could now look back down the tram line into an imaginary past through which it could have approached its present position, with normal prices ruling all the time.[1]

Bensusan Butt[2] has worked out a story somewhat on these lines as a basis for the analysis of the process by which capitalism swallows up an artisan economy. It does not seem to have much to contribute to the kind of problem with which the latter-day neo-classicals purport to be concerned.

Technical Progress

In the old theory, technical progress was considered only in the form of a sudden shock which shifted the economy from one equilibrium to another. Harrod introduced the idea of technical progress going on continuously at steady rate. This conception, which was easily worked into the long-period Keynesian theory, has been taken up also by the neo-classicals. Here the notion of capital goods consisting of a homogeneous substance that retains its physical identity while its productivity changes is not only absurd but a great nuisance. When the economy is rolling along through time with both a constant rate of profit on capital and a constant share of profit in the value of output, the real wage rate

[1] This story explains why it was necessary to postulate that the book of blue-prints specifying the course of the tram line must show a relatively low capital/labour ratio for the production of capital goods. If the output of machine-tools per machine tool is very low compared to other machines (measuring machines in units of employment offered) then by the time that the tram line is reached, the park of machine-tools is excessive to requirements and must shrink. If saving refuses to become sufficiently negative, machine-tools become valueless. Can this be reconciled with correct foresight? [2] *On Economic Growth.*

is rising at the same rate as output per man, the capital/output ratio in terms of product is constant and the capital/labour ratio in terms of wage units is constant. There is no sense in distinguishing 'labour augmenting' from 'capital augmenting' progress. 'Embodied' and 'disembodied' progress may be mixed in various proportions.* The technical nature of the technical progress tells us whether it is possible for both conditions to be fulfilled simultaneously. When a constant rate of profit entails a rising share, the progress has a capital-using bias; when it entails a falling share, a capital-saving bias. That is all that we need on this level of argument. Paddling about in the ectoplasm does not help us to say whether the rate of profit *will* remain constant; still less can it help in an inquiry into actual technical change and the kind of bias likely to be found in reality.

The assumption that saving governs accumulation is rather awkward in this connection. With a constant labour force and continuous technical progress, there is a certain sense in which saving has ceased to be necessary. As Harrod pointed out when he opened the question, if money-wage rates are constant and the rise of real wages comes about by prices falling, no net saving in money terms occurs. The reinvestment of amortization funds keeps output expanding and capital gains in terms of product drop into the laps of the heirs of those who saved when the stock of capital was being built up. If money-wage rates rise so as to keep prices constant, the money value of net saving is the same thing as the rise in the value of capital that is taking place.

To get over this difficulty, the assumption is sometimes changed to make gross saving a function of gross output. This looks rather like a concession to the Keynesian point of view, since gross saving must be under the control of firms rather than households, but the argument proceeds on the basis of the ratio of gross investment to gross income being somehow governed by the propensity to consume of the economy as a whole.

The model is set up as follows. Technical progress takes the form of an improvement in the design of machines, so that output per man employed in producing consumption goods (commodities for short) is higher on a machine of a later than of an earlier vintage. Machines once produced do not change (they are not made

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* Cf. pp. 40–41.

of ectoplasm) and each continues to be used until its product yields no surplus over the wage bill for the team of men operating it.

At any moment there are in existence batches of machines of various vintages. The real-wage rate is such as to secure full employment. The oldest machine in use is that whose product just covers its wage bill.

Now we draw up a short-period production-possibility schedule at full employment, for commodities and machines. At any product mix, the price ratio must be such as to make the two groups of products equally profitable at the margin. Thus we can draw up a schedule of the value in terms of commodities of gross output at various levels of gross investment. That level of gross investment is chosen whose value corresponds to the gross saving appropriate to the corresponding gross income. When this gross investment has borne fruit, some superior machines have been added to the stock. Unless the labour force has grown sufficiently, the real-wage rate must be raised to get hands to man them. These are drawn from the oldest machines, which were barely worth using at the former wage rate. Thus full employment is continuously maintained, whatever the investment ratio may happen to be.

In this model also there is no room for an independent inducement to invest based on expected profits and the rate of interest. If, at one round, an unusually large improvement were made, so that gross profits jumped up, it would not affect investment except in so far as the greater-than-usual increase in gross product led to a greater-than-usual increase in the volume of gross savings at the next round.

The model has been wrenched away from Harrod's purpose of discussing the relation between the warranted and the natural rate of growth; it is useless for dealing with his problem—the failure of effective demand to expand fast enough to permit a modern industrial economy to realize its full potential productivity.

The Neo-neo-classical Theorem

Combining the analysis of continuous growth at full employment with the pseudo production function, we can compare economies, each with the same rate of growth, with different

rates of profit. It can be shown that the optimum position obtains when the rate of profit is equal to the rate of growth, which entails that consumption is equal to the wage bill. An economy in which there is consumption from unearned income in excess of saving out of earned income has a lower total consumption, at each phase of technical development, than the attainable level.

Marginal Products

The neo-classicals attach great importance to the principle of marginal productivity and (in spite of Marshall's warning[1]) seek to find in it an explanation of the distribution of the product of industry between wages and profits.

The marginal principle is essentially micro-economic. It comes into play when someone is maximizing something. In a short-period situation, with given means of production in existence, if we postulate conditions of absolutely perfect competition and assume that all employers are maximizing short-period profits, then marginal cost for each producer is equal to price. Another way of stating this relationship is to say that (when there is a perfectly elastic supply of labour at the ruling wage rate to each employer) the marginal net product of labour is everywhere equal to the wage. When interest on working capital and user cost of machinery can be neglected, and there is complete vertical integration, so as to eliminate raw materials, etc., the marginal net product of labour is equal to the value of the marginal physical product. The value of the marginal physical product when all available labour is employed with the given stock of means of production is what determines the real wage rate in the foregoing tales.

When the stock of means of production in existence can be represented as a quantity of ectoplasm, we can then say, appealing to Euler's theorem, that the rent per unit of ectoplasm is equal to the marginal product of the given quantity of ectoplasm when it is fully utilized. This does not seem to add anything of interest to the argument.

In a long-period context the marginal principle comes in to the choice of technique, from the available blue-prints, at the moment when an investment is being made. It is assumed that an

[1] *Principles*, p. 518.

individual entrepreneur, with confident expectations of future prices and costs, chooses the amount of employment to be offered by his investment in such a way as to maximize the return on it. Along the tram line the choice is excessively complicated because of the changing pattern of prices and wages that durable equipment will live through. This can be fudged by representing the degree of mechanization of technique as the ectoplasm/labour ratio.

In equilibrium with a constant expected rate of profit, no such fudge is necessary. But then the individual entrepreneur finds himself either in an economy on a flat in the pseudo production function, where only one technique is eligible, or at a corner where two techniques are equally profitable. In the first case there is nothing for the marginal principle to bite on. In the second, the additional investment required to raise the output of a given team of workers by equipping them for the more rather than the less mechanized technique is exactly rewarded, at the ruling rate of profit, by the additional output. The marginal return on investment to the individual is identically the same thing as the rate of profit. The marginal net productivity of labour is equal to the wage when the difference between the marginal gross product of an extra man employed and the wage is equal to the margin needed to pay interest at the ruling rate on the extra capital required to employ him.

We are merely chasing our tails round the implications of the assumption that the entrepreneur acts so as to maximize profits in the situation in which he finds himself.

But the main concern of the neo-classicals is to prove that the rate of profit is governed by the marginal productivity of investment from the point of view of society.

The marginal productivity of investment can be expressed as the rate of discount that reduces the additional flow of future output (valued in terms of bread) due to the investment to equality with the bread-cost of the machines concerned and the additional working capital required. When we take for granted a path that an economy is following, whether along the tram line of accumulation with a falling rate of return, or in a state of steady growth with a constant rate of profit, we can discuss the effect of a small *extra* bit of saving which is allowed to be re-absorbed later so that the economy returns to the path it would have been on

anyway. It can then be shown that the rate of discount measuring the marginal productivity of the extra investment is equal to the rate of profit ruling at the moment when it is made.[1]

It is hard to see why the neo-classicals derive pleasure from this theorem, for clearly something or other is determining the rate of profit, and whatever the rate of profit is, the marginal productivity of investment in this special sense is equal to it.

However that may be, it is more natural to consider the productivity of the investment that is being done on the path itself. Consider the investment due to the saving of, say, one year and calculate its marginal productivity. The rate of return at the end of the year is lower than at the beginning, compared to what it would have been if the investment had not been made, because of the rise in the real-wage rate that it induces. The marginal productivity of investment from the point of view of society includes the addition to wages of the team of workers operating the additional installation, which is not part of the profit that the investment will earn. This phenomenon was known to Wicksell[2] but it seems to have been dropped from the canon in modern times.

The crowning absurdity in this line of argument is the attempt to isolate the marginal productivity of education, as though labour and 'capital' retain their technical characteristics unaffected by education, so that all three can be treated as independent 'factors' whose products can be summed up according to the rules of Euler's theorem. This analysis is directed to the very worthy purpose of showing that education is a good thing; but surely that point could be made without such a large sacrifice of logic?

So What?

Certainly Keynes would have been saved a lot of trouble if he had found the target he wanted to shoot at so clearly displayed. But what is the purpose of re-erecting it today?

The object is not overtly ideological. Fairly radical conclusions can be drawn from the analysis, such as that the distribution of dividends is harmful to society. The elaborate mathematical

[1] Solow, op. cit., Lecture II.* [2] *Value Capital and Rent*, p. 137.

* See p. 44.

formulations that have accompanied it find their sphere of application mainly in the problems of investment planning.

As for its use in analysing current events, we could hardly have believed, if we had not seen it in cold print, that anyone would ever suppose that a production function in terms of labour and ectoplasm would provide a useful hypothesis for interpreting statistical data. Even on its own ground it turns out to be otiose, for both in comparisons between nations and in time series, we commonly find a more or less uniform rate of profit on capital going with widely different real-wage rates. That is to say, each observation is on a different production function.* When we find the share of profit as well as the rate of profit the same in the various observations, we can say, if we like, that evidently the elasticity of the production function is the same at each point, but we have not any clue as to what the elasticity is, or, indeed, whether there ever was a production function to have an elasticity.

Presumably, no one would deny that there is more hope of understanding what is going on in the world when we recognize that the wage bargain is made in terms of money; that the level of prices is influenced by effective demand and the degree of imperfection of competition; that accumulation is controlled by the policy of firms and governments, not by the propensity to consume of private citizens, and that today is an ever moving break in time between an irrevocable past and an uncertain future.

To understand is not easy, but at least we could try.

Postscript

Professor Arrow[1] exhibits the principle of 'learning by doing' in a model of successive vintages of equipment, similar to that described above. Neutral technical progress is embodied in the design of equipment in such a way as to keep output per head rising at a steady rate. The proportion of gross investment in gross output is arbitrarily given, and so is the degree of mechanization expressed

[1] *Review of Economic Studies*, June 1962: 'The Economic Implications of Learning by Doing.'

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* Cf. p. 31.

by the amount of investment (in terms of labour time) required to equip a man. Enough plant is built to offer full employment to the labour force.[1]

These conditions determine the length of life of plant, as follows: taking a year as the gestation period of each vintage of equipment, subtract from the gross investment of a year the amount required to equip whatever addition there may be to the labour force. The remainder is replacing the oldest and least efficient plant. The reciprocal of the proportion of the labour force re-equipped every year is the number of years' life of plant. The real-wage rate is equal to the output per man of the oldest plant in use. Gross profit is the sum of the excess of the respective outputs of each of the younger, more efficient plants over its wage bill.

It is evidently also true that annual net profit is equal to the annual increase in the value of capital *plus* the excess of spending out of profits over saving out of wages, and that the rate of accumulation is equal to the rate of technical progress, compounded with the rate of increase of employment. The implications of full-employment growth are the same whether expressed in pre-Keynesian or post-Harrodian terms.

The principle of learning by doing means that, other things equal, a higher gross investment ratio generates a faster rate of technical progress. This seems to coincide with the analysis mentioned on page 50, which was derived by me from Harrod. Kaldor tells us that his technical-progress function was intended to express the same idea.[2] It seems that we have all come to agreement, except that for Arrow and Kaldor, full employment is guaranteed, while for Harrod and me it is only one of various possibilities.[3]

[1] As usual, some assumption is needed to insure that there is no prime cost other than the wage bill.

[2] *Review of Economic Studies*, June 1962, p. 246.

[3] Cf. p. 16.

CONSUMER'S SOVEREIGNTY IN A PLANNED ECONOMY

Orthodox academic economic theory in the West is based upon the presumption that the system of prices that would obtain in ideal conditions of atomistic competition guarantees the rational use, for the benefit of society as a whole, of 'scarce means with alternative uses'. In its own capitalist setting there are formidable objections to this claim, which the orthodox theory has never succeeded in meeting. The fact that private property in the means of production, combined with rights of inheritance, produces a totally irrational distribution of purchasing power within society undermines the whole conception. There are also more technical objections. Something like atomistic competition does prevail in the markets for certain primary commodities. For these, both demand and supply are very inelastic in the short run, so that slight changes in market conditions bring about violent swings in prices, often exaggerated rather than restrained by speculation. And long-run movements in the terms of trade, affecting the livelihood of whole nations, are admitted by all but the most fanatical of *laissez-faire* economists to be a serious blemish in the market system. On the other hand, in manufacturing industry, nothing like ideal competition prevails. 'Administered prices', fixed by the seller, are the rule and quasi-monopolistic conditions are universal.

Nowadays, therefore, it is fashionable to argue that the true sphere of operation of the rational price system is in the planned economies. Where there is no income from property and everyone's earnings are what it is considered right that he should have, the major objection to the market system does not apply. The defective foresight which causes the vagaries of commodity markets and the monopoly power of manufacturers do not exist in a planned economy. There the market, it is argued, could be made to behave *as though* ideal competition prevailed.

In what follows this argument is examined, not from the point of view of trying to extract useful hints for practical planners, but

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Essays in Honour of Oskar Lange, 1964.

rather from the point of view of its basic philosophy which was once a favourite theme of Oskar Lange's.[1]

I

In old-fashioned orthodoxy theory, the price that a buyer is willing to pay for a commodity measures its *marginal utility* to him. This notion has been so much refined by modern criticism that precious little is left of it. But there is a solid justification for the market as a method of distributing consumer goods in the fact that it regulates itself. The task of choosing what to buy is thrown onto the consumer, and he, or rather she, feels this not to be a burden but a pleasure and a privilege. Moreover the system needs no police. A black market cannot exist when every commodity is rationed by its price.

No doubt there is great scope for educating taste; it is necessary to safeguard the interests of children; consumption of some commodities (motor cars, for instance) imposes external diseconomies on other consumers, and so forth. But, by and large, the freedom of the consumer to spend his money as he chooses may be accepted as the basis of the concept of a rational price system.

Given the volume of money incomes being earned, allowing for personal saving, the overall level of prices in the planned economy has to be such that the total value of goods and services sold to the public is equal to the total purchasing power being spent. Shortages appear when prices have been set too low, and accumulation of stocks when they have been set too high. Since the value of commodities sold is absorbing the purchasing power earned by the whole labour force, including those whose income is derived from administration, the armed forces, etc., and from investment, the surplus received from the sale of commodities over their own cost of production is just what is required to pay those other incomes.

To enjoy the advantage of the self-regulating market system it is not sufficient to achieve this overall balance. It is also necessary that the pattern of prices, within the total, should be such that demand corresponds to supply in every market. This, no doubt, is easier said than done. But something approximating to it has

[1] *On the Economic Theory of Socialism*, 1938.

been arrived at in the planned economies by means of differential rates of turnover tax. The principle is that prices should reflect scarcities in the manner depicted in the Walrasian general equilibrium system.

Let us accept this for the sake of argument and see what it implies.

The claim that is made for the imitation market system is at two levels. First, that it indicates the correct plan for production—the plan that ensures that the maximum benefit is enjoyed from given resources. Second, that it promotes efficiency by permitting the devolution of decisions. On both levels, it is argued, the best results will be achieved if individual enterprises are instructed to behave like capitalists in the text-books, that is, to strive to maximize profits from moment to moment.

The first point to observe is that, for the system to achieve the results claimed for it, the enterprises must not be given freedom over the prices at which they sell. The drawbacks of endowing socialist enterprises with the powers of capitalist monopolies are obvious enough. (They have been experienced to some extent in Yugoslavia.) But competition also has drawbacks. There would be no point in introducing the hog cycle into a socialist economy. Walras himself admitted the instability of competition, though in a backforemost way. He makes his traders find the equilibrium pattern of prices by shouting—everyone declares his offers and demands before any actual dealing takes place. This certainly is a useful hint. The proper procedure is for the price-fixing authority on the one side to estimate demands, and on the other to inquire from the enterprises what quantities of various products they could supply at what prices, thus working out the short-period supply and demand curves for the various commodities. Then the appropriate prices must be given to the enterprises. In the text-book competitive system price is given to the individual seller and his business is to produce, with maximum efficiency, the quantity whose marginal cost is equal to that price. The whole beauty of the system is lost if the seller can manipulate the price.

But what determines costs? There is a very radical difference between capitalist costs and socialist costs. To a capitalist enterprise wages are the main element in costs. A rise in the wage rate in terms of his own product is a rise in costs. 'The more there

is of mine, the less there is of yours.' In a socialist economy, the wage is the medium through which each individual draws his share of the social product. Once full employment has been achieved, labour power is a scarce resource and labour time, not wages, is the basic cost. It is necessary to reconcile the cost of labour time which an enterprise must pay with the wage regarded as a social dividend which the worker receives.

This must be done by finding out the demand curve for labour. The enterprises must be instructed to offer employment up to the point where the net addition to proceeds (selling prices being given) from employing an additional team of workers is not less than the additional cost of labour, allowing for other prime costs, which we will discuss in a moment.

In the planned economy investment is absorbing a large proportion of national income, and the general expenses of government, defence and social services are also collected from the proceeds of industry. Overall profit margins (the excess of selling value of goods sold to the public over their own wages bill) are therefore high. If labour were supplied to the enterprises at the wage actually paid to the worker (assuming that full employment has been achieved), there would normally be a large excess of demand, on the above reckoning, over the supply available to the commodity sector. Therefore the enterprises must be charged a pay-roll tax. The level of the tax is such as to bring the demand for labour of the enterprises into line with the available supply. This ensures that labour is nowhere being used to make a lower contribution to the value of output if it could be transferred to another enterprise where it would make a larger contribution—in orthodox language, the short-period marginal net productivity of labour is everywhere equal, and is equal to the cost per man-hour to the individual enterprise of employing labour.

An important part of the costs of an individual enterprise are materials and power, and the most important function of the pricing systems is to allocate supplies of scarce resources to the most needed uses. To fulfil the prescriptions of the orthodox system a pseudo market has to be organized at which suppliers declare the amounts of each commodity that they would make available at different prices (after the armed forces etc. have requisitioned their share) when following the rule that marginal costs must not exceed marginal proceeds. The fabricating enterprises put in their

bids on the same principle. Notional prices are lowered and raised until a fit is obtained in each market, and actual transactions then proceed. By this means every material is steered to the point where its comparative advantage is greatest. The bids of the electrical industry for copper set a price at which aluminium is preferred for kitchen ware; leather may be absolutely better than cloth for making suitcases, but is better by more for making shoes, and so forth.

The whole system of final and intermediate prices and the pay-roll tax have to be worked out by a system of simultaneous equations (in effect, the Walrasian general equilibrium system), put into operation, and corrected by experience from month to month.

When marginal costs are everywhere equal to prices, large differences appear in the excess of total proceeds over total costs for different enterprises depending, on the one hand upon the productivity of the equipment that each possesses, and the scarcity relatively to demand of the particular commodities that it is suited to producing, and on the other hand upon the efficiency with which it is operated. It is clearly undesirable that profits should be easier to make in one enterprise than another. Each should therefore be charged a rent calculated so as to absorb the whole surplus over costs—the quasi-rent—due to the natural advantages of the particular enterprise. Then, squeezed between fixed prices and fixed costs, the manager of the enterprise must strive to maximize his surplus profit at zero by operating with perfect efficiency.

This is certainly an austere ideal. We are not here concerned to inquire what approximation to it might be feasible in a planned economy. The point of the present argument is only that *this* is the orthodox prescription.

If individual enterprises are permitted to fix prices, the evils of imperfect competition would creep into the system. Trial-and-error competition sets up cycles. A system of prices proportional to Marxian *values*, that is, a system in which the whole surplus is collected by the pay-roll tax, would generate chronic shortages and surpluses, since the pattern of supply would be quite unrelated to the pattern of demand. A system in which enterprises are charged interest on the investment sunk in their equipment, instead of rent reflecting its earning power, would make surplus profits too easy to earn in some and too hard in others.

The advantages claimed for the market system could, in principle, be realized only if prices, reflecting scarcities relative to demand, are given to the producers, and costs are adjusted to them.

Now that the socialist economists are discussing the uses of an imitation market system as a means of decentralizing control, it is important to consider wherein the virtue of the market system is suppose to lie.

II

The foregoing concerns the allocation of *given* resources between alternative uses. The orthodox system is most at its ease in a stationary state. Its treatment of accumulation has never been very satisfactory.

There are two ways in which the Walrasian system can be interpreted. In one model, individuals own means of production and possess the knowledge appropriate to particular lines; they trade their products with each other—in short it is an artisan economy. There may be a general rate of interest formed by the supply and demand for present purchasing power against future purchasing power; the individual producer then invests in his own business—the blacksmith in a forge, the weaver in a loom—when his subjective valuation of the expected rate of return exceeds the rate of interest. This model is clearly of no use for discussing the problems of modern industry.

The other interpretation of the Walrasian scheme makes all owners of means of production perfectly versatile, so that each invests in the type of equipment which promises the highest rate of return.

At any moment, supply-and-demand prices rule for the commodities being produced. The wage rate in terms of any commodity, say bread, is such that it pays the owners of stocks of productive equipment—let us call them machines for short—to employ all the available labour. Various kinds of machines are yielding various returns in excess of operating costs (quasi-rents). With the gross incomes being enjoyed and the prospective profit on investment (which we shall discuss in a moment) there is a certain gross amount of saving which individuals propose to do. Saving is devoted to buying machines to maintain and increase productive capacity.

How is the prospcctive rate of profit determined? As investment gocs on, the pattern of prices will change and the quasi-rents of various machines will alter. If investment is guided only by current quasi-rents, mistakes will be made. To present the model as a guide to the efficient use of resources, the orthodox theory postulates correct expectations about future prices. Given expected future prices and wage rates, the future quasi-rents (in terms of bread) of each kind of machine can be calculated. The rate of return on investment is then the rate of discount which reduces the future quasi-rents to equality with the present cost of the investment in terms of bread.

What governs the present cost? There must be somewhere in the system machines which can produce machines (including themselves). At any moment there is a limited capacity for producing machines, which is being fully utilized. The relative prices of different kinds of machines must be such that each offers an equal quasi-rent per unit of machine-making capacity; the overall bread-price level of newly-produced machines is the total volume of saving, say per annum, in terms of bread, divided by the annual output of machines. The savers order the type of machines which promise the highest rate of profit. The rate of profit is the rate of discount that reduces the expected future quasi-rents per machine (which are supposed to be correctly foreseen) to equality with its present cost. Thus the price of machines, like all other prices, is settled by supply and demand; the rate of return on investment measures the scarcity of equipment relatively to the demand for it, the demand for it being the rate of saving that individuals, taken together, want to carry out.

Here is a serious weakness in the orthodox scheme. It is impossible to regard this rate of saving as representing the 'will of society' in a sense which gives it authority. The amount of saving must be supposed to be strongly influenced by the distribution of income and wealth between families, which in this model is completely arbitrary. Moreover savings dccisions are made by mortal men whereas 'society' must conceive itself to be perpetual.

If these objections could be met, a worse remains. The model is intended to depict a process of 'deepening' the structure of capital. To takc the simplest case, technical knowledge is given and thc labour force is constant. Accumulation is improving equipment per man and raising output per head. The capital/

output ratio in value terms is rising. Labour is continually being released to man more productive equipment by raising the bread-wage rate to a level that less productive equipment can no longer pay. As time goes by, the rate of return on further investment falls. The faster accumulation takes place, the faster the wage rate rises and the faster the rate of profit falls. It seems that the benefit to 'society' from saving is not properly reflected in the 'reward' to the savers. How then does 'society' secure that the optimum amount of saving takes place?

Conceding that the overall rate of saving must be a political decision (represented by a 'social welfare function' which tells us no more than that the authorities prefer whatever plan they have decided to carry out), the orthodox argument falls back upon the position that, whatever rate of saving the planners decide upon, it is still true that the pattern of investment should follow the rule of maximizing the rate of return from year to year.

Is this a helpful rule? Even with up-to-date techniques of computation, it would clearly be impossible for a planner to work out all conceivable paths of development and calculate which yields the highest rate of return. Starting from supplies available today, he must pick out one or two paths that seem sensible, and choose between them. The relative scarcities, reflected in current quasi-rents, would no doubt be useful data, but he cannot be automatically guided by the pattern of current profits. Future demands, as supplies are increased, will form an integrated pattern. He cannot foresee demand, for instance, for household gadgets unless he foresees a supply of domestic power. He cannot foresee the demand for sea-side hotels unless he foresees the length of holidays. There is no way in which he can declare the pattern of future prices and then allow the pattern of investment to work itself out on the basis of maximizing profits. The pattern of investment and the pattern of future prices have to be worked out in a single operation.

The reason why the orthodox argument fails to bc useful is that it is founded on a contradiction. Atomistic competition and correct foresight are irremediably irreconcilable. Competition finds out the equilibrium position by a process of *tatonnement*, that is, by trial and error. To find the equilibrium price of fresh eggs in the village market, it may work well enough. But where

long-lived investments are involved, it is excessively wasteful. For investment, Walras' process of shouting offers and demands corresponds to working out plans on paper, and iterating calculations until a fit is achieved. Once the fit has been found, the plan must be put into operation as a whole. Each individual enterprise has to accept its part in the scheme. Errors have to be corrected on paper, not embodied in bricks and steel before they are found out. No doubt, in the best of plans, gross errors occur, but they cannot be avoided by simulating competition.

III

The orthodox theory claims to settle the question of the effectiveness of investment—that is the choice of technique for producing a given future output (say, hydel versus thermal power stations) in a very simple manner. We only need to know the future cost of labour in terms of the product and the rate of interest that measures the present scarcity of capital. Discounting future quasi-rents at that rate, we calculate which investment has the higher present value.

The association of the rate of interest with capitalist exploitation has made socialist planners shy of using it. And, as we have seen, the rate of return which emerges from the Walrasian model has no particular authority. Yet the notion of a 'cost of waiting' has a commonsense meaning in a planned economy. When output is growing, there is a technical superiority of present over future resources, because present resources can be invested to increase future productivity. Thus the growth rate of the economy itself measures the cost of waiting. When industrial output is going to maintain, over the lifetime of the investment, a rate of growth of, say, 10 per cent per annum, then an additional cost today, for instance for the hydel rather than the thermal installation, must show a saving on future running costs of at least 10 per cent per annum on the initial outlay if it is to be justified.

On top of this there may be also a political 'cost of waiting' if the authorities prefer to offer the public a smaller rise in the standard of life in the near future rather than a greater one later on, for fear that they may grow tired of waiting meanwhile. On the other hand engineers have a bias in favour of capital

intensive techniques, and argue for a low enough rate of interest to justify them.

The orthodox theory is on strong ground in claiming that the concept of a rate of interest simplifies the calculation of the effectiveness of investment, but it does not settle the question of what the rate of interest ought to be.

IV

The orthodox model is working towards a horizon at which the 'deepening' process will have been completed. Accumulation will then be required only for 'widening' the capital structure—that is, providing equipment, at the level already attained, for a growing labour force or implementing the potential growth of output per head due to technical progress.

A proposition which has lately been added to the orthodox canon[1] states that the optimum conditions obtain when the rate of profit on capital is equal to the rate of growth of output, which entails that consumption is equal to the wage bill.

The argument is as follows. In conditions of long-period competitive equilibrium, the individual enterprise carries investment per man employed to the point where the marginal productivity of capital is equal to the rate of profit. The marginal product from equipping an addition to the effective labour force at the average level is the addition to output that it makes possible. Thus the marginal productivity of 'widening' investment is identical with the growth rate. So long as the rate of profit exceeds the growth rate, 'deepening' investment increases future consumption. The maximum maintainable rate of growth of national income is attained when the marginal productivities of 'widening' and 'deepening' are equal, that is, when the rate of profit is equal to the rate of growth.

Does this hold any moral for a planned economy in some ultimate state of economic bliss? It never seemed reasonable to think of goods being given away free under Communism. Even under Communism, current production must be carried on, and when I consume commodities I am consuming my neighbours' labour time. Surely the consumer should pay for the labour that goes into each product, so that his own labour time (his earnings)

[1] See *Review of Economic Studies*, June 1962.

exchanges at a fair rate with everyone else's? It seems reasonable also that the consumers of any commodity should pay for the upkeep and expansion of the equipment required to produce it. This would be achieved if all prices were set at such a level as to yield the same rate of profit on all investments. But the surplus collected from consumers in the prices of commodities does not pay only for investment. It is required also to cover the overheads of government and social services (let us hope that by the time Communism has been reached defence will no longer be a large item). There does not seem to be any logic in charging these costs *pro rata* to capital invested. It would seem appropriate to recover them from a pay-roll tax, which would enter into all prices in proportion to prime costs.

This is day-dreaming. Meanwhile the problem of pricing under scarcity remains to be solved.

V

If the foregoing argument is correct, proposals to relieve the burden on centralized planning by giving autonomy to the individual enterprise in respect to prices, the product mix or investment, are misconceived. Yet some kind of devolution is evidently necessary. Overall investment plans must continue to be made centrally to secure a fit, but as the standard of life rises the rigidity of central planning in detail becomes more and more tiresome to planners and consumers alike. The new mathematical school in U.S.S.R. is arguing for reforms, but they are still thinking in terms of costs rather than of demand.

It seems to the present writer that the moral to be drawn from capitalist experience is that production will never be responsive to consumer needs as long as the initiative lies with the producer. Even within capitalism consumers are beginning to organize to defend themselves. In a planned economy the best hope seems to be to develop a class of functionaries, playing the role of wholesale dealers, whose career and self-respect depend upon satisfying the consumer. They could keep in touch with demand through the shops; market research, which in the capitalist world is directed to finding out how to bamboozle the housewife, could be directed to discovering what she really needs; design and quality could be imposed upon manufacturing enterprises and the product mix

settled by placing orders in such a way as to hold a balance between economies of scale and variety of tastes.

No one who has lived in the capitalist world is deceived by the pretence that the market system ensures consumer's sovereignty. It is up to the socialist economies to find some way of giving it reality.

THE POLITICAL ECONOMY OF COMMUNISM

The discussions going on at the present time in U.S.S.R. about the use of profits in the control of socialist industry give fresh point to Professor Wiles' *Political Economy of Communism.* It is well worth while to submit to the irritation of his slap-dash style and cocky manner in order to disentangle the argument that he puts forward.

I

Wiles criticizes the economic policy of the Stalin period by reference to a standard of 'rationality' which he admits has never been attained in any private-enterprise economy; it is derived from an ideal perfect competition which is found only in the text-books. He assumes that his readers know what this means so that it is not necessary to spell it out. In fact there are several serious gaps in the analytical system that he derives from it.

The first concerns the distinction between a principal and an agent in economic transactions. Wiles comes close to this in his distinction between active and passive money, but he seems not to realize its importance.

The housewife is a principal. She is spending the family's money for their own benefit. When she buys from an individual collective-farmer in the *kolkhose* market, he also is a principal; when she buys from the representative of the *kolkhose*, he is an agent of a corporate principal; the transactions between them are market transactions. When she buys in a shop, the seller is an agent of the government. It is a market transaction on her side but not on his. Sales of raw materials between enterprises are conducted between agents on both sides. A manufacturing enterprise is a corporate agent. In industry there is no principal but the socialist economy itself.

Orthodox western economic doctrine, in effect, is that if principals are left alone to follow their individual interests, the interaction between them, provided there is no collusion, will produce the best results for all.

Indian Economic Review, Vol. I, No. 1 (New Series), 1965.

The housewife spends her money as she may. Freedom to choose amongst the goods on offer gives her pleasure and saves the authorities endless trouble. It adds nothing to say that she is 'maximizing satisfaction subject to a budget restraint'.

The management of a capitalist enterprise chooses what to produce, the method of production and the price to charge, according to the policy of the firm. There is much dispute about what policies are followed in actual capitalist industry. In the text-book the policy is to 'maximize profits', which entails producing 'a given output at minimum cost' and selling such a quantity of output as 'equates marginal cost to marginal revenue', marginal revenue, in a perfect market, being equal to the price of the product.

In the socialist economy, the motives and habits of the housewife dictate her purchases in the same way as in the capitalist economy (the differences are in the education, advertising and social pressures which influence her motives) but the motives of the management of enterprises have no independent basis because they are not principals in the transactions they have to carry out. The great debate now going on is about what policy the managers should be instructed to follow and how it should be enforced.

Lerner's rule (expounded in *Economics of Control*) was that the managers should be instructed to simulate the behaviour of the text-books, producing output up to the point where marginal cost equals price. There are endless difficulties in reducing the concept of marginal cost to operational terms, but the main objection to Lerner's rule is connected rather with average cost. What motive have the managers to 'produce a given output at minimum cost'? The curves in the text-books that Lerner relies on are drawn on the assumption that the profit motive ensures perfect efficiency. He is only concerned with their points of intersection once they are drawn. What does he substitute for self-interest to get them drawn right?

Wiles fails to notice this yawning gap in the argument. (He believes that Lerner has gone out of fashion because of some metaphysical objections to his concept of welfare.[1]) He maintains that to run a socialist economy on text-book principles would be perfectly simple: 'One attaches prices to land and capital, makes

[1] Op. cit., p. 91.

the turnover tax uniform, abolishes subsidies, establishes free trade across the borders, decentralizes decision-taking, and sits back.'[1]

The most obvious points are the easiest to overlook. Wiles overlooks the difference between socialism and capitalism. Under socialism the means of production are not privately owned. The primitive Protestant capitalist was pursuing profit (by super-exploitation of labour and ruining handicraftsmen as well as by contributing to the growth of production) for his own benefit. The modern manager, to whom power has been delegated by owners of wealth, identifies himself with the success of his company, for whose sake he pursues profit and enlarges productive capacity, within the limitations set by the countervailing power of Trade Unions and various legal restraints. The distribution of scarce means between competing ends of the text-books comes about because the owners of the means want to get the highest possible return on them. Abolishing the abuses of private property also abolishes its motive force. 'Decentralize decision-taking and sit back' and no one would know what to do.

A second huge gap in Wiles' system of thought is also illustrated by the passage quoted above—the neglect of time. For him, as for all neo-classicals who follow the Walrasian rather than the Marshallian tradition, the long and short period are collapsed into one. An economy finds itself at any moment possessed of certain scarce means—natural resources, capital equipment, stocks of goods and work in progress, a labour force with certain capacities, all spread about in particular geographical locations. Some are highly specific; some have a wide range of 'alternative uses'. In a free market, the response of supply to demand takes time, leads to 'pig cycles', unnecessary cross hauls and missed opportunities. When investment and technical change are going on, the set of 'scarce means' is changing faster than the most profitable allocation of any one set can be achieved. Walras was aware of this difficulty and got over it by postulating that traders find out an equilibrium position by shouting, so that actual transactions take place only at equilibrium prices. Wiles seems to think that the process of *tatonnement* could take place through actual transactions in a socialist system simulating competition. At the same time, he seems to believe that the free market would

[1] P. 189.

bring about some kind of 'normal prices' in the Marshallian sense. Note that in his simulated competitive system the turnover tax is uniform, which presumably means at a uniform *ad valorem* rate on sales to the consumer. The turnover tax corresponds broadly to profit margins in a private-enterprise economy. When Walrasian competitive prices rule, profit margins reflect the relative scarcities of different commodities; when Marshallian normal prices rule supplies are already adjusted to demand, prices are such as to yield a uniform rate of profit on capital invested, and profit margins vary with the capital/labour ratio in various lines of production. Wiles seems to think that the correct policy is to work towards a Marshallian equilibrium and that it is somehow Stalin's fault that it is impossible to jump into it immediately.[1] But since he proposes, quite correctly, to treat the turnover tax as 'socialist profit' what does he mean by the 'price of capital'? The failure to take account of time leads to confusion between capital as a stock of concrete means of production already in existence, and as the flow of available investible resources; this leads to obscurity at several points in his argument.[2]

The conflation of short- and long-period analysis comes out most strikingly in the discussion of location. He points out, very rightly, that everything must be somewhere, and that the choice of output and the choice of location 'are co-variables presenting a simultaneous equation'. He goes on:

> This simultaneous equation is automatically and correctly solved for us by perfect competition: if all entrepreneurs maximize their profits in current production and in investment everything will be so located and transported that production (c.i.f.) is as cheap as possible.[3]

Here the idea of *tatonnement* has been tacitly dropped. Trial and error does not work well in founding cities and building transport lines. Trial occurs once and errors remain. Wiles must have fallen back on the assumption of 'correct foresight' as part of the specification of 'perfect competition'. Then the argument is circular. When location is not optimal it shows that competition

[1] P. 190.
[2] Eg. suppose 'that labour, land and capital are all bought on a free market, the prices paid being just so as to attract them to the right enterprises' (p. 229).
[3] P. 147.

was not perfect. (But Wiles seems to believe that in actual market economies mislocation is rarely observed.[1])

The rapid growth of the socialist economies, however, somewhat undermines his complacency. He offers no clear statement of what he considers to be the right rate of accumulation. 'Forced saving and forced investment' are required 'if the actual rate of growth is to exceed the "natural", warranted or *laissez-faire* rate of growth'[2] but he has some doubts as to whether it may not be justified even by the criterion of pure welfare economics,[3] and he repeats the argument of his famous article of 1953:[4]

> In the Soviet economy there are, as it were, always too few hairbrushes and too many nailbrushes in view of the resources available, while in a 'capitalist' economy this proportion is always more nearly right. But the production of both of these articles is growing at about 10 per cent per annum in the U.S.S.R., and at about 2 per cent per annum in 'capitalist' countries. In the end the Soviet citizen will be supplied better even with hairbrushes.

As for the problems of investment planning, which one would have supposed to be his main topic, he has very little to say, except that 'it is clearly the most profitable investment which, at the time and in the very short run, will most increase the national income',[5] and his discussion of the choice of technique is off the target. He devotes a chapter to demolishing the argument that capital intensity ought to be *greater* than would maximize profits, whereas the usual debate is between those who maintain that the profit-maximizing technique is correct for a socialist economy (because profit promotes accumulation) and those who maintain that when there is a reserve of labour, *less* capital intensity would increase growth immediately, though with a lower acceleration.

II

Though Wiles' positive prescriptions are feeble, his negative description of socialism in practice is full of shrewd touches.

The problem in the socialist economies was, and is, to find institutions to substitute for the self-propelling owner of wealth

[1] P. 148. It is not clear whether mislocation does not occur, or is not noticed when it does.
[2] P. 217. [3] P. 219.
[4] 'Scarcity, Marxism and Gosplan', *Oxford Economic Papers*, October 1953.
[5] P. 301.

whose greed and ambition produced the triumphs of capitalism. The Communist Party rejected text-book economics as the scriptures of its enemy (and, judging by Wiles' exposition of them, they would not have been of much use in any case); Marxist teaching was founded upon a hypothesis which turned out to be irrelevant to their problems—that socialism would emerge in a highly developed industrial economy that could be taken over as a going concern. Moreover, there were technical defects in the Marxist system of concepts, as Wiles points out in his analysis of the confusion of departments A and B with investment and consumption.[1] Without an appropriate theoretical framework (merely an obligation to repeat the texts of their own scriptures, whether relevant or not) the Soviet authorities had to improvise. Wiles draws a useful distinction between *criteria*—in the light of which policies are framed—and *indicators* which are intended to get policy carried out.[2] The Soviets had to improvise institutions as well.

The results were often clumsy and absurd, as Wiles delights to point out and Russian economists (still more, Polish and Hungarian) are now ready to admit. He does not give them credit for some very sensible notions.

Take turnover tax, for instance. With a rapid rate of accumulation, heavy military expenditure, and large outlays for education and social services, the surplus generated by the sale of consumption goods is necessarily high. (Wiles does not seem to grasp the two-sided nature of profit—outlay on goods and services not available for sale *requires* a surplus to finance it and at the same time *produces* an excess of expenditure on the goods that are available over their own costs.) To collect the surplus by income tax would lay a heavy burden both on administration and on morale (as we know only too well). To allow it to accrue as receipts to individual enterprises would undermine accountability as an indicator of efficient management. The solution was to mop up the surplus by the turnover tax, leaving the enterprises with receipts reckoned to be sufficient to cover their costs.

The rates of tax on various commodities were no doubt highly arbitrary at first, and the pattern, once set, is not easy to alter. But, as Wiles admits, prices on the consumer market do somehow

[1] Chapter 14. [2] P. 96.

or other equate demand to supply.[1] He objects to the uneven incidence of turnover tax which this entails only because he thinks that it is possible to have short-period Walrasian prices and long-period Marshallian prices at the same time.

Relative prices of manufacturers are much less important than economists like to make out. The important price-ratio is between manufacture and agricultural products, for the collective farm is a corporate principal and the purchasing power of its products determines the income of its members. But here supply and demand produces hopeless results. In times of scarcity it gives too great a share of national income to the food producers and in times of plenty, ruins them. Equally in socialist and capitalist countries (though for the opposite reason) the setting of *this* price-relative is a political problem.

Within the sphere of manufacture, the difficulty has been, not so much with prices, as with the product mix. For criteria the authorities had some general impression of what people needed. Wiles objects to the usual view 'that poverty and under-development give us more excuse for arbitrary choices, while rationality becomes important only when a certain prosperity has already been achieved. Obviously the exact opposite is the case. For arbitrary choices are wasteful choices, and a poor man can afford waste less than a rich. True, a rich man or country faces many more choices, and the subject acquires greater intellectual interest, what with fuel policy, higher education policy, choice between techniques, choice between road and rail, etc., etc. But the dull old choice between bread and potatoes is more important than these in terms of human welfare.'[2] But surely the choice between bread and potatoes is better made by a scientific study of agriculture and nutrition than by the market?

Nowadays in U.S.S.R. and the Western socialist countries the more interesting choices are coming over the horizon and new criteria are needed. It is depressing to find that a Communist leader cannot suggest anything more inspiring than the prospect of 'overtaking America'. The problem is to find a substitute for the initiative of the enterprising producer who seeks out the consumer's latent needs and turns them into positive demands (say, for washing machines) without the iniquities of 'sales engineering' and contrived obsolescence. How does 'perfect competition' help?

[1] P. 109. [2] P. 95.

Can the consumer shout his offers for goods that he will want five years hence? I have always maintained that the solution must be found in an institutional change which will give the consumer's interests greater weight in planning production. The kind of sociological research which in U.S.A. goes into finding out how consumers react to advertisements could be applied in a socialist country to finding out what they would like to have. I believe that the socialist economies will sooner or later be pushed into finding a solution on these lines.

But that lies in the future—meanwhile the problem of finding indicators to cause any given plan to be carried out remains troublesome. The use of physical indicators leads to absurdities, now admitted by the Soviet writers. If the plan is given to an enterprise in terms of weight, only the heaviest items are produced; if in length, only the narrowest, and so forth. Value of turnover is even worse, since it is reckoned gross and puts a premium on wasteful use of materials.[1]

The Yugoslav solution is to turn the individual enterprise into a principal, allowing the Workers' Council, in theory (and perhaps the management in practice), to run it in their own interest, choosing the product mix and setting prices for themselves. This must be expected to lead to many of the evils of imperfect competition, and to excessive capital intensity, causing unemployment for those not fortunate enough to have got in on the ground floor of a successful enterprise.

Lange's *a priori* solution was to set prices centrally and let the enterprises maximize profits. (Wiles very rightly points out the basic difference between this solution and Lerner's; the common phrase 'Lange-Lerner system' is misleading.) But setting prices, as Lange has since learned, involves all the problems of the product mix. The solution, once more, lies in institutional reorganization. Representatives of the consumer interest, operating like wholesale merchants or the buyers for chain-stores, could be permitted to bargain with manufacturers, refusing to accept unsaleable goods, thus eliminating shoddy products and the socialist analogue of full-line forcing that Wiles describes[2] and demanding from the enterprises the product mix that the consumer requires. Then, if costs have been correctly set, a general instruction to the manager of an enterprise to maximize profits

[1] P. 83. [2] P. 86.

would be the simplest and most effective indicator. It is apparently somewhat on these lines that the advocates of the profit motive in U.S.S.R. are now thinking.

But setting costs correctly is a large order. Labour-time, not wages, is the social cost of work. In principle, the wage rates *plus* or *minus* a pay-roll tax or subsidy should reflect the scarcity or surplus of labour in each region. Interest is already charged on working capital, which seems perfectly sensible, though Wiles regards it as ideologically unsound[1] but interest on fixed capital is quite irrelevant. To reflect social opportunity cost, installations should be assessed for rents corresponding to the surplus that they can earn. Perhaps this would raise too many political and administrative difficulties. If so, a simulation of the competitive market will not be possible before growing affluence makes it unnecessary. Meanwhile, the economy will muddle along. Perhaps it would not matter very much (provided that the agricultural problem could be solved). As Wiles points out, rapid growth floats off the mistaken choices quicker than precise planning could have got them right.

In any case, costs and prices concern only the details of production. The market would not help with the main decisions concerning the allocation of resources between current consumption, defence, education, social services, administration and investment. Under capitalism they are taken, one way and another, by the representatives of the owners of property, kept in check by the demands of the workers. Planning itself was an improvization to meet this requirement when the State became the sole owners of industrial property. For all Wiles' mockery,[2] the crude method of commodity balances with which it began was a considerable invention, which war-time Western planners found themselves following. The mathematical school in U.S.S.R. is now devising refinements, and electronic computers are going to transform the technical and administrative problems involved. But what Kantorovitch showed is how given ends could be met by alternative means. In choosing ends, there is no substitute for political wisdom.

The Soviet leaders admit that huge mistakes have been made and excessive sacrifices demanded of their people. They are trying now to learn from their mistakes. In this sphere they cannot

[1] P. 63. [2] P. 195.

expect much help from 'what many Western economists believe to be the chief concern of economic science', the theory of 'the distribution of scarce resources between competing ends'.[1] I am grateful for the 'many', which indicates that there are a few who do not.

Postscript

Many of the difficulties which Professor Wiles describes are avoided by the Chinese method of planning. When the broad lines of the plan have been laid down, the representatives of all the enterprises in a particular branch are called together; they work out the details amongst themselves and then enter into contracts which lay down the exact specifications of products and dates of delivery. For final consumer goods, the Ministry of Internal Trade acts as a wholesale agent, entering into contracts with suppliers on the one side and retailers on the other. The managers of department stores advise the Ministry about the state of demand so that the tastes of the consumer are brought to bear upon the flow of production. In China today tastes are still fairly simple and fairly uniform, but there seems no reason why this method should not be used to develop no matter how high a level of consumption.

[1] P. 47.

PART II

KALECKI AND KEYNES

I

It is difficult now to recapture the state of orthodox opinion in the capitalist world in the early years of the great depression.

There was heavy unemployment in England even before the world slump set in. In 1929 Lloyd George was campaigning for a programme of public works. In reply, British officials propounded the 'Treasury View' that if the Government borrowed, say, a hundred million pounds to set men to work on road building and so forth, foreign investment would be reduced by an equal sum and no overall increase in employment would occur.

In 1931 the British Labour Government was led to destruction through the belief that it was necessary to balance the budget in order to save the exchange value of sterling.

Academic opinion was serenely oblivious to the problems of reality. Professor Robbins, surrounded by unemployed labour and idle plant, defined economics as 'the science which studies human behaviour as a relation between ends and scarce means which have alternative uses'.[1]

According to accepted theory the price level was determined by the quantity of money. But the suggestion that the depression might therefore be relieved by increasing the quantity of money was confined to cranks. In the orthodox view it would create a dangerous inflation.

The Marxists abused the academics, but they shared their belief in the principles of sound finance.

In this fog Keynes was groping for a theory of employment. He had backed up Lloyd George with a rather vague and half-baked argument that an increase in investment would generate an increase in saving (so that borrowing in one form need not be subtracted from borrowing in another)[2] and he set a young pupil,

[1] *Essay on the Nature and Significance of Economic Science.* 1932.
[2] J. M. Keynes and H. D. Henderson, *Can Lloyd George Do It?*

From *Essays in Honour of Michael Kalecki*, 1964.

R. F. Kahn, to work it out properly. During the sessions of the Macmillan Committee on currency and banking he was coming to the view that there was a fallacy in the accepted argument that a cut in money wage rates would restore profitability to enterprise, by lowering costs relatively to prices, because prices would come down more or less in proportion. But in his great theoretical *Treatise* his mind was working in a different plane, and it failed to produce a theory of employment, though it contained the highly significant conception that an increase of investment without (as we should now put it) a corresponding increase in propensity to save raises profits, while an increase in propensity to save without a corresponding increase in investment reduces them.

Over the continent, no doubt including Poland, the fog of orthodoxy was even thicker than in England. Only in Sweden Wicksell's pupils were puzzling out a new line. In *Monetary Equilibrium* published in Swedish in 1931, Gunnar Myrdal twitted Keynes upon his 'attractive Anglo-Saxon kind of unnecessary originality', but he was not altogether clear of the fog himself.

The *Treatise on Money* was passed for the last time to the printers in September, 1930, and Kahn's article appeared in the *Economic Journal* of June 1931, setting out the analysis of the multiplier—the relation of an increase in employment in investment to the total increase in employment that it generates—and showing how the rise in incomes that accompanies an increase in investment brings about a rise in savings of an equal amount.

There followed a great bout of argument that churned over these ideas for three years.

In 1933 I published a kind of interim report, which clears the ground for the new theory but does not supply it.[1] It was not till the summer of 1934 that Keynes succeeded in getting his theory of money, his theory of wages and Kahn's multiplier into a coherent system.

In January 1935 he wrote to Bernard Shaw: 'I believe myself to be writing a book on economic theory which will largely revolutionize—not, I suppose at once, but in the course of the

[1] 'The Theory of Money and the Analysis of Output', in the first number of the *Review of Economic Studies*, reprinted in *Collected Economic Papers*, Vol. I.

next ten years—the way the world thinks about economic problems.'[1]

The General Theory of Employment, Interest and Money was published in January, 1936.

Mcanwhile, without any contact either way, Michal Kalecki had found the same solution.

His book, *Essays in the Theory of Business Cycles*, published in Polish in 1933, clearly states the principle of effective demand in mathematical form. At the same time he was already exploring the implications of the analysis for the problem of a country's balance of trade, along the same lines that I followed in drawing riders from the *General Theory* in essays published in 1937.

The version of his theory set out in prose (published in 'Polska Gospodarcza' No. 43 X 1935) could very well be used today as an introduction to the theory of employment.

He opcns by attacking the orthodox theory at the most vital point—the view that unemployment could be reduced by cutting money wage rates. And he shows (a point that the Keynesians came to much later, and under his influence) that, if monopolistic influences prcvent prices from falling when wage costs are lowered, the situation is still worse, because reduced purchasing power causes a fall in sales of consumption goods, so that higher profit margins do not result in higher profits.

Having demolished the case for the orthodox remedy for a depression, he shows how an increase of investment, coming about, for instance, as the result of a great new invention, would increase employment, and then points out that if a spontaneous increase in investment is possible, it must be possible also by deliberate government policy to carry out schemes of investment that would not otherwise be undertaken and so relieve unemployment and increase consumption as well.

Kalecki's statement of the theory avoids the problem of the equality of saving and investment, which plagued us so much, by relying simply on the fact that the equivalent of investment outlay is added to profits. He cuts through another passage where Keynes made heavy weather by taking it for granted that the rate of interest is a monctary phenomenon. When investment, income and saving increase, it is necessary for the supply of the medium

[1] R. H. Harrod, *Life of Keynes*, p. 462.

of exchange to be increased also; otherwise the rate of interest would rise and a drag be set upon investment.

Kalecki did not approach the theory of employment through the multiplier, which makes his version in a way less rich than Keynes', though no less forceful. On the other hand, he went straight to a theory of the trade cycle, on which Keynes was very weak. In this essay there is a clear statement in a few lines of the capital-stock-adjustment mechanism which is now recognized as the basis for all modern trade-cycle models.

Michal Kalecki's claim to priority of publication is indisputable. With proper scholarly dignity (which, however, is unfortunately rather rare among scholars) he never mentioned this fact. And, indeed, except for the authors concerned, it is not particularly interesting to know who first got into print. The interesting thing is that two thinkers, from completely different political and intellectual starting points, should come to the same conclusion. For us in Cambridge it was a great comfort. Surrounded by blank misunderstanding, there were moments when we almost began to wonder if it was we who were mad or the others. In the serious sciences, original work is *discovery*—finding connections that were always there, waiting to be seen. That this could happen in economics was a reassurance that what we had discovered was really there.

I well remember my first meeting with Michal Kalecki—a strange visitor who was not only already familiar with our brand-new theories, but had even invented some of our private jokes. It gave me a kind of Pirandello feeling—was it he who was speaking or I? Reading his article of 1935 (now for the first time available in English[1]) gives me the same feeling. Several times, in those old days, I wrote that very article—though with less concentrated force—trying to explain Keynes' theory in simple words.

Kalecki had one great advantage over Keynes—he had never learned orthodox economics. The preface to the *General Theory* ends thus: 'The ideas which are here expressed so laboriously are extremely simple and should be obvious. The difficulty lies, not in the new ideas, but in escaping from the old ones, which ramify for those brought up as most of us have been, into every corner of our minds.'

[1] To be published 1966.

Kalecki was not brought up so. The only economics he had studied was Marx. Keynes could never make head or tail of Marx. In the letter to Shaw, quoted above, he maintains that his new theory is going to cut the ground from under the feet of the Marxists. But starting from Marx would have saved him a lot of trouble. Kahn, at the 'eireus' where we diseussed the *Treatise* in 1931, explained the problem of saving and investment by imagining a cordon round the capital-good industries and then studying the trade between them and the eonsumption-good industries; he was struggling to rediscover Marx's schema. Kalecki began at that point.

II

In his *Essays in the Theory of Economic Fluctuations* published after he had been a little while in England, he filled in several gaps in Keynes' formulation of the theory of employment.

In Keynes' scheme, the eoncept of *marginal efficiency of capital* means that, at any moment, there is in existenee a sehedule of possible investment projects, listed in descending order of their prospective profitability (allowing for risk). The sehedule is cut off at the point where the prospective rate of net profit is equal to the rate of interest to be paid for finanee. This determines the total value of investment to be undertaken. Kalecki asked the pertinent question: If there are schemes whieh promise a rate of profit greater than the rate of interest, would not each individual enterprise be willing and anxious to carry out an indefinitely large amount of investment? It was no use to reply that a faster rate of investment would raise the cost of eapital goods and so reduce the prospeetive rate of profit; for the rise in costs would eome about as a result of actual investment, *ex post*, while the marginal efficiency of capital concerns investment plans *ex ante*.

Kalecki supplied an answer, first by making elear the separation between investment decisions and actual investment; and second, by introducing into the argument the obvious fact that no individual enterprise ean command an indefinitely large amount of finance at a given rate of interest. He took risk over from the demand side (where it lies rather uneasily in Keynes' scheme) to the supply side, and postulated that the amount of finance that eaeh individual enterprise will commit to investment is in an

increasing function of the prospective rate of profit, depending upon the ratio of its borrowing to its own capital. Then, with any given distribution of capital amongst enterprises, there is particular relation between the total amount of investment plans being drawn up at any moment and the level of prospective profits.

The second difficulty was that, though Keynes himself attached great importance to the idea that the present is always overweighted in forming a view about the future, he treated his schedule of prospective profits as though it was independent of the actual rate of investment. Kalecki shows how a higher level of investment this year than last, means a higher level of current profits, therefore a higher expected rate of profit, therefore enlarged investment plans, therefore a higher rate of investment next year.

A rise in the actual rate of investment cannot go on indefinitely. When the rate of investment ceases to rise, the level of current profit ceases to rise. But the amount of productive capacity competing for sales is steadily growing. The rate of profit is therefore declining, and so the boom will break. Thus prosperity can never last. 'The tragedy of investment is that it causes crisis because it is useful.' He ended the argument with the poignant phrase: 'Doubtless many people will consider this theory paradoxical. But it is not the theory which is paradoxical, but its subject—the capitalist economy.'

The third point at which Kalecki tightened up the slack in the *General Theory* was in connection with the relation of prices to wages rates. Keynes relied upon a rather vague sort of Marshallian concept of competition, with short-period diminishing returns, so that an increase in employment is accompanied by a fall in real wages for workers already employed. Kalecki elaborated his original insight into the relation of monopolistic price policy to employment with the analysis of imperfect competition (then in its heyday) to produce his famous short-period theory of distribution in which the share of wages in the value of output is determined by the degree of monopoly.

This formulation has been attacked as being merely circular, since the degree of monopoly is defined as the ratio of gross margins to the value of output, and so is identically equal (on the stated assumptions) to one minus the share of wages. The apparent circularity lies only in the way the argument is set out.

When by degree monopoly we mean, not the *ex post* level of gross margins, but the price policy of firms, then, in slumpy conditions, when all plants are working under capacity, it is clearly true to say that if firms pursue a competitive policy, cutting prices in an attempt to sell more, real-wage rates will be higher, and the utilization of existing plant greater, than if they pursue a monopolistic policy, maintaining or even raising gross margins.

These amendments have been incorporated into 'Keynesian' thought; few of the present generation of 'Keynesians' stop to inquire how much they owe to Kalecki and how much indeed to Keynes. All the same, as Michal Kalecki is the first to admit, the 'Keynesian Revolution' in Western academic economics is rightly so called. For without Keynes' wide sweep, his brilliant polemic, and, above all, his position within the orthodox citadel in which he was brought up, the walls of obscurantism would have taken much longer to breach.

III

The political interpretation of the new theory for Kalecki was very different from the 'moderately conservative' implications that Keynes saw in it.

Keynes was thoroughly disgusted with latter-day capitalism for moral and aesthetic reasons, but he was by no means a socialist. After proving that building pyramids or digging holes in the ground and filling them up again would maintain effective demand and so prevent a fall in useful production, he adds, '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'. He believed, or at least he allowed himself to hope, that once the new theory was understood, capitalism would reform itself. If full employment could be maintained for a generation by useful investment (without much growth of population) poverty would melt away, and the rate of interest would fall so low that unearned income would cease to be a burden upon the economy. Only honest toil and imaginative speculation would be rewarded by society. (We have seen near-full employment maintained in the Western world since the war, not by useful investment, but, less harmlessly foolish than digging

holes, by piling up armaments. Keynes' analysis has proved correct, but his pleasant day-dream has turned into a nightmare.)

Kalecki saw a less agreeable vision. In an article written during the War,[1] he predicted that now that the causes of the commercial trade cycle are understood, we shall have instead a political trade cycle. The Government will make a full-employment policy by means of a budget deficit. When full employment prevails, prices will be rising and the bargaining position of workers will be strong.

'In this situation a powerful block is likely to be formed between big business and *rentier* interests, and they would probably find more than one economist to declare that the situation was manifestly unsound.' A return to 'sound finance' will create unemployment again. But as the next election looms up, the Government returns to the vote-getting policy of full employment.

'The regime of the "political business cycle" would be an artificial restoration of the position as it existed in nineteenth-century capitalism. Full employment would be reached only at the top of the boom, but slumps would be relatively mild and short lived.' This is a remarkably exact prediction of life in the Western world since the war. (But now that even a Conservative Government in England admits the need for planning, we may be entering a new phase.)

IV

After the war Michal Kalecki was mainly occupied with applications of theory to the diagnosis of current developments in the capitalist world, and to the problems of planning in the socialist world. But in the new wave of theory in Cambridge concerned with long-run growth his influence is still at work.

As well as the short-run theory of distribution connected with the 'degree of monopoly' his *Essays* contained a long-run theory based on the principle that 'the workers spend what they get and the capitalists get what they spend'. From this is derived the conception that the rate of profit on capital is determined by the rate of accumulation and the propensity to save of capitalists. Kaldor has called this the Keynesian theory of distribution, since it is adumbrated in the *Treatise*, but, like the *General Theory* itself, it has a separate source in Kalecki.

[1] 'Political Aspects of Full Employment', *Political Quarterly*, Oct. 1943.

THE GENERAL THEORY AFTER TWENTY-FIVE YEARS

Professor Johnson's address on the 'General Theory after Twenty-five Years' is already famous. Unluckily, he was just the wrong age to make such an appraisal. A younger man would have felt obliged to do some research to find out the orthodox theory that Keynes was attacking; an older man would himself have once been submitted to it. Professor Johnson, who grew up amid the controversies around the *General Theory*, thinks that he knows what it was all about, but actually he does not discuss the changes which Keynes' theory made in economic thought; he is confronting it with its own bastard progeny.

To take a single example, in the old teaching the distinction between real and money wages was extremely vague. Strange as it now seems, the question: What would be the effect upon the general level of prices of an overall revision of money-wage rates? was simply never put. (Marx had put it long ago, and come out with the wrong answer.) Professor Hicks, discussing trade-union policy, could dismiss the point with the hasty aside: 'By wages, we mean real wages' (*Theory of Wages*, p. 186). It was taken for granted, what Professor Meade has now articulately expressed, that any given quantity of 'capital' could employ any number of workers, because unemployment would cause real wages to fall, so making it profitable to employ more labour per unit of 'capital', until all the available workers were absorbed. The general price level had nothing to do with costs of production. It was treated in a separate volume and another course of lectures, under the heading of Money. This was the setting into which Keynes irrupted with the contention that the price level was mainly connected with the level of money-wage rates, while the monetary system was mainly connected with the rate of interest.

The bastard Keynesians criticize him in terms of arguments which are purely Keynesian (though formalistic and silly), showing how the effect upon prices of changes in money-wage rates reacts upon liquidity preference and the propensity to consume.

Part of a review of H. G. Johnson, 'Money, Trade and Economic Growth'. *Economic Journal* (London), September 1962.

Professor Johnson reproaches Keynes for the influence that Marshall had upon him, for he does not appreciate Marshall's good points. Marshall inherited from Ricardo two qualities which are lacking in the branch of the neo-classical school that derives from Walras. He had (though confusedly) a sense of time. The short period is here and now, with concrete stocks of means of production in existence. Incompatibilities in the situation—in particular between the capacity of equipment and expected demand for output—will determine what happens next. Long-period equilibrium is not at some date in the future; it is an imaginary state of affairs in which there are no incompatibilities in the existing situation, here and now. Secondly, Marshall had a sense of the structure of society. His world is peopled with types (though idealized in a way which nowadays sometimes seems comical) who have different parts to play—the business-man, the worker, the householder—each with his own characteristic motives and problems.

The bastard Keynesians point out that Keynes assumed that money-wage rates are rigid—more accurately, that the supply of liquidity is very much more flexible upwards than money-wage rates are downwards. Of course he did. The contemporary world, inhabited by bankers and financiers (who do not depend upon a fixed physical quantity of gold or cowrie shells to carry out monetary transactions) and managers and trade unionists (or, for that matter, mistresses and charwomen) is not reflected in a model in which money-wage rates can fall indefinitely, or in which the quantity of money remains constant when they are rising.

But the bastard-Keynesian model is not only silly. It is seriously defective in logic. Any arbitrarily fixed quantity of money (demarcated in any relevant way) is compatible with full employment, in conditions of short-period equilibrium, at some level of money-wage rates, the level being lower the smaller the postulated quantity of money, and the larger the labour force to be employed. This is supposed, in the bastard-Keynesian argument, to justify the contention that falling wages and prices are good for trade.

As far as inflation is concerned, Keynes' theory led to the prediction that a *high* level of employment would be liable to lead to *rising* prices. Monetary control, in so far as it was effective, would be able to operate only by reducing employment. This was

seen as a dangerous unsolved problem which, however, was not immediately urgent. Now, after more than thirty years (for it dates from the Macmillan Report) Keynes' theory of wages has suddenly become orthodox and acceptable (though a practical solution is still to seek). In this respect Professor Johnson's address (which pooh-poohs wages policy and hankers after some kind of refurbished Quantity Theory) has dated since it was delivered.

BEYOND FULL EMPLOYMENT

Ten years before the war, while the world slump deepened, Keynes was working out the theoretical basis for the view, which was always obvious to common sense, that when there is unemployment of workers and of productive capacity, in a market economy, an increase in expenditure in terms of money increases output in terms of goods.

Why was it necessary to have a theory to prove something so obvious, and why did it need a long and bitter argument to establish it? How was it that the opposite view, which was not only contrary to common sense but also completely devoid of application to reality, could have acquired all the weight and power of an established orthodoxy? If we knew the answer, we would understand the mechanism by which a society provides itself with the ideology that it needs.

Keynes found it

> . . . something of a curiosity and a mystery. It must have been due to a complex of suitabilities in the doctrine to the environment into which it was projected. That it reached conclusions quite different from what the ordinary uninstructed person would expect, added, I suppose, to its intellectual prestige. That its teaching, translated into practice, was austere and often unpalatable, lent it virtue. That it was adapted to carry a vast and consistent logical superstructure, gave it beauty. That it could explain much social injustice and apparent cruelty as an inevitable incident in the scheme of progress, and the attempt to change such things as likely on the whole to do more harm than good, commended it to authority. That it afforded a measure of justification to the free activities of the individual capitalist, attracted to it the support of the dominant social force behind authority.[1]

Certainly, it was well entrenched when Keynes began to attack it. In 1929 the British Treasury propounded the doctrine that government expenditure financed by borrowing would not increase the total of outlay—it would merely deflect an unchanged total of saving from foreign to home investment. A little

[1] *General Theory*, pp. 32–33.

Annals of Collective Economy (Liège), April-June, 1961.

later a learned representative of the Austrian school of economics came to London to teach that an increase in private expenditure would actually reduce employment.

To hack a way through the briars of rooted prejudice, Keynes had to concentrate on the central point—increased expenditure increases employment, by creating a profitable market, quite apart from whether it comes from the government, from private firms or from the general public; quite apart from whether it is useful in itself or wisely chosen.

Even in economic theory, old fallacies at last die out before new logic. By the time that war broke out the theoretical battle was pretty well won. War-time experience of full employment gave a crude and convincing demonstration that the old theory was wrong, and the conception that it was the business of governments to secure 'a high and stable level of employment' was officially accepted in England and America. It had long been an established orthodoxy in Sweden and soon spread to other nations, though to this very day resisted by some.

The old struggle has left a permanent mark on the new orthodoxy. The problem was conceived in terms of unemployment; the Keynesian doctrine was set out in terms of remedies for unemployment; the new policy is aimed at avoiding a return to unemployment. It seems quite natural that full employment should become an end in itself.

Keynes himself, who was bitterly contemptuous, in some moods, of the whole set of social and moral values based on capitalism, came out in the end as the defender of the market economy.

If this one blemish could be removed, the system was the 'best in sight'.

> Our criticism of the accepted classical theory of economics has consisted not so much in finding logical flaws in its analysis as in pointing out that its tacit assumptions are seldom or never satisfied, with the result that it cannot solve the economic problems of the actual world. But if our central controls succeed in establishing an aggregate volume of output corresponding to full employment as nearly as is practicable, the classical theory comes into its own again from this point onwards. If we suppose the volume of output to be given, i.e. to be determined by forces outside the classical scheme of thought, then there is no objection to be raised against the classical analysis of the manner in which private self-interest will determine what in particular is produced, in what proportions the factors of

production will be combined to produce it, and how the value of the final product will be distributed between them. Again, if we have dealt otherwise with the problem of thrift, there is no objection to be raised against the modern classical theory as to the degree of consilience between private and public advantage in conditions of perfect and imperfect competition respectively. Thus, apart from the necessity of central controls to bring about an adjustment between the propensity to consume and the inducement to invest, there is no more reason to socialize economic life than there was before.[1]

Certainly one must admit that capitalism with full employment which we have known since the war, is an impressive sight—the rapid growth in many countries, the spread of luxury and the reduction of misery; the greater freedom and self-respect of individuals, no longer cringing to keep a job or rotting without one. Corruption, crime and swindling have grown too, but even swindling is more lusty and cheerful in a seller's market.

In England certainly, and, I believe in all the prosperous capitalist nations, socialist ideals are in full retreat. The Labour Party, in particular, was foolish enough to maintain that a Conservative government would never be able to maintain employment, and they are left with nothing to offer when they have been proved wrong. Full-employment capitalism can easily afford to buy off opposition with higher earnings, social security, the educational ladder. Indeed, full-employment capitalism needs and knows how to get, a prosperous bourgeoisified working class to make a market for its output. The remnants of the bad old times, the slum dwellers, the aged on miserable pensions, the exploited immigrants, are isolated and cannot raise much political interest in getting their wrongs righted.

The success is very striking, but it is by no means complete. It has not been at all a simple matter to combine full employment with freedom of the market.

There are two major difficulties for a government pledged to a 'high and stable level of employment' and at the same time pledged to foster the greatest liberty for private enterprise and give the profit motive full play.

The first difficulty concerns a country's foreign balance—not only the necessity to make exports pay for imports, but the financial balance of the flow over the foreign exchanges of payments

[1] *General Theory*, p. 378.

of all kinds, including capital movements and speculative transactions.

There was a short time during the break-up of the gold standard after 1931 and again so long as war-time controls lasted, when it was possible for a national government to pursue an independent monetary policy. As controls have been dismantled and more and more freedom of convertibility of currencies has been restored, we have drifted back again on to something like the gold standard. The characteristic of the gold standard was that exchange rates were practically fixed and, for the leading financial centres of the capitalist world, there was a more or less unified money market. Consequently financial conditions in any one centre were sensitive to what was happening in others. If one raised interest rates, it attracted funds from others and forced them to follow it upwards. If one had a persistently favourable balance of payments—that is a surplus on the balance of trade on income account (exports over imports) not matched by a corresponding net outflow of lending—it was sucking up liquidity from the others (drawing gold and other reserves from them) and forcing them to take defensive action.

This system always worked on the principle of 'heads I win and tails you lose'. The centre gaining reserves was in a strong position and was able, if it wanted to, to lower interest rates, expand activity or increase lending. But it might very well prefer to go on gaining reserves. The centres in a weak position were obliged to check the loss of reserves, by raising interest rates and restricting activity. This kind of deflationary twist has come back into the world money market and now it is much more dangerous than before. When the gold standard was firmly and unquestionably established, speculation on exchange movements had no scope. With the imperfect, half-hearted gold standard of today, weakness in one centre sets speculative movements running against it, in the expectation that its exchange may be depreciated; and strength in one centre sets speculation running against the others, on rumours that its exchange may be appreciated. The exchanges therefore are even more of a preoccupation for national authorities than they used to be, and their freedom to make the monetary policy that suits their own internal conditions grows more and more restricted as the freedoms of the financiers and the speculators are enlarged.

The other major difficulty (which is partly connected with the problem of maintaining the balance of payments but also exists in its own right) is that, with the institutions of liberal capitalism, as they are nowadays, a high level of employment leads to continuously rising wages and prices. This is connected with the balance-of-payments problem, because if costs rise faster in one country than in others it loses competitive advantages in trade, which is a serious matter in itself and may moreover lead to rumours that the exchange will have to be depreciated to remedy it. Also, quite apart from this, it is troublesome in many ways to have a constantly falling purchasing power of money. It causes arbitrary hardships which are cruel to some (in England pensioners have suffered bitterly) and arbitrary gains that are demoralizing to others. A general expectation that inflation will continue requires an adaptation of institutions and habits which is a great nuisance to all concerned.

There is a lot of argument nowadays as to whether inflation comes from 'demand pull' or 'cost push'. From one point of view this is a meaningless question. A rise in demand, by itself, with constant money-wage rates, raises prices somewhat, and puts up profit margins. It does not cause prices to go on rising. A rise in money-wage rates raises both costs of production and the flow of money demand, so that prices go up. The situation that caused the rise is then reproduced and wages rise again. This can produce a continuous rise of prices. But high demand creates a situation favourable to rising wages. When there is less unemployment, a higher cost of living and higher profits, obviously the workers are in a strong position to demand higher wage rates and employers in a weak position to refuse. Demand pull and cost push are two sides of the same coin.

The only operative question is how much would demand have to fall to prevent prices from rising? The answer is a matter of fact. Experience in some countries has been that a check to demand sufficient to reduce the economy to stagnation and prevent real output from growing is not enough to keep wages from rising. As things are, a buoyant economy with a stable value of money seems to be an unattainable ideal.

These two difficulties are problems of machinery, not of economic reality. This can be seen if we compare the situation in a country like, say, Poland with ours. Poland also has a problem

of the balance of payments, but it is a *real* problem. There is no difficulty about matching payments with receipts—the difficulty is to have enough receipts from exports to pay for what she would like to buy. Financial and speculative movements have no scope, because foreign transactions are centrally controlled. She has a real difficulty in running the economy with a high level of investment, and at the same time providing goods for the workers to consume, but the discontent of workers cannot set wages and prices chasing each other, for money-wages are centrally controlled.

In the capitalist countries the real difficulties are much less than in Poland, for their real productivity and potential wealth is much greater and their need for rapid investment less. But their difficulties with the machinery for managing the economy are enormously greater.

Kalecki[1] long ago predicted that, when governments understood how to overcome the old commercial trade cycle, we should experience a political trade cycle.

High employment leading to rising wages would cause complaints about inflation; removing fear of the sack would cause complaints about lack of labour discipline; a cry for the return to 'sound finance' would be set up (supported, as Kalecki shrewdly predicted, by not a few economists). Budget surplus and a credit squeeze would then bring about a recession. But the return of unemployment would be frightening to a government needing votes at the next election. Relaxation would boost investment again. And so on round.*

This has turned out a remarkably good likeness of England under Conservative rule.

All the same, the political trade cycle is very mild compared to the real one, and by and large it seems right to say that full employment is now a firmly established article of Conservative orthodoxy.

But full employment is nonsensical as an orthodox policy. When orthodoxy maintained that nothing could be done, Keynes had to prove that anything is better than nothing. As soon as it is

[1] 'Political Aspects of Full Employment', in *Political Quarterly*, Oct.-Dec. 1943.

* Cf. p. 99.

accepted that we must have full employment in any case, the question to be discussed is *what* should be done.

Keynes's paradoxes—build pyramids, dig holes in the ground—have been taken literally. In U.S.A. in 1958, it is estimated[1] that expenditure on what is euphemistically called 'defence' was running at more than 11 per cent of the gross national product and in the U.K. at nearly 8 per cent, which is about equal in each country to the volume of productive industrial investment.[2] This means that without any extra sacrifice or any greater inflationary pressure than has been experienced, the annual increment of industrial productive capacity could have been about doubled if the arms race had been halted. And though such a policy is officially repudiated, there is strong evidence that stepping up military expenditure is relied upon by the U.S. administration as a corrective when a recession is threatened.[3]

It is the acceptance of full employment as an end in itself that permits democratic public opinion to allow such huge holes in the ground to be dug without any protest.

From the first, those of us who were labelled as 'left-wing Keynesians' maintained that the existence of unemployed resources should be regarded not as a troublesome problem but as a glorious opportunity—an opportunity to do something useful. The superficial success of the full employment policy based on the arms race has made left-wing Keynesians unpopular. I have sometimes wondered if I was the only one still extant. But now I am cheered to find that Mr. Khrushchev has joined us. He now proclaims that it is an error to suppose that capitalist prosperity needs an arms race—there are plenty of good and useful things to do.

What do we want to use our resources for? Keynes, in his conservative mood, pretended that the question need not be asked. The passage that I quoted just now is preceded by this:

> The State will have to exercise a guiding influence on the propensity to consume, partly through its scheme of taxation, partly by fixing the rate of interest, and partly, perhaps, in other ways. Furthermore, it seems unlikely that the influence of banking policy on the rate of interest will be sufficient by itself to determine an

[1] *Economic Review*, National Institute of Economic and Social Research, July 1960.
[2] *World Economic Survey* 1959, United Nations, p. 23.
[3] *World Economic Survey* 1958, United Nations, p. 186.

> optimum rate of investment. I conceive, therefore, that a somewhat comprehensive socialization of investment will prove the only means of securing an approximation to full employment; though this need not exclude all manner of compromises and of devices by which public authority will co-operate with private initiative. But beyond this no obvious case is made out for a system of State Socialism which would embrace most of the economic life of the community. It is not the ownership of the instruments of production which it is important for the State to assume. If the State is able to determine the aggregate amount of resources devoted to augmenting the instruments and the basic rate of reward to those who own them, it will have accomplished all that is necessary. Moreover, the necessary measures of socialization can be introduced gradually and without a break in the general traditions of society.

And he adds:

> I see no reason to suppose that the existing system seriously misemploys the factors of production which are in use. . . . It is in determining the volume, not the direction, of actual employment that the existing system has broken down.

But how can the volume be affected in the abstract, without concretely affecting its content? The means to support effective demand must encourage either investment or consumption. If investment, the methods found to increase capital formation cannot be separated from the objective—cheap money helps housing; a remission of business taxes helps the large firms, schemes such as industrial estates help the small; there is no such thing as investment in the abstract. If it is to be consumption, expenditure on social services helps the poor and tax remissions help the rich. There is no such thing as consumption in the abstract either.

Since Keynes's day, the problems of who is to benefit have been covered up by the cry for economic growth. The poor showing of the United Kingdom, which always seems to come bottom of the class in the annual U.N. examination, is a matter of grave concern. A better showing in the figures for growth is felt to be the prime objective that we should be aiming at.

Why do we worry about growth? Partly for very cogent reasons. A trading nation must keep up with the competitive pace set by others, and innovations, technical progress, and falling costs are not seen in a stagnating economy. When real income is growing we can afford to raise money wages without suffering rising prices,

so that the inflation problem is much eased, which reacts also on foreign trade. Social problems are more easily dealt with if no one has to suffer a loss to help others to a gain.

There are cogent reasons. But largely, I think, the cry for growth is just international 'keeping up with the Jones's'. We don't like to think of others growing when we do not.

The main reason why we have such a poor show in the United Kingdom is the way our full employment policy has been worked. When we are in the downward phase of the political trade cycle, the easy and pleasant solution is to reduce taxes and encourage consumption. When restraint is called for, it is a credit squeeze and less investment that pull in the reins. And when investment is restrained while arms expenditure is kept up, all the more restraint is needed on the growth-promoting element in investment. This is certainly improvident and is leading to a progressive weakening of our international position, which is all the more alarming in contrast to the spectacular successes of our old rivals, Germany and Japan, who seem to thrive on recovering from defeat in war even more than we suffer from enjoying victory.

But what is it that should grow? What is national wealth? The real national product that appears in the blue books is the volume of sales of goods and services, corrected for changes in prices. It is what is sold that counts. 'Productive' investment is investment that creates capacity to increase sales. Cleaning up slums, improving health and education, preserving wild country, are not counted as 'productive' activities. The issue is not between what is useful to society and what is not, but between what creates a field for profitable enterprise and what does not.

It is all matter of how the payment is collected. Anything that can be sold to individual buyers can be made to yield profits, but what has to be paid for collectively requires taxes. Buying goods is a pleasure and paying taxes is a burden.

Once more, it is a matter of financial machinery, not of economic reality. In the socialist countries, the distinction between taxes and profits has no importance. Investment, education and social services are all paid for in the turnover tax which is part of the prices of goods sold. In the U.S.S.R. it has recently been announced that income tax is to be abolished; this is sometimes presented as a matter for wonder and envy to the groaning

tax-payer in the West. But the real wonder is why the U.S.S.R. ever had an incomc-tax at all.

In the socialist system, the main fund for government expenditure is collected—in the same way as businesses in the West collect part of their funds for investment—out of profit margins. And the fund can be disposed of, for investment, say, in building factories or in building schools, as policy dictates. Neither one can claim to be more 'productive' than the other.

This question of the machinery for collecting payment goes very deep. Galbraith gives a telling account of the lush prosperity of the American 'affluent society' in terms of goods to buy and its penury and squalor in all public services. In England we are not so far gone, either in the affluence or the squalor. But it is a very strange thing to see what we can 'afford' and what is too great a 'burden' on national resources. We can afford office buildings of palatial grandeur, but not enough schools of the simplest kind. We can afford any number of advertising agents, but we cannot pay teachers sufficient salaries to keep up recruitment. We can fill the shops with gleaming piles of goods, but cannot let an old-age pensioner have enough money to buy a new overcoat.

The question of what we want to do with national resources is never put in these terms. It is disguised under the problems of machinery. No one likes to pay taxes.

The convention that what is profitable is productive serves to keep the whole question from being discussed. Create a full employment economy, where profits are easy to make, and you have a productive economy. No need to ask what is produced or who gets the benefit.

But we cannot really escape from having to think what should be done with our resources. Phrases about growth, about the free play of the market, the natural channels of trade and all the rest of it, cannot disguise the fact that political decisions are involved in economic policy.

And when we begin to think about the aims of policy, we cannot avoid thinking about the means. To discuss what kind of machinery would be required to carry out a different policy cuts much deeper than to discuss what policy should be.

It is easy to understand why full employment as an end in itself has been adopted as the banner of modern conservatism.

LATTER-DAY CAPITALISM

THERE was a Soviet joke in circulation some time ago, which gains point with every year that passes—Question: What is the greatest problem facing the President of the United States? Answer: Is it possible to have capitalism in one country?

For us the question is, do we really want to continue to keep the United States company? Are we satisfied with latter-day capitalism?

DIGGING HOLES

The strong case for the defence, of course, rests on full employment. Post-Keynesian capitalism *is* different. The generation that remembers the Thirties is constantly, thankfully, amazed at how different it is. To the generation that did not experience the Great Depression, such monstrously stupid, unnecessary misery seems scarcely credible. In 1944, when Beveridge wrote his Keynesian tract, *Full Employment in a Free Society*, it seemed Utopian to proclaim that the British economy could be run, when the war was over, with an *average* unemployment, one year with another, of 3 per cent; that is, with the figure for unemployment fluctuating fairly evenly between 1 per cent and 5 per cent. Since the war, statistical unemployment has barely touched 2 per cent. Whatever our present discontents, this is by no means to be despised. The worst part of heavy unemployment was not the waste of potential wealth (and, as we shall argue in a moment, its removal has not been achieved mainly by avoiding waste) but the rotting of individual lives, the damaged self-respect, the desperate egoism and cringing fear on one side and the smug self-deception on the other. Certainly we live now in a cleaner, more human country. But however thankful we should be for these blessings, it is too soon to claim that full employment vindicates latter-day capitalism.

First of all we must ask how it has been achieved. Keynes' opponents tried to mock him by saying that he advocated curing unemployment by setting men to dig holes in the ground and fill

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New Left Review (London), July-August 1962.

them up again. He turned the mockery the other way. If men were paid wages for digging holes, they would spend them on bread and boots—real income would be increased all round. To point up the paradoxes of the system, Keynes even argued that useless investments were more effective than useful ones.

> Ancient Egypt was doubly fortunate, and doubtless owed to this its fabled wealth, in that it possessed *two* activities, namely, pyramid-building as well as the search for the precious metals, the fruits of which, since they could not serve the needs of man by being consumed, did not stale with abundance. The Middle Ages built cathedrals and sang dirges. Two pyramids, two masses for the dead, are twice as good as one; but not so two railways from London to York.[1]

When effective demand falls off as the openings for profitable investment are filled, 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.[2]

Now we do understand the influences upon which effective demand depends, but do we manipulate them in a sensible way?

Effective demand in the capitalist world as a whole is interlinked through trade and finance, and when it flags in one major country, the rest suffer. The United States is more than a major country, it is something like half of the whole. For our full employment we are largely beholden to holes in the ground that Americans dig. In the United States, the declared military budget accounts for nearly 10 per cent of national income, and is equal to 60 per cent of gross investment. It is true, as the

[1] *General Theory of Employment, Interest and Money*, p. 131. [2] Ibid., p. 220.

United Nations Consultative Group argue,[1] that there is no physical, technical obstacle to prevent these resources from being deployed for peaceful purposes. But to do so would involve drastic political changes. Whatever might have been, in fact Keynesian prosperity has been a by-product of the Cold War.

So far as this country is concerned, armaments expenditure of 42 per cent of investment has been a burden rather than a stimulus to the economy. We could have done very well with more industrial investment and less inflationary pressure. But while our relative position in the capitalist world has been damaged by our own armaments, we are beholden, along with the capitalist world as a whole, to the support which the American economy, and so the world market, has received from theirs.

The Political Trade Cycle

Even so, the Keynesian policy has not worked very smoothly. Michal Kalecki, the Polish economist who discovered the *General Theory* independently of Keynes, predicted, twenty years ago, how it would work out, in an article that it is startling to re-read today.

> In the slump, either under the pressure of the masses, or even without it, public investment financed by borrowing will be undertaken to prevent large-scale unemployment. But if attempts are made to apply this method in order to maintain the high level of employment reached in the subsequent boom a strong opposition of 'business leaders' is likely to be encountered. As has already been argued, lasting full employment is not at all to their liking. The workers would 'get out of hand' and the 'captains of industry' would be anxious to 'teach them a lesson'. Moreover, the price increase in the up-swing is to the disadvantage of small and big *rentiers* and makes them 'boom tired'.
>
> In this situation a powerful block is likely to be formed between big business and the *rentier* interests, and they would probably find more than one economist to declare that the situation was manifestly unsound. The pressure of all these forces, and in particular of big business—as a rule influential in Government departments—would most probably induce the Government to return to the orthodox policy of cutting down the budget deficit. A slump would follow in which Government spending policy would come again into its own. . . .

[1] *Economic and Social Consequences of Disarmament*, United Nations, New York, 1962.

> The regime of the 'political business cycle' would be an artificial restoration of the position as it existed in nineteenth-century capitalism. Full employment would be reached only at the top of the boom, but slumps would be relatively mild and short lived.[1]

The touch about 'more than one economist' is particularly telling. The *Economist* newspaper, and several professors, have often argued for the greater 'flexibility' that would be introduced into the economy by a *little more* unemployment. (Sometimes Beveridge is congratulated on having said that an average of 3 per cent was the minimum to be aimed at.) And they give a sympathetic ear to the industrialists who complain about the workers who 'get out of hand'.

In this country monetary policy, rather than budget surpluses, have been used as the instrument for restriction. For us, 'excessive' activity is generally associated with an adverse balance of payments.

> Restrictive measures are usually called for at times when the country is losing monetary reserves, or having suffered heavy losses is trying to replenish them. This itself calls for dear money, on account of its influence on capital movements, quite apart from its effect in reducing the pressure of demand on the country's productive resources. A favourable balance of payments does not exert the same pressure in the opposite direction in favour of cheap money, because it is far less important to avoid gaining monetary reserves than to avoid losing them. Furthermore, a favourable balance of payments is, up to the point, likely to be taken out in relaxation of import and exchange controls rather than in pushing down rates of interest.[2]

The result has been that restriction in the downward phase of the 'political trade cycle' falls mainly upon investment, while the relaxation in the upward phase goes mainly to consumption. This has contributed to the poor showing of this country in long-run growth, though, certainly, it is not the only cause.

Stagnation

Even if anti-slump policy were perfectly successful, it would not be sufficient to maintain a healthy capitalist system. Technical progress is continually raising output per man hour in industry,

[1] 'Political Aspects of Full Employment', *The Political Quarterly*, Oct.-Dec. 1943.
[2] R. F. Kahn. Evidence submitted to the Radcliffe Committee.

and the labour force is continuously increasing. To preserve near-enough full employment, market demand must expand as fast as potential output; merely to prevent it from falling is not adequate.

In the 'Thirties the 'stagnation thesis' came into fashion in the United States, according to which the slowing up of population growth and the 'closing of the frontier' (that is, the completion of geographical expansion in North America) were destroying the need for further capital accumulation, so that there would soon be no useful outlet for the savings that the population desired to make. This, evidently, was a mere confusion. Even the richest country in the world is very far from having completed the useful accumulation of capital in a physical sense. What was lacking was not a public use for investment, but a sufficient prospect of private profit. And it now appears that the lack of prospective profits was not due to the cessation of potential growth, but just to the slump itself. The profitability of investment, for the economy as a whole, is very much a matter of 'thinking makes it so'. When each firm believes that the market will expand, all find that in fact it does, for the activity of each is generating demand for others. But just as there is no reason why there need be stagnation in a private-enterprise economy, there is no reason why there should not be. In recent years the United States economy has been following a mildly fluctuating course around a trend line of growth of around 2 per cent per annum, while potential output must be supposed at the very least to be growing at 4 per cent per annum, and, if the economy were really kept at stretch, at very much more. At each recovery from a mild recession, the gap between the best realized performance and the potential grows greater.

The leading capitalist nation seems to be gradually drifting into the situation of an underdeveloped economy. The characteristic feature of economic underdevelopment is that the system fails to offer jobs to all available workers, not through a temporary *fall* of demand, but for lack of a sufficient increase in the stock of means of production to employ them. This is the situation in which the United States now finds itself.

In his first pronouncement on economic affairs, President Kennedy stated that if industry had been working to capacity in 1960, 'over one-third of all unemployed would have had

jobs'.[1] It seems to be calmly accepted that the best boom to be hoped for (and even that was not achieved) would leave a considerable 'reserve army' unemployed.

There are two important mitigations of the tendency to long-run unemployment. The first is the shortening of working hours. This is consciously demanded by Trade Unions as a defence against redundancy (especially in face of the spread of automation, which is liable to cut sudden swathes through the demand for labour); it is not that the individual prefers more leisure to more income. It is a palliative, not a cure.

The second mitigation is the great growth of service trades which now account for more employment than the whole of industry. Until big business decides to march in (as it has already done into retailing) this provides an opportunity for self-employment for families spewed out from the industrial labour force by the advance of technology. This is one reason why the U.S. Trade-Union movement makes such remarkably little fuss about creeping stagnation.

Wages

The Keynesian prescription for preventing recessions left an important problem unsolved—inflation. To combine continuous full employment with the traditional wage system of liberal capitalism must be expected to lead to a perpetual 'vicious spiral'. This was an obvious prediction to make: '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.'[2] The prediction has been painfully fulfilled; but it seems that only during the last year or two has the situation been recognized by official orthodoxy. It seems that the authorities (supported as usual by 'more than one economist') preferred to remain in a fog of confusion in order not to have to face an awkward political situation at the practical level, or to admit, at the philosophical level, that the mechanisms of a 'free' capitalist system are inherently incapable of regulating themselves.

[1] Message to Congress, Feb. 2nd, 1961.
[2] Joan Robinson, *Essays in the Theory of Employment*, p. 24, written in 1936.

On the other side of the wage bargain the fog is just as great. It is obvious enough, once it is said, that the purchasing power of money depends mainly upon the money price of a man hour of labour, and that when that price is rising faster than output per man hour, the purchasing power of money is falling; but its implications are by no means easy to stomach. The moral is certainly not the simple one that, if only all money-wage rates could be kept from rising, no workers would be any the worse off.

> 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 organization 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 unemployment. 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]

To agree upon a pattern of 'fair relatives' even amongst the Trade Unions themselves, let alone as between them and the professionals, is admittedly a daunting task. The blind flailing around of the government with the 'pay pause' has certainly not advanced the matter.

Professor Phelps Brown made a useful comment in a letter to *The Times* (June 22, 1962):

> I would like to suggest that a main reason why income policy is being brought into disrepute is the failure to distinguish between two sorts of claim. The one sort if met will form part of the next round of rises, the other is meant only to catch up with past rounds.
>
> Underlying the first is the natural wish to do better as time goes on, but this has shown itself to be less peremptory than the resentment of discrimination and the demand for fair play that underlie the second. To restrain both sorts of claim alike is to tar all restraint with the brush of injustice.
>
> In practice most people do seem to believe that jobs of similar requirements should receive similar pay and to decide what rate of pay is fair for a particular job by comparing its requirements with

[1] Ibid., p. 39. I quote from my own early works, not out of vanity, but in order to show that the problem was already a part Keynesian theory even while the Depression lasted.

> the requirements and pay of others. The principle of 'fair comparison' is not merely one that has to be invoked for lack of the market test in the public service but is being applied continually in all walks of life. When some earnings move up sharply and others are left behind the disparity is usually felt to be unfair. Those who try to catch up are seen not just as demanding 'more for me' but as trying to right a wrong. . . .
>
> A money incomes policy can succeed only in so far as it allows disparities to be redressed. Whenever such a policy is inaugurated some disparities will be outstanding, and others will creep in as time goes on. Redressing then means raising the aggregate of money incomes, very likely by more than the national product warrants at the time. But if the head of resentment is allowed to build up, the rise will be faster before long, and—what is worse—the very idea of a common interest in avoiding too fast a rise will have gone by the board.

The 'pay pause' has evidently damaged the cause of developing a rational wages system.

But even if the problem of relatives could somehow or other be settled, it would settle only relative *earnings*. Is the labour movement ready to accept, and freeze for ever, the pattern of distribution between income from earnings and income from property? From one point if view, it would be perfectly reasonable to do so. The Labour Movement is evidently not in the mood for an all-out drive towards socialism. Then why not accept a junior partnership in capitalism and help it by all means to prosper and pay dividends? At heart, no doubt, this is just what the great majority feel. But to say so openly? To re-write Clause Four? To give up even the name of what their fathers fought for? Much better not to put the question, and just go on pretending that the struggle continues.

The Balance of Payments

Perpetual inflation is a great nuisance from many points of view, but there would be no imperative necessity for any one country to overcome it, if all experienced it to more or less the same degree. The really serious trouble besets a country whose level of money-wage rates, relatively to its productivity in tradeable goods, rises faster than others, when it is not free to depreciate its exchange rate to a corresponding extent. Its costs of production are rising faster than the world level and its competitive postion

in the world growing weaker. To try to cure this situation by curbing demand, 'creating slack' so as to reduce the upward pressure on wage rates, may do some good for a time, but it makes the long-run position all the worse, for it discourages investment, which, by increasing productivity, provides the only remedy. It is the realization, at long last, of the hopelessness of this policy that has led the authorities in this country to recognize the need for a wages policy (which is not to say that they have found one).

Looking at the picture from the other side, any country that has a relatively rapid rise in productivity in tradeable goods, compared to its rate of rise of money wages, is in a strong competitive position and finds itself developing a favourable balance of trade (an excess of export earnings over payments for imports). The proposition of the classical theory of international trade, that 'one country cannot undersell the others all round' is deduced from assumptions into which the conclusion has been slipped in advance. In fact one country can undersell others quite far enough round to give itself a large and growing favourable balance at their expense.

Periodic violent reversals of fortunes are a natural and inevitable consequence of international trade between developing capitalist countries, in a regime of more or less free trade and more or less fixed exchange rates. The money-wage level in various industries within each country keeps pretty well in step, but there is nothing to tether the wage levels of different countries to each other. Moreover, many industries, in any one country, share the same climate of technical development and aggressiveness in selling. Thus, at any one time, the competitive position of a whole country is strong or weak compared to the rest.

For some fifteen years after the war the United States was in the strong position, with a chronic tendency to a favourable balance of payments. A sufficient outflow of funds—for military subventions, development loans and private investment—prevented it from seriously upsetting the capitalist world trading system; the position seemed quite right and natural; books and articles were written to explain why it must inevitably be permanent. It was a great shock to discover that the dollar was just as capable of turning soft as any other currency.

The dollar has been embarrassed, primarily by the mark. It is possible to point to a number of reasons for the remarkable performance of the West German economy (especially the fact that her investible resources were used for building up basic productive capacity rather than 'digging holes' in armament production). Certainly, one important element in it was the relation of money-wage rates to productivity. The story shows clearly enough that Trade Unions who will accept the position of junior partner in a vigorous and technically progressive capitalist economy can do very well in terms of employment and rising real-wage rates. But the success comes precisely from permitting the country to enjoy a competitive advantage in trade over other capitalist nations. It cannot be maintained that the same medicine would work if it were universally applied.

Commodity Markets

The claim that post-war capitalism has avoided serious recessions is made from the point of view of the industrialized nations. Those whose share in capitalist prosperity depends upon the market for one or other primary product have a different experience to report. For most, a downward trend in relative prices has been overlaid by sharp fluctuations. In spite of much fine talk about wealthy nations aiding the underdeveloped economies to build up productive capacity, insuperable difficulties are put in their way by the 'free market' system, which makes it impossible to rely upon steady and expanding foreign earnings. The one class of primary producers whose markets are regulated for them—farmers inside the industrial nations—provide an exception which strikingly proves the rule.

'By-product of a Casino'

There was another hidden snag in the stream of Keynesian prosperity.

Without serious recessions, capital accumulation is continuously going on and a large part of it is financed by undistributed profits, so that the wealth of shareholders, taken overall, is increasing continuously without requiring any contribution from personal saving; moreover in an expanding economy exceptional and

chance gains on the average outweigh disappointments and losses over a run of years. The total value of the equity in industry would be rising even if it were not inflated in money terms by the rising price level. Expected future gains are reflected in present stock-exchange prices. To anyone who doubts that the gains will be realized, shares appear over-valued, for their present price contains a value which lies in an uncertain future. The position then is inherently unstable. The instability has not the violent and dramatic character of the South-Sea Bubble or of Wall Street in 1929, but it is of the same nature. When doubt spreads, the market quickly forms the view that prices were too high but it has no means of forming a view as to what level would be just right. Once a fall begins, there is no particular reason for it to stop.

The instability of the Stock Exchange is its own affair. If there were no risks there would be no profits. But if a stock-exchange slump precipitates a slump in industry it is a serious matter for the whole economy. Paper losses cause a drop in private expenditure, and collapse of the money value of capital discourages investment. Real prosperity, as well as money gains, depends on faith that prosperity will continue.

The Post-War Record

A run of seventeen years without a serious recession is a unique experience for capitalism. It has undermined the traditions of English socialism by making it seem plausible to argue that 'capitalism has changed'. So, indeed, it has, in that respect.

But how deep does the change go? It has not been proved that recessions can be avoided, except by armament expenditure, and, since to justify armaments, international tension has to be kept up, it appears that the cure is a good deal worse than the disease. It has not been proved that continuous prosperity is compatible with stable prices. It has not been proved that a tolerable system of trading relations can be developed between nations each pursuing its own economic policy. Above all, it has not been found possible to maintain the pace of development without which the system is continually in danger of falling below its stalling speed.

Affluent Cheeseparing

All this concerns the performance of latter-day capitalism on its own terms. A deeper doubt is raised by the question whether capitalism, even when prosperous, can provide us with what we really want.

The foundation of a comfortable standard life is a decent house. A family requires, above everything, a reliable health service and the best possible education; but growing wealth always leaves us with a greater deficiency in just those things. It is not an accident that it should be so. Capitalist industry is dazzingly efficient at producing goods to be sold in the shops, and, directly or indirectly, profits are derived from selling. The services to meet basic human needs do not lend themselves to mass production: they are not an easy field for making profits, especially as, with our egalitarian democratic notions, they have to be offered irrespective of means to pay. Consequently they must be largely provided through taxation. To supply goods is a source of profit, but to supply services is a 'burden upon industry'. It is for this reason that when, as a nation, 'we have never had it so good' we find that we 'cannot afford' just what we most need.

'GENERAL LIQUIDITY'

The Radcliffe Committee's treatment of the concept of liquidity has been dismissed by many critics as mere confusion. Certainly it is not easy to make out what the Committee intends to say, but we would be wrong to throw the 'ravell'd sleave' away; it contains clues which are well worth disentangling. Mr Jasay[1] has sorted one out, emphasizing the distinction between a rise in the level of interest rates that is generally and confidently expected to be permanent and one that is widely though vaguely expected to be followed by a relapse. There is another source of confusion in the attempt to treat a pattern as though it was a quantity.

Monetary authorities, the Report points out, cannot check investment by controlling the availability of funds when 'the money is already "there" ' (paragraph 388). What is 'the money' and where is 'there'? The money (which they expressly say need not be 'money in the bank') means, surely, any realizable assets, and 'there' means in the legal possession of a business or individual who is going to undertake investment. 'Money' in this sense means potential self-finance.

Let us suppose that, with all-seeing eyes, we can draw up a list of the schemes of investment under discussion at a particular moment, which will be carried out over the next year or two if finance proves to be available at about the terms which are ruling today. Now check through the list and mark off the projects that can be financed without borrowing. Generally speaking, a high ratio of potential self-finance to schemes in view is an influence tending to make investment high. An important motive for firms to retain profits is precisely the freedom that it will give them in the future to finance investment as and when they please; moreover, they may be inclined to undertake investment just because they have retained profits and want to use them for something or other. The existence of potential self-finance operates to promote investment, so to say, at a deeper level

[1] 'The Working of the Radcliffe Monetary System', *Oxford Economic Papers*, June 1960.

The Banker (London), December 1960.

than liquidity in the sense of an adequate and elastic supply of the medium of exchange. But it is of no use to speak of a *quantity* of potential self-finance. The essential point is the pattern of distribution of potential self-finance funds in relation to the pattern of the ability and will to carry out schemes of investment.

The point can easily be seen if we consider how the pattern may change as time goes by. Over any period, many firms are carrying out some self-financed investment, most are enjoying profits and retaining some part of them. The pool of potential self-finance is being filled as well as drained. For the sake of argument, let us suppose that over a particular period of a year or two the overall total remains pretty well constant—the rate of expenditure on investment financed from the funds of one set of firms is being continuously matched by the retention of profits by themselves and others. Now, within this constant total the pattern may be changing either way. When a large part of the disbursements are being made by young, lively firms and a large part of the retained profits is silting up in the ever-growing reserves of old, sleepy monopolies, the pattern of distribution of potential self-finance is rapidly growing less favourable to continuing investment. Contrariwise, when the lion's share of current profits is falling to the active, expanding firms who (perhaps just because they are keen on investment) have a high proportion of retention, new investment plans are growing ever easier to finance (provided that finance is to be used for physical investment and does not leak away through take-over bids).

The same principle applies, though less sharply, to the distribution of borrowing power. The schemes of investment listed under our imagined all-seeing eyes will partly be financed by borrowing from banks, by borrowing from other financial institutions and by new issues of various kinds. (We count only new issues required to finance the particular schemes on our list. In general, issues made in any one year are not an indication of the schemes of investment financed by new issues in that year. Many are funding operations replacing short debt by bonds or equities for investment already completed; some are being carried out with a view to investment one time or other in the belief that borrowing is easier just now than it is likely to be in the future.) The market in which borrowers and lenders meet is highly imperfect. The Radcliffe Report is apt to speak as though you either can get

money or you cannot. Once more the Committee confuses a pattern with a quantity. The distribution of borrowing power relatively to the distribution of the ability and will to invest is complex, ever changing and never precise. Moreover, borrowing power and potential self-finance are not independent of each other. The firms making high profits can choose whether to go in for a low retention ratio so as to enhance their power to borrow by new issues or for a high retention ratio to make borrowing less necessary. Yet with a sophisticated market, a high proportion of self-finance may also enhance a firm's reputation as a borrower.

All this cannot be simply described in terms of how much money is 'there', but the concept that the Committee tries to express in that phrase is highly relevant to the problems it wants to discuss. Let us see how it relates to liquidity in the narrow sense—the supply of the media of exchange—and to problems of monetary control over investment. As usual, the Report tangles up a number of distinct questions which have to be sorted out.

First, there is the question: What difference would have been made to the rate of investment this year if the level of interest rates had been higher? This is a hypothetical question. Even our imagined all-seeing eyes would not help us to answer it. We cannot observe two different levels of interest rates except at two different dates, and between the dates much will have altered besides the interest rates. However, by indirect means, we can get a general impression of the influence of higher as opposed to lower interest rates. The Committee concludes that the effect upon borrowing is not in general very important. This conclusion evidently applies *a fortiori* to the utilization of potential self-finance. If the prospect of having to pay higher interest is a weak impediment to borrowing, a prospect of having to forgo higher yields is a still weaker impediment to drawing on reserves. On this ticket, therefore, a pattern of distribution of potential self-finance that is favourable to investment lessens the effect (in any case weak) of differences in the level of interest rates upon the state of overall activity.

Now we come to the question of the influence of the total quantity of money in the narrow sense (cash and deposits in the regular banks) on the level of activity. A rise in the overall rate of investment between one year and the next, with its 'multiplier effect' increasing expenditure also for consumption, requires

an increase in the amount of money in the pipe-lines of circulation (even when money wage rates are not rising). When the banking system refuses to allow the overall total of money to increase, there is a rise in overall average 'velocity of circulation'. Does this involve a rise in interest rates and so have some effect (for what it is worth) that tends in the direction of damping down the rise in activity?

To get some light on this question, let us run our all-seeing eyes over the schemes of investment about to be carried out. Part will be self-financed; for these, a part of the finance has long been in the bank in a quite literal sense (surprisingly often actually in a current account). The disbursement of this finance automatically supplies money to the active circulation. It may well supply even more than is needed. If the proportion of the extra investment financed by disbursing cash reserves held specifically with such an end in view is sufficient to provide more cash than is required, over a certain period of time, there must be a reflux of deposits into idle balances somewhere in the system and a softening rather than a hardening of interest rates. Once more it is the pattern of ownership that matters, not the overall total of cash in existence. However, the Committee dismisses this whole question as a mere hangover from discarded habits of thought, and there is no need to find a fresh stick to beat a dead horse with.

Next comes the question on which the Committee has exposed itself to the sharpest criticism and yet on which the idea that it is groping after is the most cogent. That is, the question of the effect of a rise in the level of interest rates in reducing liquidity by causing a fall in capital values. As the Committee puts it, in terms of balance-sheet values (393), it seems to attribute to financial institutions a weak-minded reluctance to record on paper a real loss. As Mr Jasay has pointed out, the actual situation is the opposite. A sharp, unforeseen rise in interest rates, especially when it is advertised as part of a national crisis, is not expected to last. Anyone who sells securities when they are temporarily down is converting a paper loss into a real one.

How does such a believed-to-be-temporary rise in interest rates affect self-finance? Where the money is 'there' in the form of a portfolio (not literally in the bank), disbursing it will involve realizing capital in one form or another on unfavourable terms.

Short loans are now to be preferred. To close this obvious escape hatch in an emergency the Committee wants to see the rise in interest rates backed up by a credit squeeze that specifically strikes at bank advances (395), though it recognizes that over the long run resort to non-bank sources of finance is thereby encouraged.

Assuming that short-term accommodation is not to be had and that the sacrifice on realizing capital now rather than later is considerable, it may appear to some firms desirable to postpone investment until the expected recovery in capital values has occurred. This, presumably, is unlikely to affect schemes already started or even those already contracted for: it operates by delaying schemes that otherwise would have been started. (For this reason a credit squeeze may be expected to reach its full effectiveness some time after the crisis that it was designed to meet has passed off.)

Similarly for the schemes to be financed by borrowing. Where the quantity of borrowing power of a firm is limited, it is better to use it when favourable terms can be obtained. Issues will not be made in a weak market. In so far as less borrowing means less expenditure, a rise in interest rates that is not expected to last leads to a postponement of investment schemes.

But this effect is weak and unreliable. On the opposite tack there is no reason to believe that there is any effect at all. A fall in interest rates that is expected to be reversed, certainly, is favourable to borrowing and to moving potential self-finance out of securities into cash; but while there may be occasions when it is impossible to make investment without borrowing, there are none when the fact that borrowing has taken place forces investment to be done.

Shock treatment that consists in an occasional unexpected rise in interest rates loses its efficacy if it is used often; all the more so if it is advertised as official policy. The knowledge that this sort of thing is liable to happen produces a general permanent preference for cash (it brings about a rise in liquidity preference in the most literal sense). This either does or does not mean a permanently higher average level of interest rates, according to whether the banking system does not or does meet the extra demand for money. Either way, according to the Committee, it makes precious little difference to investment, for it is the

experience of a *rise* in interest rates, not the existence of a *high* level of rates, that restricts activity, except perhaps in house-building. (Whether they are right in this view, and if so, whether the moral to draw is that we ought to aim at a permanently low long-term rate for the sake of housing, is quite another story.) The credit squeeze, 'striking at bank advances', in the Report, seems to be aimed mainly at reinforcing the effect of a fall in capital values in inhibiting expenditure, by preventing resort to borrowing as a substitute for realizing a loss on capital.

But over and above the function of making the shock treatment effective, striking at bank advances has an obvious direct effect in checking activity. Once more, run all-seeing eyes over the schemes of investment being planned for the next few years, including those which consist in building up working capital for a higher rate of activity (or to look after raised wages costs), supplying credit to foreign buyers, etc. Amongst those that cannot be self-financed because the money is not 'there', some depend directly upon bank advances; where bank advances are refused they just have to be scratched.

This instrument of control, as the Committee recognizes, also becomes blunted by use. Lending to frustrated would-be clients of banks is a side-line for other institutions, which they are developing in any case as a regular business. When a squeeze is on, it is highly profitable business; a belief that squeezes will occur from time to time is a motive for them to maintain more liquidity than they would otherwise have done in order to be able to take advantage of it when it occurs. This (like the similar motive to keep potential self-finance liquid) has the effect of causing a *permanent* increase in the demand for money, while very much weakening the effect of *temporary* restrictions on supply.

All these methods of restriction, in so far as they work at all, work in a highly discriminatory manner; as the Report puts it, they are 'directional'; they bite hard on investment financed in some particular ways or on firms of some particular types, while leaving others untouched.

This does not mean that they are discriminating or directed to the selection of schemes of investment that *ought* (on any criterion) to be discouraged. Indeed, what are usually regarded as the most worthy—the development by young firms of new inventions and ventures into fresh export markets—are the easiest to kill. The

authorities, believing themselves to be caught in a crisis, are using the blunt instruments which happen to be to hand, to hit whatever they happen to be capable of hitting. Such expedients belong to the same category as the expedient of balancing the budget by cutting the pay of the armed forces.

Global, overall totals and averages are convenient theoretical abstractions. They do not really exist in real life. In real life there are particular individual cases and the pattern of relations to each other that they are in course of forming. Monetary policy as a rational, impartial and effective means of controlling total demand always was a myth, whether expressed in terms of a crude quantity theory or in more subtle modern sophistries. The Radcliffe Report, certainly, does not show much enthusiasm for the myth. If its authors had followed systematically the clues entangled in their own thought, it would have shown even less.

OWN RATES OF INTEREST

A RECENT article by Kaldor[1] revives interest in the mysterious chapter in the *General Theory* entitled 'The Essential Properties of Interest and Money'.

I

The basis of the problem that Keynes had in mind has to be deduced from his argument: it is not explicitly stated. It seems to be as follows. When the rate of growth of the labour force and technical progress are not sufficient to permit accumulation to go on indefinitely with a constant capital/output ratio, continued investment, raising the value of the stock of capital per unit of land and labour, must lead to a fall in the rate of profit to be expected on further investment. This Keynes merely takes over from orthodox theory and, for purposes of the present argument, we also may accept it without further inquiry.

Now, in his view, the process cannot be interrupted by lack of saving, for if investment takes place, savings to match it will be found, one way or another. But it may be held up by lack of willingness to lend at a rate which makes investment eligible.

Since the relations between saving and lending have been so much confused in the concept of 'the supply of loanable funds', it is worthwhile to spell them out in a formalized case. Suppose that, over a certain period, schemes of investment in new productive capital, at a cost of X units in money terms, are to be carried out. At the beginning of the period the firms concerned either already own or have guaranteed access to X units of purchasing power. They know the return on that sum (which is zero in the case of their own cash reserves) to be sacrificed by drawing on their own resources, to be paid on loans or (less precisely) to be expected of them on new issues of shares, and they have already taken into account this cost in framing their investment plans.

[1] N. Kaldor, 'Keynes' Theory of the Own Rates of Interest', *Essays on Economic Stability and Growth*, 1960, pp. 59–74.

Economic Journal (London), September 1961.

If we could, so to say, stain that particular volume of X units of expenditure and trace it through its future course we should see it generating income and expenditure on consumption, gradually leaking into savings as it flows on its way. When the whole process has been completed there has been (if all has gone according to plan) an addition to the stock of newly created productive capital estimated to be worth at least X, and there has been an accumulation of additional new wealth and depreciation allowances of an equal amount. The process of investment, through saving, is always recreating, with a time lag, the finance that it is absorbing. The new wealth has partly taken the form of gross undistributed profits of firms, and has partly accrued to rentiers. Some is held in cash, some in securities and some has repaid bank loans. One way or another these X units of wealth constitute potential finance for another X units worth of investment. But the attitude of the present owners of the X units of wealth to providing finance may be more or less favourable than was the attitude of those who financed the last round of investment.

It is this question of the changing willingness of owners of wealth to supply finance, as total wealth accumulates, that Keynes is concerned with. He expresses it in terms of the rate of interest which will be required to pay for loans, and his argument is that the rate of interest may refuse to fall as fast as the prospective rate of profit on investment, so that the process of accumulation will be brought to a halt.

For my part, I find a sentence full of 'own-rates of own-interest' and 'own-rates of money-interest' peculiarly hard to read, and I do not see that this language is necessary. Look at the matter from the point of view of an owner of wealth, and consider the return that he may expect from various possible uses of it, assimilating, as Keynes does, the profit from an active investment in production with the return on a placement made by a rentier. The assets he may choose between offer, in various combination, for any period of future time, q, the money value of the physical return on a productive asset (this may be a somewhat vague, but none the less real, quantity, such as the technical advantage of ample stocks of materials to a manufacturer); a, the expected rate of appreciation in the price of a physical asset by the end of the period; c, the costs of carrying the asset over that period;

and l, the liquidity premium, which measures the pure advantage of owning it. The point about *money* (over and above what is required for the active circulation) is that, by definition, its q, c and a are zero. Thus, when the owner of wealth holds money, he gets no return on it except l.

To make the rates of interest fall as the rate of profit on new investment falls, the quantity of money must be increased. Keynes' argument is that beyond a certain point the other rates refuse to fall because of the competition from l, the liquidity premium on money. But l will not pay the grocer's bill. An owner of wealth cannot live as a rentier (except by gradually consuming his wealth) unless he can lend to someone who will pay him for providing finance. As the rate of profit gradually falls, the rate of interest obtainable on new savings falls with it. Conversions or bankruptcies reduce the income from old loans correspondingly. Owners of wealth who are saving have a gradually increasing total of wealth to place. As the income obtainable from property falls they must perforce offer loans at a lower rate, and since something is better than nothing, there is no bottom stop to the rate they will accept, provided that it is sufficient to cover the risk of default. If lending finally dries up, it will be for lack of sound borrowers.

The point is clearly seen if we adopt Kaldor's emendation of Keynes' notation, and instead of giving money a possible l, the advantage of owning a perfectly liquid means of payment, give all other assets an appropriate negative r, the risk attached to them of loss of value in terms of money. Then for money (whose r is zero by definition) the total return is zero. When there is no asset for which $a + (q - c) - r$ is greater than zero, that is, whose money return does not cover the estimated risk, investment comes to an end. Looking at it this way, the trouble is clearly seen to arise from the fact that no one is in a position to borrow (or to risk his own funds), rather than from anyone's reluctance to lend.

Keynes' conception of liquidity preference was invented to answer the question: Why does anyone hold wealth in the form of money, which yields no interest, when interest is offered on other assets? And the answer runs in very short-period terms, depending on the state of expectations in a particular situation. It

does not pretend to answer the question: Why is anyone willing to offer interest? By thrusting it into a long-period situation in which the current and the expected demand price for finance have both fallen, Keynes has strained it beyond its powers.

II

In the course of the argument he casually throws out a suggestion which appears much more solid. That is that there may have been times when the desire to hold land had the effect of starving productive investment of finance. Kaldor objects that this could not be so, because a rise in the purchase price of a physical asset can lower its yield to any extent. This argument may be correct if all land is already in play within the circle of capitalist-minded owners of wealth, and is regarded as nothing but an income-yielding placement, like any other. Keynes, however, may have been thinking of 'historic environments' (such as, indeed, are to be found in many countries today) when the capitalist wealth-owners exist side by side with gentlemen, whom extravagance or misfortune from time to time forces to pledge their ancestral estates. The willingness of capitalists to lend on mortgage and to purchase land makes possible the dissaving of the gentlemen. Their expenditure may swell profits and saving in the capitalist sector; to keep the argument simple, we will postulate that the whole of their dissaving (as well as the equivalent of capitalist investment) accrues as saving within the capitalist sector. Then the X units of finance available at a particular moment may be divided into G, which will finance the dissaving of gentlemen by mortgaging land, and I, which will finance productive investment. After a time lag, $G + I$ has reappeared (on our assumption) as potential finance for another round, and will once more be allocated between the two forms according to their relative attractiveness to the owners of wealth within the capitalist sector. Now, so long as land is known to be safe and sound while all industrial investment has a high risk premium, and when, as Keynes assumed, the return to be expected in each round of I is less than on the last, lending to the gentlemen is a formidable rival to financing industry. In a very long run, no doubt, all the gentlemen will have been sold up, and this outlet for funds will

come to an end. Meanwhile, however, it may be preventing industry from getting started at all.[1]

There may be another element in the problem. When there is a factor, g per acre, measuring the money equivalent of the pure pleasure to capitalists of owning land, then evidently it is an additional influence keeping up the cost of finance to industry. If we could see safe industrial investments promising $(q - c)$ equal to say 10 per cent, while land offers 2 per cent money return on its purchase price (a being zero in both cases), we can infer that g is equal to 8 per cent on the purchase price per acre. Unfortunately, a perfectly safe industrial investment does not exist; there are two subjective, indecipherable elements in the equation, $-r$ for risk and $+g$ for the pleasure of owning land. We therefore cannot hope ever to be able to put an exact figure on the pleasure of gentlemanlikeness derived from owning land. The fact that a phenomenon is not exactly measurable does not mean that it is not important. In many economies today this problem is certainly a real one. Capitalist wealth is diverted to purchasing land at second hand which, if land had no g attached to it, would be more readily available to find an outlet in financing new investment.

This problem affects mainly countries in the early stages of capitalist development. There is a somewhat analogous problem in ripe economies. A take-over bid financed out of the profits of a successful business means a second-hand purchase of assets that already exist. The practice of making such purchases (like the practice of buying land from gentlemen) encourages and permits the sellers to consume more than their incomes, and so tends to reduce the overall propensity to save of the community; this is a serious problem in inflationary conditions, or when the balance of trade is a source of anxiety, but that is another matter. Here we are concerned with the question of whether this practice tends to keep up the cost of finance for constructive investment. To eliminate the effect upon thriftiness, let us suppose that the whole of the purchase price of shares subject to a take-over is held as wealth, in some form or other, by the recipients.

All wealth is potential finance. But there is a great difference in the quality of potential finance owned by different types of

[1] Professor K. N. Raj (in an unpublished paper) makes this point in connection with the loans of traders to peasants in rural India.

individuals and concerns. The very best kind, from the point of view of facilitating investment, is that which takes its origin in the retained profits of successful firms, and the worst that which has come into the hands of 'widows and orphans' to whom every r (necessary risk premium) seems terrifyingly great. Takeovers often transfer the ownership of wealth from retained profits literally to widows and orphans, when a family business is sold up; in general, they transfer it to merely average rentiers. There is thus a leakage of the best kind of potential finance into inferior forms, and the payment required for finance for constructive investment is consequently kept up. To put the point in another way, in so far as the own finance of firms is absorbed by buying second-hand equipment, new equipment has to be financed by borrowing, which is more expensive and less eligible than an expenditure of own finance.

Second-hand assets may be a particularly eligible investment from the point of view of an expanding firm, because they are already run in and carry their goodwill with them, but from the point of view of the economy as a whole there is only a problematic advantage to be gained from reorganization of the business, while a new constructive investment (if it is reasonably well conceived) adds more or less the equivalent of its value to real productive capacity.

There is no need to resort to Keynes' hypothesis of a long-run fall in the rate of profit on investment to show that this is a serious problem, for when the habit of making take-overs is spreading, it may reduce the supply of finance for real investment, even when the prospect of profit is constant.

Postscript

Some criticisms that have been made of this note show that it is liable to misunderstanding. It was not intended to attack Keynes' conception of liquidity preference, only to rescue it from what seems to me to be a misapplication, though by himself.

Liquidity preference is essentially connected with uncertainty. In the absence of lender's risk, the rate of interest is kept up by fear that it may rise. When fear had been eliminated by experience, there would remain, as a determinant of the rate

interest, only the composition of the stock of assets available to rentiers as a vehicle for holding wealth. The doctrine that Keynes had to attack was that the rate of interest is determined by the demand and supply of saving. In his system, the pattern of interest rates is influenced by the demand and supply of the stock of assets, including money.

Suppose that wealth increases relatively to the supply of securities, as might happen if firms cease for a time to issue any more bonds (Keynes' argument seems to exclude shares) but continue to invest, financing themselves by drawing on liquid reserves or on bank loans. Saving continues and total rentier wealth grows. It is unnatural to suppose that the increment of wealth is all being placed in bank deposits. The new savers want to get *something* on their money. Demand for the existing supply of bonds rises, and the rate of interest falls, until the firms are induced to start borrowing again. The rentiers cannot stand out for a higher rate of interest than anyone is willing to offer.

On the other hand, a lack of creditworthiness of the firms would inhibit lending. Presumably Keynes was thinking of prospective profits as inherently uncertain, so that a low best-guess rate of profit gives insufficient cover for the risk premium and makes borrowing impossible. It is r, not l, that causes the trouble.

When Keynes was writing that chapter, he admitted that he was groping for ideas that were new to him, and I do not think that he ever quite succeeded in seizing them.

The second point in the note can perhaps be understood in the light of the preceding article, which also tries to establish the concept of the *quality* of a fund of finance. As a finance fund revolves through the process of investment, saving and reinvestment, it changes ownership, and if it moves from the possession of owners with a low to others with a high liquidity preference it becomes so much the less available as time goes by. This is something over and above the danger that the fund may be deflected from financing investment to financing dissaving.

THE FINAL END OF *LAISSEZ-FAIRE*

KEYNES pronounced his famous discourse on the *End of Laissez-faire* in 1926. It has been a long time a-dying. To 'clear from the ground the metaphysical or general principles upon which, from time to time, *laissez-faire* has been founded', Keynes declared:

> 'It is *not* a correct deduction from the Principles of Economics that enlightened self-interest always operates in the public interest. Nor is it true that self-interest generally is enlightened; more often individuals acting separately to promote their own ends are too ignorant or too weak to attain even these. Experience does *not* show that individuals, when they make up a social unit, are always less clear-sighted than when they act separately.'

But the Principles of Economics were still being taught (though with many cautious reservations and exceptions) in such a way that the students were left with the impression that those deductions were not far wrong.

Even in the depth of the slump in 1932, Professor (now Lord) Robbins produced an *Essay on the Nature and Significance of Economic Science*, widely acclaimed, defining economics as 'The science which studies human behaviour as a relation between ends and scarce means which have alternative uses'. As the depression dragged on, the failure of the system to employ a large part of its means for any end at all became more and more painfully obvious. Keynes rebelling against orthodoxy, the Swedish economists following up the tentative insights of Wicksell, and Kalecki working with Marx's schema of reproduction, were converging upon the theory of effective demand. The failure of *laissez-faire* theory to allow for the spectacular breakdown of the system that had occurred in reality was traced to a logical flaw in the 'science'. It merely *assumed* the full utilization of the scarce means, because (without realizing what it was doing) it was arguing from the model of a non-monetary economy, where each producer owned his own means of production and worked as much or as little as he found it worthwhile to do in the light of the real return he could get for this labour. In adapting this

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model to the interpretation of contemporary capitalism, the orthodox economists had failed to notice that, under *laissez-faire*, there is no mechanism to ensure that the employment offered by profit-seeking enterprise will match the available labour force.

Keynes worked back to a new theory from practical proposals—since millions of men were out of work and plants standing idle, let the government step in and employ them on something or other. The new theory provided a systematic justification for the *ad hoc* policy. It was expressed in terms of the relation between investment and saving. If an economy were to be using its resources at full capacity, with the level of wages and distribution of income that that would entail, there would be a volume of expenditure for current consumption less than the full-capacity income, leaving a margin of saving. There is no mechanism in the system to ensure that firms and public authorities should have arranged to carry out schemes of investment just sufficient to absorb that amount of saving. If their schemes were to absorb more, there would be inflationary pressure, but normally they absorb less, and at that moment were absorbing very much less. Consequently income and consumption failed to attain to full capacity and savings were equated to investment at a low level. The main cause of the deficiency of investment was rooted in the very nature of unplanned private enterprise—if all firms increased their outlay, each would find his market growing: while for any one individual the prospect of profits were too uncertain to induce expansion. A subsidiary defect lay in wrong monetary policy, which kept the rate of interest that had to be paid for finance high in relation to the sagging level of the prospective rate of profit on new investment.

The new doctrine was stoutly resisted; controversy was still turbulent in 1939. War-time experience of full employment provided a crude illustration of Keynes' thesis, and when post-war reconstruction was being discussed his theory was enthroned as the new orthodoxy. The White Paper of 1944 on *Employment Policy* (Cmd. 6527) announced that the Government accepted 'as one of their primary aims and responsibilities the maintenance of a high and stable level of employment after the war'.

By a mixture of good luck and not too bad management, unemployment was kept very low (by pre-war standards) in North-West Europe for fifteen years after the war. Each recession

in the United States raised alarms which passed again. The economic miracles in Germany, France, Italy and Japan disconcerted the critics and astonished even the supporters of private enterprise. A new ideology has vaguely emerged, with very little intellectual content, beyond: Capitalism works, doesn't it? and a strong negative content of anti-socialism, nourished by the Cold War.

But the very fact that socialism is no longer merely struggling for existence in one country has made a radical change in the whole position. Capitalism nowadays is consciously in competition with a rival system, and this has put the spot-light upon *economic growth.*

Looking back to the days of scarce means with alternative ends, and of policies to prevent unemployment, it is surprising to remember the complete neglect of the question of long-run growth, which is now the main preoccupation both of economic theory and of policy.

This preoccupation arises, first, from the need to satisfy the demands of the peoples in the democratic west for a rising standard of life without having to achieve it by redistribution. Second, the break up of the colonial system has brought the problem of the under-developed countries into the centre of the stage. Thirdly, and perhaps most immediately, uneven development within the capitalist world is posing an awkward problem for the two nations, U.K. and U.S.A., who have always looked upon themselves as the leaders of capitalist development (as well as the home of economic science), and are chagrined when they find themselves near the bottom of the League Tables in which the scores of intra-capitalist competition in national income and foreign trade are annually recorded.

The emergence of growth as the leading economic problem has been a severe shock for *laissez-faire* ideology. The analysis of scarce means with alternative uses had no theory prepared to deal with it. There was nothing much in the old text-books about how means are created, by accumulation and education. The argument started in a stationary state, where accumulation has already been completed, or, at best, in a moving equilibrium where accumulation was assumed, in some unexplained way, to keep pace with the growth of the labour force. Now models have

to be hastily fudged up postulating full-employment on a Keynesian basis, with the monetary authorities manipulating the rate of interest in such a way that whatever 'society' desires to save will get invested. From the point of view of ideology, such models have a serious defect. All but a few fanatics admit that the overall amount of saving (at full-capacity operation of the economy) depends upon the distribution of wealth and income within society and upon the policy of firms in respect to withholding profits for self-finance. To represent the corresponding rate of accumulation as that 'desired by society', it is first necessary to show that the existing distribution of wealth is desirable; this is the question, of all others, that *laissez-faire* ideology is least anxious to discuss.

But whatever the right and proper rate of growth may be, the question would still remain of how to achieve it under private enterprise. The notion of an economy regulated by the rate of interest is a pure invention of the economists. The lore of Central Bankers, distilled from experience, had always been that Bank Rate can be used to control the foreign exchanges by operating on short-term capital flows. Round this economists draped a theory that a rise in the rate of interest, by causing unemployment, brings down prices, so stimulating exports and restricting importing, thus restoring the balance of payments. (The *locus classicus* for this construction is the Cunliffe Committee Report of 1918.) From this it was a short step to the argument that, in a closed system (without foreign trade), the rate of interest could regulate the level of employment. (Keynes' formal analysis is used to prop up this construction, but he did not himself believe in it. He cherished a different dream. With a few decades of the accumulation necessary to maintain full employment, capital would become so plentiful, and the rate of return upon it would be reduced so low, as to bring about the euthanasia of the rentier, and capitalism would be painlessly transmogrified into a morally acceptable system.)

As a basis for policy, the conception of almost-*laissez-faire*, with near-full employment, maintained by monetary control, has met with an insurmountable obstacle—the behaviour of prices. To the Keynesians it was obvious from the first that a long run of near-full employment would lead to continuously rising money-wage rates and prices. The argument between

cost-push and demand-pull is only logic-chopping. With free wage bargaining conducted industry by industry, a *high* level of overall employment leads to a *rising* overall level of wages, raising both costs and demand on money terms. The overall level of wages rising faster than productivity leads to a rising overall level of prices. If demand were slacker, cost-push would be weaker, and wages would not rise so fast. But with slack demand, productivity also would increase less fast. Perpetual inflation is a great nuisance, but latter-day capitalism seems to be able to adapt to it fairly well. Only a few, even among orthodox economists, seriously advocate seeking unemployment and stagnation in order to prevent it (and they persuade themselves that *very little* unemployment would be enough, though very little to them is more than the electorate will tolerate).

But the choice cannot be made by one country alone. For one capitalist country, where wages rise faster than the rest and productivity less fast, the competitive position in world markets is deteriorating, and if (as for U.K.) its balance of trade position was already weak for long-term reasons, something has to be done about it. Exchange depreciation is a quick remedy, but then a separate influence (the cost of imports) raises home prices, and money wages are liable to rise all the faster. To check investment by a drastic use of the monetary brake may bring the growth of productivity to a halt without creating enough unemployment to stop wages from rising. Groping about for the last twelve years with monetary controls in a fog of contradictory theories, has at last brought official orthodoxy in England to recognize the facts of modern life.

Now the cry is all for a wages policy and planned investment. Beveridge described the White Paper of 1944 as epoch marking. It marked the recognition by official orthodoxy that unplanned private enterprise cannot be relied upon to maintain employment. The setting up of N.I.C. and N.E.D.C. to advise the authorities on incomes and national economic development marks the recognition by a Conservative British government that the monetary and fiscal policies hitherto relied upon to maintain a 'satisfactory' level of employment are not adequate also to maintain stable prices and 'satisfactory' growth.

The Report of N.E.D.C. on *Conditions Favourable to Faster Growth* is significant, not so much for anything very definite that it says,

but for what it takes for granted as acceptable to official orthodoxy.

Even in 1944 it was admitted that geographical *laissez-faire* cannot be followed completely—some control is necessary over the siting of enterprises and the provision of housing. The N.E.D.C. report goes much further in calling for planned geographical development. It affirms, moreover, that the problems arising from uneven regional development are easier to solve when the overall level of demand for labour in the country is high. (Those who advocate 'allowing a bit of slack' to make the economy 'more flexible' are given no support.)

It attributes ill effects to the 'stop and go' policy which has been pursued in recent years in a short-sighted reaction to the movements of the balance of payments. Above all, it rejects the idea that the coat of national development must be skimped to fit the shrunken cloth of export receipts.

It might be thought that it would also be possible to improve the balance of payments by having a lower underlying rate of growth and so a slower growth of imports, but this does not appear to be so. A faster underlying rate of growth implies a faster increase in productivity. There would have to be higher investment and more rapid technical improvements. All these should strengthen our competitive position. In the past, countries which have grown most rapidly have also managed to increase their exports fastest. No doubt the causation worked both ways, but to some extent the rapid increase in exports was due to the same factors that led to growth in the economy as a whole.

The menace of inflation can be checked only by a national wages policy (though the Report has not much to say about it except that 'it may be difficult to achieve'). One way or another (they cannot of course mention devaluation) the balance of payments problem must be dealt with so as to permit a high level of activity to be maintained.

The language is not inspiring nor the recommendations forceful, but it is 'epoch marking' all the same. It marks the final abandonment of the tattered shreds of *laissez-faire* ideology.

The disintegration of what once appeared to be the imposing logical structure of *laissez-faire* economics does not in itself change very much. The concentration of economic power that Marx foresaw has come to pass. The main structure of latter-day

capitalism consists in a few large enterprises dominating each industry with a fringe of small business growing and declining around them. The enterprise takes on a kind of organic life of its own and commands the loyalty of successive generations of executives. But Marx's prediction that capitalism would grow correspondingly fiercer has not proved correct. The motives that impell the modern enterprise cannot really be described as merely the pursuit of profit. Certainly profits are its object and its mark of success, but it needs profits in order to grow, rather than wanting to grow in order to make more profits. As productivity increases, part of the benefit is passed on to keep the workers quiet, for industrial strife is not helpful to growth. The managers know very well that if each invests all will flourish; they are by no means averse to a Government policy 'favourable to faster growth' even if it means that they have to accept some limitations on their freedom in order to fit in with a general scheme. They would certain prefer a wages policy to periodic credit squeezes. They favour improved education and do not much object to the Welfare State. A contented labour force is all to the good. We have drifted into an economic system that has some features of feudalism—a system of exploitation within a frame-work of accepted mutual obligations. It is noticeable that the new-style capitalism of self-perpetuating large-scale enterprises is scoring its greatest successes in Japan, where it was installed while the personal relationships and mental habits formed by feudalism were still intact. *Laissez-faire* ideology is no longer appropriate.

All the same, the disintegration of the old creed leaves a gap. What is it all supposed to be for? Political aims require economic planning to carry them out. It is equally true that economic planning require political aims. Without some aim, how are the planners to know what to plan? The new cry for growth (apart from the urgent need to get the balance of payments into shape) it not an aim in itself. What is to grow? How long can we accept the tale that we 'cannot afford' an adequate supply of teachers and doctors when we can 'afford' the profits made by selling motor cars? Even the mild degree of planning represented by government intervention to assist the great firms to co-ordinate their activities brings economic questions into the arena of democratic

politics, from which the doctrine of *laissez-faire* was designed precisely to fence them off.

For the time being the Cold War serves to smother argument. Evidently our leaders do not take the Russian threat seriously (if they did, they would have noticed that our exposed position makes us nothing but a liability from the strategic point of view) but they have bemused themselves into thinking that our 'defence effort' gives us some kind of influence with the U.S. administration and so some weight in the councils of the world. As the contradictions in official propaganda grow more obvious the burden grows harder to bear. The lowering atmosphere in England today, which everyone remarks upon, the feeble bragging (which was not our way when we had something to boast about) and the tiresome self-depreciation are fed by the lack of a sense of national purpose.

Keynes drew the same conclusion from the breakdown of *laissez-faire* ideology which he foreknew:

> The next step forward must come, not from political agitation or premature experiments, but from thought. We need by an effort of the mind to elucidate our own feelings. At present our sympathy and our judgment are liable to be on different sides, which is a painful and paralysing state of mind. In the field of action reformers will not be successful until they can steadily pursue a clear and definite object with their intellects and their feelings in tune. There is no party in the world at present which appears to me to be pursuing right aims by right methods. Material Poverty provides the incentive to change precisely in situations where there is very little margin for experiments. Material Prosperity removes the incentive just when it might be safe to take a chance. Europe lacks the means, America the will, to make a move. We need a new set of convictions which spring naturally from a candid examination of our own inner feelings in relation to the outside facts.

Common sense suggests a simple answer. Let us wind up with all speed the few rags of empire left and leave the U.S. to their arms race and their space race. If N.E.D.C. calculates that with our 'defence effort', we could immediately achieve four per cent per annum growth, we could evidently quickly work up to six or seven per cent without it. At that rate the wages problem would become manageable. With planned development ensuring high-level activity and continuous growth, we could have a comfortable life at home, clear up our own patches of

poverty, and still dispose of a sufficient margin to make a substantial contribution to assisting the under-developed countries. So interesting careers would open up for our young people and restore their pride (conceit if you like) in the political wisdom and technological skill for which we were once famous.

As our present policies grow more obviously absurd one almost begins to hope that common sense might prevail.

PART III

MARXISM: RELIGION AND SCIENCE

One of the most important contributions of Marx to the development of thought was the concept of ideology—the recognition that ideas and beliefs, especially in the sphere of the social sciences, are an expression of economic interests.

As the Soviet *Textbook* puts it:

> Political economy studies, not some transcendental questions detached from life, but very real and living questions which affect the vital interests of men, society, classes. Are the downfall of capitalism and the triumph of the socialist system of economy inevitable; do the interests of capitalism contradict those of society and of the progressive development of mankind; is the working class capitalism's grave-digger and the bearer of the idea of the liberation of society from capitalism—all these and similar questions are answered differently by different economists, depending on which class's interests they voice. That is just why there does not exist one single political economy for all classes of society, but instead several political economies; bourgeois political economy, proletarian political economy, and also the political economy of the intermediate classes; petty-bourgeois political economy.[1]

But Marxism itself is an ideology. Is it not then just as much an expression of interests, and just as little a branch of science as any other?

The *Textbook* faces the dilemma squarely, and hacks it down.

> Is it possible in general for a political economy to exist which is objective, impartial and does not fear the truth? Certainly this is possible. Such an objective political economy can only be the political economy of that class which has no interest in slurring over the contradictions and sore places of capitalism, which has no interest in preserving the capitalist order: the class whose interests merge with the interests of liberating society from capitalist slavery, whose interests coincide with the interests of mankind's progressive development. Such a class is the working class. Therefore an objective

[1] *Political Economy*. A Textbook issued by the Institute of Economics of the Academy of Sciences of the U.S.S.R. (English version Lawrence and Wishart, London, 1957), p. xx.

Monthly Review (New York), December 1962.

and disinterested political economy can only be that which is based on the interests of the working class. This political economy is the political economy of Marxism-Leninism.[1]

This itself could be treated as a scientific hypothesis. We might inquire whether the claim that Marxism is more scientific than other ideologies (on whatever criteria seems reasonable) is borne out by the evidence.

It is not easy to demarcate 'Marxism', for the purpose of such an inquiry, and separate it clearly from 'non-Marxism'. Marx's teachings were only one element in a wide stream of thought—the growing self-consciousness of modern man as a social being, and of man in society as a potential object of scientific investigation—which would in any case have borne many ideas like his in its course. At the same time, Marx's contribution to that stream was so important and has had so great an influence on the habits of thought of his opponents as well as his supporters, that it is as difficult nowadays to find a really pure non-Marxist amongst historians and sociologists as it is to find a flat-earthist amongst geographers.

In economics, however, a purely non-Marxist doctrine was for long incapsulated in the impermeable casing of neo-classical static equilibrium theory. Here the contrast is clear cut, and the comparison, certainly, is highly favourable to Marx. The relevance, the scope, and the penetration of his analysis of the 'laws of motion of capitalism' make the marginalists' scholasticism appear merely frivolous. Indeed, since the capsule was broken open from within by Keynes, there has been the same sort of infiltration of Marxian ideas into economic theory as had already occurred in history. For a discussion of the questions nowadays found to be interesting—growth and stagnation, technical progress and the demand for labour, the balance of sectors in an expanding economy—Marxian theory provides a starting point where academic teaching was totally blank.

On the other hand, there are certain deficiencies in the Marxian apparatus, which have often been noticed. The lack of a measure of physical output, to supplement *value* (a unit of labour-time) cripples the analysis of real income; the definition of a key concept

[1] Loc. cit., p. xxi.

—the organic composition of capital—is ambiguous; the treatment of the relation between the level of real wages and the money-wage bargain is unsatisfactory. And so forth.

But any such attempt at evaluation is beside the point. The *Textbook* is not inviting students to make a critical appraisal of the statement that Marxist ideology is scientific. It expects them to believe it. The appeal of ideology is to faith. With faith, science comes to a halt.

It was inevitable that it should be so. A revolutionary movement needs faith; an organized society requires an established orthodoxy. The scientific aspect of Marxism had to give way to the need for a creed.

I

The religious emotions of Communists are described only by those who have become disillusioned, which gives their testimony a tainted air; all the same it provides some evidence. Take Djilas for example:

> For the Yugoslavs, Moscow was not only a political and spiritual centre, but the realization of an abstract ideal—the 'classless society', something that not only made their sacrifice and suffering easy and sweet, but that justified their very existence in their own eyes.[1]

After his first interview with Stalin:

> It was already dusk as we were leaving the Kremlin. . . . The northern lights can be seen at Moscow at that time of year, and everything was violet hued and shimmering—a world of unreality more beautiful than the one in which we had been living.
> Somehow that is how it felt in my soul.[2]

When you come to think of it, there is nothing surprising in a rationalist ideology serving as a religion. Whatever it is in the biological make-up of mankind that, over all recorded ages, has given rise to the need for faith, the combinations that have made religion a political force, the problems of private and public life that religion helps to ease, could not be suddenly abolished by teaching people to believe that God was invented to serve the interests of a ruling class. From the point of view of a rationalist, God never did exist, but religion always has. To

[1] *Conversations with Stalin*, p. 15. [2] Ibid., p. 64.

abolish God does not make any radical difference. And if it did, mere scepticism could not call up the devotion and heroism to carry through a revolution, or the cohesion and discipline to rebuilt society after it. A rationalist may feel that he gets on all the better without religion. But those of us who take that view have to admit that we are really parasites, drawing nourishment from the effects of faith in others. Without our professing the beliefs of our forebears, our habits of thought and behaviour run in grooves which they wore out.

It is not only that rulers like to have some opium to keep their people tranquil. More than anyone, the leaders of a political movement require the guidance and support of an accepted doctrine. Power may quickly corrupt, but to take power in the first place mere cunning and ambition have rarely been sufficient; the leader must have the self-confidence that comes from faith.

Self-confidence cuts both ways. 'I must believe in whatever is right' easily slips into 'Whatever I believe in must be right'. Thus all kinds of idiosyncracies, for better or worse, get embodied in the creed. The fact that Mohammed loved a widow had a liberalizing effect on Moslem institutions; the fact that Stalin was a Philistine was disastrous for Soviet art.

Faith brings in its train the persecution of unbelievers. It is evidently part of the social function of religion to inhibit natural kindliness and steel the heart against deviants within a group or aliens without.

Of all the great systems, it could be argued that Christianity, on its public, historical record, is the most bloodstained and oppressive; the most obscurantist; the most bluntly opposed to the teaching of its founder, and therefore the most hypocritical. But none is innocent. Jains, who literally would not hurt a fly, have been known to knife each other in doctrinal disputes between sects.

It seems that the illusions of Djilas and his like were the consequence of that trick of confusing ideology with truth that the *Textbook* so blatantly displays. Since their faith purported to be rationalist, they did not recognize that it was a religion and were shocked to find that it could produce just those results that, to a rationalist, make religion most repugnant.

II

It was inevitable, and in a certain sense right, that Marxism should have developed into a faith rather than a science. The notion of a scientific revolution is delusory. Action has to be taken much faster than science can work out results. Marx made the first attempt to establish the laws of motion of capitalism. His hypotheses have been confirmed by events at some points and disproved at others. To check, revise, and establish them is a programme for generations.

Moreover, it is not only a matter of time, but of the way the human mind works. The intellect cannot provide the driving power for political action. Science cannot propose any objective except science. The applied scientist has his aims given to him from outside his own discipline—to increase production, to reduce disease, to poison and smash up the world, as the case may be.

The analyst of history may predict that a revolution will occur. He predicts it because he thinks that he can see that the idealism, the interests, and the passions of the oppressed will bring it about, and that the balance of forces is such that it will succeed. As a scientist, his business is to investigate the process and to see if his prediction turns out right. As a human being, if his sympathy is with the oppressed, he is impelled to use his intellectual authority to give them courage and comfort with his prediction of their success. He ceases to be a scientist and becomes a prophet. No one who shares his sympathy with the oppressed can say that he is wrong. But the prophecy is useful because it is believed. It is believed because it is believed to be true, not because it is believed to be useful. Then hypothesis becomes dogma, and science is drowned in theology.

A new faith establishes itself through the appropriateness of the feelings and behaviour that it calls forth to the situation into which it is injected. The details of the intellectual content of its doctrines are rather a matter of luck.

This is a thought that professed Marxists find totally unacceptable. To them, the achievements of the Soviet Union are a proof of the correctness of Marx's theories. This line of argument has worn thin since those achievements have been admitted to be scarred with errors and crimes. To claim the successes for Marxism and blame the rest on a 'cult of personality' that Marxism was

powerless to check is analogous to defending the historical record of Christianity by identifying it with the teaching of the Gospels and blaming the rest on original sin.

In any case the argument is based on much too simple a view of the relation between belief and action. After all, the British Empire, in its day, was a resounding success; and though this may have been connected with the influence of Protestant education on character, it could not be claimed to prove the truth of the Anglican version of Christian theology.

The ideology which Marx developed for the industrial working class of the leading capitalist nations has been transplanted and taken root outside the capitalist sphere. There could not but be large discrepancies between the theory and the situation in which it was applied. All the same there were elements in Marxian doctrine that were of priceless value to the Soviet system.

The notion that national patriotism means nothing to the working class encouraged Lenin's policy of defeatism which made the October Revolution possible. The belief that property is the seat of power led to the establishment of thoroughgoing socialism. Marxism cannot claim any particular credit for the development of economic planning. Planning was forced upon the system by the very fact of expropriation. Since there were no capitalists to carry out investment, some other means was necessary to fulfil their function. (Its success has now brought planning into fashion in the capitalist world, and a new ideology is being propagated according to which property is not after all necessary for control.) But Marxism can claim the credit for saving the planners from believing in academic economics. Imagine the present state of Russian industry if they had regarded their task as the 'allocation of given resources between alternative uses' instead of 'the ripening of the productive power of social labour' by investment, exploration, and education.

On the other hand there are important aspects in which Marxian doctrines have been a drawback rather than a help in building socialist states.

To decry national patriotism was useful in 1918, but heavy drafts had to be made upon it later. The discrepancy between theory and practice has led to a kind of emotional confusion about the whole subject, which no doubt contributed to the clumsy

handling by Russians of other peoples' national susceptibilities and has even permitted racism to survive in the socialist world.

Marx's concentration upon the industrial working class has turned out unfortunately since the revolutions made under his banner have been in predominantly peasant countries. The Chinese had to pay a heavy price before the doctrine could be altered. The neglect of agriculture in the scriptures is no doubt partly to blame for its poor showing in practice. The failure to allow *value* to natural resources is today being criticized in the Soviet Union as a serious cause of wasteful planning.

Marx's attitude to the population problem left a pernicious legacy to the modern world. (It was certainly necessary for him to attack the reactionary pessimism of Malthus, but he might well have given his blessing to Francis Place.)

The prediction of 'growing misery' for the workers under capitalism is a more doubtful case. It seemed very plausible when it was made, and unemployment gave it a new lease of life in the 30's but today it has been obviously falsified; to continue proclaiming it in face of experience has contributed to discrediting the Communist Party with the labour movement in the West. But if Marx had correctly foreseen that capitalism was going to douse the class consciousness of the industrial workers with television, washing machines, and a five-day week, the wind would have been completely taken out of his sails. This error, like Jesus' belief that the world was shortly coming to an end, is so central to the whole doctrine that it is hard to see how it could have been put afloat without it.

Here is a point of great difficulty for the theologians. They are torn between denying that real-wage rates have risen in the West, and denying that Marx predicted that they would not. A recent restatement of Marxist doctrines—*Traité d'économie Marxiste*, by Ernest Mandel, temperate, learned, and reasonable as far as the commitment to orthodoxy permits—rejects the fanciful arguments put forward, for instance, by Arzumanian, to explain away the facts. (I have heard it said that, for an American worker, a motor car is part of the *value of labour power*, because he needs to get to the factory from the suburb where he lives.) The author chooses the other way out of the difficulty, and maintains that Marx did not deny that real wages will rise under capitalism.[1]

[1] Op. cit., vol. 1, pp. 179–183.

On a straightforward reading of the texts, especially the *Communist Manifesto*, this seems to be a distortion of the plain meaning of words. 'You have nothing to lose but the prospect of a suburban home and a motor car' would not have been much of a slogan.

The contention that what Marx really meant was that the *relative* share of wages in the product of industry would fall is backed up by the quotation of a few figures which show a declining share. In this field the figures are notoriously ambiguous because of the difficulties of definition; a case can be made, by judicious selection, as easily one way as the other. But that is beside the point. The point is that if Marx really meant that he expected the rate of exploitation to rise somewhat, but by much less than productivity, so that there would be a marked rise in the level of real wages, he could have said so. To twist what he said to fit the supposed facts destroys his status as a scientist, without doing much to support his credit as a prophet.

III

But the reason why the assertion of the *Textbook*, that Marxism is a scientific ideology, does not hold water is not because of any defects in Marx's theories. It would be easy to argue that the Marxian system of ideas (though not unexceptionable) is less unscientific than any other brand of sociology or political economy that has yet been offered. The difficulty does not lie in what is taught but in how it is learned. Ideology demands acceptance. Science demands doubt. A particular proposition may occur in both, but its mode of operation is different in the two contexts.

Many years ago a committee of theologians was set up to pronounce upon doctrines of the Anglican church. They decided that belief in the virgin birth was optional. But one of them, a high dignitary, felt obliged to append a note stating that, *as a Bishop*, he thought it right to state that he did believe in it. Is this not analogous to the statement by a writer on economics that, *as a Marxist*, he believes in the labour theory of value?

It is perfectly legitimate to have schools of thought in a developing subject. A school of thought is distinguished by its method, not by its tenets. Science itself, in a certain sense, is based on faith—on a confident belief that all phenomena will yield to

investigation and will turn out to fit into a scheme of natural law. But this faith expresses itself in a programme of work, not in a body of settled conclusions. Professor Popper seems to fall into just the kind of dogmatism that he so admirably exposes in other fields when he denies that history can be scientific.[1] He may turn out to be right. The well-tried method of controlled experiment is not available, and perhaps no adequate substitute will ever be found. In history every important event happens only once and alters all that comes after. Perhaps we can never hope to collect enough examples of any kind of phenomenon to generalize about them. But let us try. Let us see how far we can get. Postulate that history plays itself out through the interaction between the technical conditions of production and the forms in which society is organized, and see how much our postulate explains.

Marx, as a scientist, proclaimed this grand programme, and made an impressive start upon it. But it got very little further. A school of thought flourishes when the followers continuously revise and sift the ideas of the founder, test his hypotheses, correct his errors, reconcile contradictions in his conclusions, and adapt his method to deal with fresh matter. It takes a great genius to set a new subject going; the disciples must admire, even reverence, the master, but they should not defer to him. On the contrary, they must be his closest critics.

Marxism did not develop so. Within the socialist movement, it was too soon embalmed. Revision came to mean the search for slogans to justify a change of policy. Only the highest political authorities could pronounce on matters of doctrine, and even they had to be careful to express new thoughts in old forms.

Nor did Marxism benefit from criticism from without. The association with dangerous thoughts frightened off the 'bourgeois' intellectuals, and allowed smart-alec debating points to pass as a sufficient refutation of his ideas. Nowadays in the U.S. even to think about the questions that Marx raised is suspect and a great deal of mental energy goes into finding safe, trivial theorems to elaborate.

It was inevitable that Marxism should develop as a closed doctrine, not a growing science. But now the loss begins to be realized. In a settled society, when the heroic age is over, science is more useful than faith. But a switchover is not at all easy.

[1] *The Poverty of Historicism.*

The case of the Bishop is instructive. It would be beside the point to believe in the now optional doctrine in the sense in which one believes in scientifically established facts. If a virgin birth happened, it would be one of those things that happen, subject to biological inquiry. It would lose all spiritual significance. He must have meant that he believed in the doctrine, not in the fact. He felt obliged to say so, not for any personal reason; his personal position was perfectly secure, with no fear of Stalinist or McCathyist persecution. Most likely he felt that for a Bishop to withdraw belief from a point mentioned in the Creed would be an offence to many worthy, simple souls and damaging to the cause to which his life had been devoted.

This dilemma (as well as the habit of caution formed during the period of persecution) is hard to escape in the socialist world. The natural sciences, it seems, have been pretty well freed, but political economy is a delicate matter.

Not long ago, I was teasing a good-natured professor behind the ex-iron curtain. I attacked various points at which it seems to me that Marx's analysis is defective, and he defended them with the stock arguments. At last I said: Do you regard Marx as a superman, or, though a great genius, as a human being?—Of course he was human.—Then he could make mistakes?—Yes. Would you mind mentioning a mistake that he made?—The professor did not actually wink, but he changed the subject.

There is one great advantage, however, of a faith based on scriptures. Each new generation can read for themselves, and rejecting the filtered waters of official teaching, drink from the original source. The Reformation came from reading the Bible. Emancipation will come from the application of the method of Marxian analysis to Marxist ideology.

The process has begun; but it is much impeded by the Cold War. The silly, twisted, and poisonous interpretation of developments in the socialist world that emanates not only from the press, but also from academic quarters, in the so-called free world, give ever-renewed support to the anti-liberal element within the Communist movement. Moreover, the young intellectual, patriotic though critical, is disinclined to speak up when what he says will be taken down and used in evidence against his country. It is we who are largely to blame for smothering him. Perhaps even this essay of mine will do more harm than good.

WHAT REMAINS OF MARXISM?

First of all, what does not remain? In my view the most important point in which the Marxist system of ideas has failed to stand the test of experience is the concept of stages of history which every society must pass through—primitive communism, slavery, feudalism, merchant capitalism, competitive industrial capitalism, monopoly capitalism, and finally socialism.

A number of minor holes have been knocked by historians in the earlier part of this scheme, but history itself has (as I read the contemporary scene) disproved the last step. Socialism has not emerged out of advanced capitalism, but has turned up in societies at stages far back in the Marxian series, while capitalism continues to flourish side by side with the new economies.

At first it was possible to explain this away on the ground that 'it is the weakest link in the chain that breaks', or to regard the Russian Revolution as an accidental by-product of the 1914 war. Schumpeter took this view: 'It must be remembered that the bolshevik conquest of rule over the most backward of all the great nations was nothing but a fluke.'[1] Nowadays such a position hardly seems tenable and it is much more natural to say that there is a clear connection between backwardness and socialism.

For the nations which were left by the industrial development of the nineteenth century as hewers of wood and drawers of water for the prosperous West, it now appears that the quickest way to catch up on the technical achievements of the capitalist economies is not by following the same path, but rather through the short cut of planned development.

The essence of development lies in investment (in education no less than in physical equipment) and investment in an initially poor economy requires, first, that whatever surplus above the mere needs of subsistence is available should be devoted to capital formation, and second, that as the surplus grows, very little should be allowed to be consumed in a rising standard of living, and as

[1] *Capitalism, Socialism and Democracy*, first published in 1942, but probably conceived much earlier.

A Contribution to a Symposium, 1957.

much as possible pushed into accelerating the rate of accumulation.

It is obvious that this process meets much less resistance after a revolution than in a society which preserves the property rights of its feudal past. The initial surplus consists largely of land rent, and the expropriation of landlords puts it at the disposal of the national development plan. Moreover, the absence of unearned income makes it possible to keep the workers hard at it, with little reward but 'sweat and tears', until the back of the task has been broken and it becomes possible to allow them some television sets as well; whereas when property income is still being enjoyed, to offer the worker sweat and tears appears as mere hypocrisy.

However much the excesses of Stalinism have tarnished the idealist appeal of socialism, its practical achievements cannot be denied, but they do not seem to me to fit into the Marxist theory on which they are supposed to be based.

What about the other side of the story—the belief that in 1848 capitalism was already near its end and that its own internal development would shortly lead to its supersession by the next stage?

There are two broad strands of thought in the Marxist system, only loosely connected, offering alternative explanations of the collapse of capitalism. The first is the prediction that the level of real wages of industrial workers will remain more or less constant—or, if anything, decline—as industry develops, so that the share of profit in proceeds grows greater and greater. At the same time the number of individual capitalists will be continually falling as the competitive struggle amongst them leads to ever greater concentration in industry. Meanwhile, the workers, coming together in the discipline which factory production imposes upon them, will organize themselves, and (provided by Marx himself with the requisite philosophy and the requisite programme) will sooner or later find the situation ripe to throw out the capitalists and install a socialist system.

The second line of thought is less clear and dramatic. It is that the ever growing accumulation of capital will lead to such a fall in the rate of profit on capital that the system will cease to function, and the new system will grow out of the collapse and disintegration of the old one.

Looking at it by and large, things have turned out otherwise. The organization of the workers, instead of overthrowing capitalism, has been the means of keeping it going. Through trade-union and political action, the labour movement in the most flourishing capitalist nations has secured for the workers not a constant level, but a constant share of wages in the proceeds of industry. A constant share in a rising total, combined with a limitation of population growth, means a rising standard of living, something which takes the revolutionary spirit out of the labour movement. The spokesmen for the workers, far from accepting Marx's philosophy, become as bitterly hostile to it as the capitalists themselves.

In one sense the concentration of capital is going on as Marx foresaw it, but at the same time developments both in productive and in financial techniques have led to a great diffusion of middle class property and professions. The number of families sharing in the overhead of industry, one way or another, has grown with the mass of capital accumulated, and social mobility has increased through some channels faster than it has declined through others.

The growth of working class and middle class income not only provides the system with political support, it also provides an ever growing market for goods and falsifies the prediction that capitalism, if it escapes revolution, must necessarily fall into stagnation.

Where does this leave us? It leaves us, I feel, without any particular beliefs about the future. In one sense, this is a loss. The Marxist hypothesis was a good starting point for argument whether to attack or defend. Without it, we do not even have anything to deny. (The academic economists, it must be confessed, have never done much to supply the lack except to extrapolate the current situation. In the great slump we were obsessed by the 'stagnation thesis' and now we are busy with models of perpetual expansion.) But in another sense it is a great gain. It means that we must take the idea of 'peaceful co-existence of different economic systems' seriously and look out upon a world which is full of new and exciting possibilities.

So much for what has gone, but the question we were asked is 'what remains?'

Marxism as a creed has played and is playing a very great role in history. Like other creeds, it calls forth heroic devotion in its

followers and permits them hideous crimes. But that is a different matter. Here we are to discuss Marxism as a contribution to thought.

In the mass of accepted ideas today there is a great deal that was contributed by Marx, in particular, the economic interpretation of history. The rigid theory of stages of development has proved too simple, but no one nowadays would look at any historical problem, ancient or modern, without considering the economic organization of the society in question, the interplay of class interests, and the influence upon political events of technological developments. Moreover the notion of an ideology—an orthodoxy prevalent in a particular society not because of its truth but because of its convenience for the dominant authorities—is as much a commonplace in our views of society as the comparable notion of a rationalization is in individual psychology.

In this sense we are all Marxists now. Many people, of course, object to the economic interpretation of history as being too materialistic—as leaving out the moral and spiritual element in human nature. It can also be criticized for not being materialistic enough—as leaving out the influence of geography in history and the influence of climate on human character. (How does it account for the striking difference between the development of South and North America?) It can be criticized as pseudo-scientific—imposing a formula on accidental circumstances. (How would it account for the development of a planned economy in North Korea and whatever-it-is in South Korea?) But in spite of all objections raised against it, there is no doubt that Marx's approach to history has had a profound influence on the whole complex of modern ideas.

The trouble is that the Marxists, like many other philosophers, have turned a method into a doctrine. Take the analogy of behaviourism. It was a good idea to propose as a method of investigating psychology not to appeal to subjective consciousness and to see how much of behaviour could be explained purely in terms of conditioned reflexes. But it was not a good idea to deny that subjective consciousness has any meaning. To show that a trained rat reacts in the same way to a red light and a shrill whistle is not to prove that sight and hearing are the same thing.

Similarly the economic interpretation of history is a fruitful method. Postulate that history can be understood in no other

terms, that it is only the interaction between the forces of production (technical conditions) and the relations of production (the distribution of property rights and power within society) and see how far we get. But do not be committed in advance to finding nothing that will not fit.

It is legitimate and useful to have schools of thought in the same sense as schools of painting—groups or successions of writers who have in common a certain method of attack, a certain approach to problems, and a certain selection of problems which they consider important, but it is not legitimate to have schools of beliefs. As soon as a method is transformed into a dogma it withers at the root.

So far we have been discussing Marx's philosophy in a broad sense. What about his specifically economic theory?

I well remember my surprise, when I began to read *Capital*, to find that Marx was a great economist in the same tradition in which I had grown up (for my teachers, through Marshall, trace their descent, like Marx, from Ricardo). My Marxist colleagues had not prepared me for this discovery. To them Marx dwelt on some higher plane, so that, as Schumpeter says, 'it would have seemed almost blasphemy to them to give too much prominence to this aspect of his work'. While the others had never recognized 'that in some parts of his work he did precisely the kind of thing which they valued so highly when presented by other hands'.[1] Indeed they had given me to understand that the whole thing was a hopeless rigmarole.

There is a terrible lot of stuff, it is true, that 'a vulgar empirical English' mind like mine finds very unrewarding, but there is also quite plainly set out a simplified 'economic model' which Marx uses to analyse distribution in a static state, capital accumulation, technical progress, the trade cycle, and all the rest of it. His main difference from the orthodox texts is that the questions treated are much more interesting, for Marx plunges straight into the flood of dynamic theory, where Marshall hardly dared get his feet wet.

So far as the theory of crises is concerned it seems to me that Marx had seen most of what was to be the Keynes theory, but never saw it quite clearly because he failed to keep a grip upon

[1] Op. cit., p. 21.

the distinction between the short-run and the long-run effects of investment.

In his analysis of capital accumulation in the long-run, he mapped out territory which Keynes hardly entered. This terrain, especially in connection with the underdevelopment problem, is now the main field of interest in economic theory, and the contemptuous attitude of the academics to Marx is rapidly dissolving (somewhat to the regret of the professed Marxists, I think—they would rather have their grievance). Even a writer with so very little sympathy for Marxism as Professor Arthur Lewis finds it quite natural to start with the Marxian model when he wants to discuss 'Economic Development with Unlimited Supplies of Labour'.[1] Marx's apparatus is clumsy, but the general layout of his analysis in terms of the ratio of wages to profits, the ratio of labour to capital, and the relation of capital accumulation to the growth of the labour force is precisely what is required for the kind of problem that is now being opened up by the academics.

One of his devices—brilliant in its simplicity—that has proved very useful is the treatment of the economic process in terms of the interchange among sectors of the economy. This provides the most secure grip on the whole savings-and-investment complex, and much elaborated, it has provided the basis for actual planning techniques in the U.S.S.R. and for the input-output analysis developed with such effect in the United States.

Perhaps it is not particularly useful at this time to go through all the labour of sorting out Marx's answers, but it would be ungracious not to admit that the academics could have saved themselves a lot of time if they had begun to work on his questions sooner.

To bring Marx's system to bear on the analysis of real data, the concepts must be reduced to 'operational' terms.

Is Marx's *value* a usable concept? Gross national product of any period (in a closed system, neglecting scarce natural resources) in terms of *value* is the number of man-hours, reckoned in terms of a standard unit of *abstract labour*, plus an allowance for pre-existing products consumed during the period (stocks and wear and tear of plant), valued in terms of the labour-time required to replace them. The latter procedure involves all the well-known difficulties about the meaning of a stock of capital.

[1] *Manchester School*, May 1954.

For any particular portion of output the labour-time required to produce it is not a manageable concept, for in the ramifications of a modern industrial economy, everyone is more or less directly involved in everything. We can therefore proceed only by dividing sales proceeds by the average money-value of total output per head.

None of this seems to be particularly useful, and the short cuts which it purports to provide past the philosophical problems of measuring heterogeneous products turn out to be will o' the wisps. Moreover, it is indispensable in any case to supplement measurement in terms of *value* with some measure of physical output. Otherwise, when the labour force employed and the length of the working day are constant, we can only say that output in terms of *value* is constant, no matter whether the flow of goods and services produced is rising rapidly (say, with technical progress) or falling (say, with erosion of the stock of capital).

The problem of choosing the standard unit of 'abstract labour' comes to the same thing as the problem (a very teasing one) of finding an index of wage rates, or Keynes' 'wage unit'.

For a theory of the prices of particular commodities we must start off with Marx's 'prices of production', not value. Money prices, for Marx, under competitive conditions, normally, in the long-run, are governed by wages-cost plus interest on the capital involved at the rate given by the average rate of profit on the total capital in the economy. This represents the standard level around which market prices fluctuate under the influence of demand or which monopoly distorts by extracting more than the average rate of profit.

On this basis the movement of the general money-price level through time must depend upon the relation of money-wage rates to output per man hour.

All this is common ground between Marx and Keynes. The ideas of Walras, Wicksell, and Marshall can be equally clarified and brought in to enrich the mixture with 'scarce factors', the 'production function', 'imperfect competition', and all the familiar complications, without altering the main effect.

'The organic composition of capital' is very awkward to handle because of its failure to distinguish between the wages bill per unit of time and the wages fund locked up at any moment in the value of work in progress. It also fails to provide a term for the stock

of capital, but it can be taken to correspond to the ratio of capital to labour. This concept has its own difficulties, but valiant efforts have been made to give it an operational meaning and actually to trace the ratio in modern capitalist economies. As far as investigations have gone, it seems that the ratio is rather constant or, in the most recent period, slightly falling. If so, Marx's theory of the falling rate of profit must have ceased to apply to advanced capitalist economies even if it was true at earlier stages of capitalist development.

The rate of exploitation (surplus value over wages bill), which forms the heart of Marx's system, is the easiest to measure, in a rough way, and we know quite a lot about the share of wages in the product of industry. Marx is rather inclined to treat the whole surplus as identical with the fund for investment. He does not pay much attention to consumption out of profits, which has been the main target of attack by non-Marxian socialists. His emphasis, no doubt, was right, but his system requires some concept of a 'propensity to consume' to make it complete.

When technical development and the rate of accumulation are such as to keep the ratio of capital to labour fairly constant (capital being reckoned in terms of wage units) while the balance of forces in the labour market keeps the rate of exploitation fairly constant, the share of wages as a whole in the ever rising national income of a progressive capitalist economy remains more or less constant. Provided that the labour force is not increasing as fast as national income, real wages per head are rising.

This is the possibility which Marx failed to allow for, and which, as I argued above, accounts for the continued existence of capitalist economies today.

The above applies to Marx's concepts as they can be used in the analysis of a market economy. It is interesting to inquire how they appear in a planned economy. The technical elements, such as the ratio of capital to labour, remain the same, but wages and labour time take on a different character. There is no particular connection between the cost to society of a quantity of labour time applied to a particular use (a cost which has a meaning only in terms of alternatives foregone) and the payment which represents a distribution to the workers concerned of their share (on whatever principles it has been fixed) of the total product of

the economy. This is a point of great importance on which there is a good deal of confusion in current controversies.

The rate of exploitation can be expressed in terms of the relation between the value of goods produced for sale to the public (that is, to workers) and the outlay on social services, defence and administration, and investment which absorbs the surplus. The distinction between taxation and profits disappears, and the surplus ceases to be coextensive with exploitation, in the ordinary sense of the word, to the extent that the public benefits directly from government outlay. The basic concepts are the same, but they have to be translated with care when different types of economies are to be compared.

A discussion like this is not at all congenial to the professed Marxist. For him there is a sort of inner significance in *value*, *abstract labour*, *constant and variable capital* (just as for Marshall in *real cost* and *utility*) that evaporates when they are reduced to operational definitions. Moreover, as soon as he loses his familiar terminology, he cannot be sure that he is not losing some essential item in the creed. And as long as the cold war goes on, the creed is far more important than economic analysis. The anti-Marxist is equally terrified of the dangerous thoughts that may be smuggled into his head by innocent looking ratios.

The hope of any sort of reasonable discussion of these questions depends on genuinely accepting peaceful coexistence in the world. And so does the hope of anything else, if you come to think of it.

HAS CAPITALISM CHANGED?

This question, posed by Professor Tsuru to a symposium of economists,[1] implies that we knew quite well what capitalism was formerly like. We know, certainly, that it was capable of producing the 1930s. But it was also capable of producing long runs of rapid growth, interrupted by only minor recessions. Ever since the eighteenth century, the industrial revolution has been going off like an irregular string of firecrackers. Taking a long view, we might consider growth to be the most characteristic feature of capitalism. It would be possible to describe the spectacular development now going on in Japan and Germany as a steep climb to make up the arrears of war and defeat; France and North Italy may be seen as catching up on arrears of relatively slow industrialization over a century or more. The present relatively sluggish growth of the United States and Great Britain can be seen as a plateau reached by the leaders in a climb.

More narrowly stated, the question posed for discussion is whether a major depression can occur again.

Certainly the world has changed, in our lifetime, in two relevant respects. The thirties did happen, and some lessons were drawn from that experience. What Keynes called the 'humbug of finance' is extremely tenacious of life (especially in the United States), but it can never be quite what it was. In principle, the doctrine that governments have a responsibility for avoiding slumps is now orthodox. This might prove a broken reed if it were not for the second change—the emergence of a powerful socialist bloc which is itself immune from depressions.

This proves to have a stabilizing effect on capitalism in three ways. First, the extent of fluctuations is limited by the very fact that part of the trading world is excluded from them. This does not operate to any great extent through direct exports from capitalist to socialist countries (though these are quite important

[1] *Has Capitalism Changed?* Edited by Shigeto Tsuru. Contributors: John Strachey, Paul Sweezy, C. O. Bettelheim, Y. A. Kronroad, Maurice Dobb, Paul Baran, J. K. Galbraith. Iwanami Shoten, Tokyo 1961.

Monthly Review (New York), October 1961.

for particular industries). It works, and may be expected to do so increasingly, through the support which sales to the socialist world give to the incomes of primary producers, mitigating the vicious spiral of declining trade that follows from a fall in imports from them, with a consequent fall of their power to purchase.

Second, the capitalist world feels itself to be on trial, and the governments which have pledged themselves to maintaining economic stability have been given a powerful motive for trying to keep their word.

Finally, rivalry itself promotes expenditure. The cold war provides an excuse for expenditure on arms—the least harmless way of keeping up employment by 'digging holes in the ground' but the one most acceptable to orthodox opinion. Fortunately, this is not the only form in which rivalry manifests itself. Aid to underdeveloped countries (even if, as Paul Baran argues, most of it goes down the drain in corruption and luxury) is a better way of consuming the surplus. There can be little doubt that more aid is inspired by rivalry with the socialist world than would ever have come from pure benevolence.

The influence of the socialist sector of the world on the capitalist sector is not much stressed in this volume, and most of the contributors are sceptical of the possibility of maintaining employment by government action. All the same, they do not seem to have made out a case that *depression* will come again. There is a general haziness in the whole argument as to whether it is concerned with a slump or with long-run stagnation. Current American experience seems to be that slumps are very mild. The trouble is that booms are mild also. Each recovery leaves a larger gap between actual and potential output than the one before.

Tsuru regards the rapid rate of technological progress now being experienced as a helpful factor. Here there is a missing link in his argument, which Paul Sweezy picks up. Tsuru, thinking in terms of Keynes and Schumpeter, regards inventions as opening up new profitable investment opportunities and so providing the offset to saving necessary to fend off depression. As Sweezy points out, this misreads the situation. Technical progress is not an occasional 'random shock' that sets investment going but a continuous built-in propensity in the modern industrial system. 'The big corporations have enormous sums of money

accruing to them in the form of depreciation quotas which are naturally available for investment in the latest machines and processes. Under these circumstances, it is obvious that a high but carefully regulated rate of technological innovation is compatible with a low or even zero rate of *net* investment and hence with a chronically depressed economy' (p. 84). Tsuru has put technical progress in on the wrong side of the account. To keep the economy at stretch, output must rise in the proportion that output per man is rising, on top of the proportion in which the labour force is growing. With less technical progress, employment would be easier to maintain.

The other possibility of alleviation that is proposed for discussion is a greater equality in the distribution of income, which (in Keynesian language) might make up for a flagging inducement to invest by a rising propensity to consume. Professor Bettelheim stoutly denies that consuming power can rise even in proportion to productivity (this seems to arise from the usual confusion between a constant rate of exploitation and a constant level of real wages). Professor Galbraith appeals to his theory of countervailing power and Mr. Strachey to the softening effect of democracy upon capitalism. These arguments are good enough to show (as against Bettelheim) that the share of wages need not fall as output per head rises. But to be efficacious, it is not enough for the rise in consumption per head to keep up with the rise in productivity. It has also to rise sufficiently to take over the slack from any reduction in net investment per head.

Merely to maintain effective demand for labour, the demand for commodities has to increase in proportion to output per head. This requires that the overall level of money wage rates should rise, or that prices should be cut. In ideal competitive conditions (such as never existed outside the elementary textbooks), prices fall (relatively to money incomes) when surplus capacity appears, and so stimulate demand till capacity outputs can be sold. Competition was never so perfect, even in 'the good old days', and certainly under the modern regime of administered prices there is no reason to expect profit margins to be cut in the manner that the textbook case requires. Nor can the trade unions erode margins from below by raising money-wage rates, since there is no better excuse than a rise in wage rates for putting prices up

(an excuse often used to raise prices more than proportionately, so that margins actually rise and purchasing power is curtailed).

Moreover, the very progressiveness of taxation, which is the pride of democracy and the vehicle of countervailing power, works against expansion. The great oligopolistic firms, with proper prudence from their own point of view, fix margins which give a 'break-even point' at considerably below capacity—that is, full costs including standard profit are covered by sales when a large margin of productive capacity is idle. An upswing in demand then causes a huge shift to profit, for all proceeds above the break-even point are pure gain. The taxes which the profits attract have to be withheld from distribution by the firms before they are spent by the government. The upswing therefore comes to rest, and it may do so well before capacity is reached. The firms then see no advantage in building up capacity further. It seems as though the built-in stabilizers designed to keep fluctuations within bounds have been only too successful. They work in such a way as more or less to stabilize total output. Meanwhile, technical progress goes on raising output per head, and the man-power required to produce a given output goes on falling.

The problem has slipped out of the framework of Keynesian analysis. It might have been better to pose the question the other way round. Instead of asking whether capitalism has changed for the better, in the sense that it has become immune to short-run depressions, one could ask whether capitalism has changed for the worse, in the sense that it has become incapable of long-run growth.

It would be easy to make a case for an affirmative answer to the latter question. Nineteenth-century capitalism was an expanding system in the literal sense. It did not have to keep itself suspended by the bootstraps of its inner dynamism; it had its feet planted on new lands to be peopled, full of natural wealth to be exploited. There is much force in Rosa Luxemburg's prediction that when capitalism can no longer expand geographically it will not know what to do with itself.

Moreover, for private enterprise the main problem is not to produce, but to sell. Old-style capitalism had a ready-made market. The world was not naked before mills were built in Lancashire. The mill products could undersell the handloom weavers and take the market from them. And they had the

handloom weavers of the whole world to ruin before they began to meet competition from their own kind. Even now the spectacular increases of production in Japan and Germany are not all (as we in Britain know only too well) a net addition to the production of the world. Perhaps from the first, capitalism has been sawing off the bough that it was sitting on and all that has really changed is that we have begun to notice how deep the saw has gone.

There is another aspect to the ever-growing productivity of industry that is germane to the discussion. Productivity grows on a narrow front—in physical goods that lend themselves to mass production. Even if incomes grew with productivity, consumers could not be found for the output; they want to spend their growing purchasing power on other things. (Galbraith would have done better to draw upon his *Affluent Society* for a contribution to this volume rather than from his earlier and more soothing work.) This very fact to some extent relieves the situation that it creates. Regular industry cannot find markets to keep output rising as fast as output per head, but the redundant workers can largely find a livelihood in providing services to meet the purchasing power deflected from industry. It seems as though, over the very long run, capitalism reverses the process with which it began, of taking the market from craftsmen and petty traders and absorbing their families into its labour force. Now it is spewing them out again and at the same time creating a market in which they can flourish. The robots of automated industry are eroding the labour force, and small-scale traders and self-employed professionals are proliferating to take its place. Engels' joke about England developing a bourgeois working class is coming true in earnest in the United States.

The argument has slipped out of the Marxist framework also. Capitalism has 'ripened the productive power of social labour' with a vengeance, but what has happened to the proletariat that was to take it over?

Meanwhile socialism has come into being just in those countries that missed the capitalist bus. The tough, disagreeable aspects of socialism, which have so much weakened its idealistic appeal, are due precisely to this fact. Instead of expropriating the expropriators and settling down to civilized ease, the revolutionary governments had to lay upon their people hard tasks and curb their disillusion by bitter means.

It seems that neither the Keynesian nor the Marxian prognosis of the future of capitalism is being fulfilled and we are left without any particular theory as to what will happen next.

The contributors to this volume discuss, with varying degrees of optimism, the prospects of a peaceful transition to socialism within the capitalist countries.

The notion that a new Great Depression is soon to come and that some kind of socialism will emerge from the struggle to fend it off, smacks somewhat of wishful thinking. The slow drift into stagnation that appears to be taking place does not come to a dramatic crisis that calls forth dramatic remedies.

One thing seems fairly clear—private enterprise has ceased to be the form of organization best suited to take advantage of modern technology. Planning of investment to give automated production the long runs that it needs; a high priority for education to raise up a generation which can develop its potentialities; equality of opportunity, to waste no scrap of talent worth training; an adequate distribution of purchasing power to consume the product; increasing leisure to turn redundancy of labour into an advantage—these are what the new technology demands and what socialists economies can supply. There is certainly one way in which capitalism has changed—it is no longer clearly the most effective type of economic system ever known.

In England, we have learned to realize that we are no longer running the world. Given peace and freed from the burden of armaments (for we have no need just yet to dig any holes), it is easy to imagine us muddling through in some kind of semi-planned welfare state—not socialism but capitalism without its claws. Tsuru suggests that something of the kind might be possible also in Japan. But what about the United States? Just at the moment, public opinion in America seems to be taking up the attitude of the wrong mother in the judgment of Solomon—rather blow the world up than allow someone else to lead it.

Until that mood passes, there is nothing else worth discussing, but when it does (I will not write if) a new chapter will begin, and there seems no very clear indication to make it obvious that capitalism will not have a long future as the second best economic system in the world.

A RECONSIDERATION OF THE THEORY OF VALUE

THE question of the determination of the relative prices of commodities in conditions of perfect competition is one of the most technical and formalistic departments of economics, yet it has always been impregnated with ideological passion because of its association with the theory of value—the contention that *value* is created by labour alone, hotly opposed by the contention that capital also deserves part of the credit.

To Adam Smith it appeared obvious that in 'that original state of affairs' when the worker had 'neither master nor landlord to share with him' commodities exchanged at prices which corresponded to the relative amounts of labour time required to produce them.

Ricardo set out to find the laws which regulate the distribution of the produce of the earth between 'the proprietor of the land, the owner of the stock or capital necessary for its cultivation, and the labourers by whose industry it is cultivated'. (He was particularly concerned to show that landlord's rent is an incubus on society, but that aspect of the problem does not concern us here.) In order to discuss the distribution of the product of industry, Ricardo had first to find a unit in which to measure it. Labour-time was the obvious unit to take, but then he came up against a puzzle. In competitive conditions, the rate of profit on capital must be the same in all lines of production. Different products require different proportions of capital to labour, for technical reasons; thus there must be different proportions of capital to labour for different outputs; thus there must be different shares of profit, for different products, in net output (that is, in value added—gross proceeds minus the replacement cost of raw materials and depreciation of equipment). A difference in the rate of profit then entails a different pattern of relative prices—those products with a high capital/labour ratio falling in price when the overall rate of profit falls and those with a low ratio rising. Thus it appears that a change in distribution changes that

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which is to be distributed. Ricardo was struggling with this puzzle to his dying day.

Marx took over the notion that the prices of products are proportional to the labour-time required to produce them and read into it a new and striking interpretation—all products exchange at their *values* and this is true also of labour-power itself—for labour-power is 'produced' by the labour-time required to provide the subsistence of the worker. Since output exceeds the wage, labour produces more *value* than it receives. Thus the theory of *exploitation* was derived from the theory of value.

The orthodox economists revered Ricardo, but this interpretation of his analysis went very much against their grain. They were at pains to argue that Ricardo's puzzle about the unit of measurement implied that he really meant to allow that capital, as well as labour, creates *value*. But they had a much better way of evading Marx; instead of changing the answer to the problem of relative prices, they changed the question. In the 1870s a new wave flowed over economics—the theory of supply and demand. This kind of analysis can be applied (when treated with due caution) to the prices of the products derived from resources that are given by nature—primary commodities, for instance. This very example shows that, in a changing world, the operation of supply and demand in free markets is very far from producing harmonious results. The argument therefore had to be confined to a stationary state, in which both resources and tastes are given once and for all. Then a pattern of prices exists at which the amount of each commodity that sellers are willing to sell equals the amount that buyers are willing to buy. The orthodox economists to this very day are still elaborating this scheme of analysis with fresh refinements.

Meanwhile the Marxians were having troubles of their own. Marx had dealt with the problem of an equal rate of profit in the prices of products with different capital/labour ratios by saying that the rate of exploitation (that is, the ratio of net profit to wages) together with the value of net output per head, determines the total net profit in the economy as a whole, while competition sees to it that this total is shared out amongst the capitalists in proportion to their respective amounts of capital. But how exactly are the prices of products related to the rate of exploitation? The rate of exploitation refers to the distribution of *net* income

between wages and profits, but prices include an allowance for the replacement of raw materials and the use of equipment, whose prices in turn contain an element of profit. This is the famous question of 'the transformation of value into prices'. It is obvious enough that it is not a problem about reality but a puzzle in analysis, which appears to be a problem only because ideology has got mixed up with algebra; it is a puzzle, however, that up till now was never satisfactorily solved.

Sraffa's *Production of Commodities by Means of Commodities* returns to the main line of classical theory. He tackles the problem of gross and net income by distinguishing between basic commodities which enter, directly or indirectly, into the production of all commodities, including themselves, and non-basics, which require basics to produce them but are not required to produce basics. (Steel is required to produce steel and dinner knives, but dinner knives are not required to produce steel.) Then he constructs a standard unit consisting of an imaginary composite commodity in which each basic is included in the same proportion in the input as in the output. He shows that with the aid of this unit it is possible to distinguish the total excess of output over input independently of the pattern of prices. The value of net income in these terms is independent of the rate of profit, for, if we compare a higher with a lower rate of profit, the elements in the standard commodity which have a more than average ratio of capital to labour, whose relative prices are higher, is exactly matched by elements whose relative prices are lower. Thus it is possible to discuss the division between wages and profits of the value of net income without upsetting the value to be divided. Ricardo's puzzle is solved.

Sraffa works over many well-known problems to show that his analysis can deal with them—rent of land, the choice of technique, joint products, the true depreciation of fixed plant, the meaning of 'labour embodied' in capital goods, and so forth.

Once we are satisfied that it is all on the level, we can take a short cut, though Sraffa himself would scruple to do so. Postulate a given money wage per man hour of ordinary labour. Then corresponding to each rate of profit there is a level of prices in money terms, and a pattern of prices such that receipts from the sale of each product cover its due share of the wage bill for the labour, *plus* the rate of profit on the value of capital goods

directly and indirectly required to produce it. Values can then be expressed in terms of labour-time.

This clears up the 'transformation' puzzle by showing how the rate of exploitation is related to the rate of profit on capital, and working out the pattern of prices accordingly.

At the same time, Sraffa cuts the ground from under the feet of the orthodox analysis. First, supply and demand has nothing to bite on. The composition of output may be influenced by the distribution of net income between workers and capitalists (for instance, more investment goods when the share of profit is high) but prices, in given technical conditions, are determined solely by the rate of profit. Second, the contention that the rate of profit is caused by, or is a measure of, the productivity of capital is seen to be meaningless, for with given technical conditions (which include the productivity of machines of particular specifications when operated by a particular labour force) we have to know the level of prices to know the value of capital, and we have to know the rate of profit to know the level of prices.

But all this is purely formalistic. It tells us nothing about what *determines* the rate of exploitation or the rate of profit. On this Sraffa offers no observations except the rather mysterious remark that the rate of profit is 'susceptible of being determined from outside the system of production, in paticular by the level of the money rates of interest'.[1] He is content to lay the foundations for his critique and then to leave us to our own devices.

Is there anything in Marx's contention that the rate of exploitation is an independent datum, and that the rate of profit is derived from it? If so far as relative prices are concerned this seems to be back-foremost. The capitalists, under pressure of competition, establish profit margins which yield a uniform rate of profit on capital, and an appropriate share of profit for each product; the prices are determined by the way the system works; the *values* are abstract theoretical calculations.

But this does not weaken the Marxian theory of exploitation. It was merely an aberration to mix up the analysis of relative prices with the problem of exploitation; all the ideological heat that it has generated was equally vain on both sides. The important question is what determines distribution between wages and profits in the economy as a whole.

[1] Op. cit., p. 53.

Is there some mechanism in the system that establishes the rate of profit so that, in given technical conditions, the real-wage rate emerges as a residual, or is there some mechanism that determines the behaviour of real wages, so that the rate of profit emerges as a residual?

One meaning that might be given to the idea that the rate of interest governs the rate of profit is that lenders require a certain return on their money. Firms then have to fix prices so that they can earn sufficient profit to cover the interest bill, and, since they all need this profit, competition will not prevent them from getting it.

But this is a very flimsy construction. As capitalism develops there is technical progress in providing credit just as much as in producing goods; there has been a strong secular fall in the rate of interest that the average borrower has to pay relatively to the gilt-edged rate on the safest possible kind of bond. There is no evidence of a corresponding fall in the overall rate of profit. Moreover, for both the original Protestant capitalist who stinted his wife of housekeeping money and the modern manager who stints his share-holders of dividends, to plough back profits into the business, the supply of finance is largely independent of the market for credit.

It is true that there have been times when development has been held up ('crucified on a cross of gold') by the failure of credit to expand fast enough, but then a high interest rate is causing slumpy conditions, and making profits lower.

According to another interpretation, interest is the reward of saving. If there were no saving there would be no accumulation, therefore the rate of profit has to be high enough to cover the rate of interest that savers demand. This was spoilt by Keynes' argument that the amount of saving is mainly a function of the level of income and its distribution. In any given situation, with given productive capacity in existence, a higher rate of investment brings about both a higher level of total gross income (through a higher level of employment of labour and utilization of plant) and a higher share of gross profit in gross income (by pushing up prices relatively to money-wage rates). Thus, within reason, investment generates the saving that it requires.

This appears all the more strikingly when we transpose it into long-period terms. The total net profit of an economy, for,

say, a year (assuming the government budget to be balanced) is equal to the net investment of that year *plus* the excess of sales of consumption goods over the wage and salary bill. To simplify the argument, let us suppose that there is no net saving out of earned income (though individual families may save and dissave to spread their consumption conveniently through time) so that all saving is out of profits.

Let s be the proportion of profits saved, P the annual profit, and I the annual net investment.

Then $sP = I$

Let C be the value of the total stock of capital.

Then $$\frac{P}{C} = \frac{I}{C} \cdot \frac{1}{s}$$

The ratio of net investment to stock of capital (I/C) is the growth rate of the economy, g. Thus the rate of profit is g/s. The rate of profit is the rate of growth divided by the proportion of saving out of profits. The smaller the proportion of saving and the faster the rate of growth, the higher the rate of profit.

This might suggest that the rate of profit on capital is determined by the behaviour of the system, so that the rate of exploitation is merely a passive resultant of it. But this is not necessarily the case. If the capitalists and managers retain as much profit as they need for investment and allow their wives and shareholders to spend the rest, then the share of profit, rather than the rate of profit, is the prime determinant.

Let us see how this may be. Capitalism insinuates itself into an artisan economy by means of some innovation in organization or technique which enables an employer to raise output per head of workers over that of artisans. While the artisan sector is still predominant, the wage rate that an employer must offer cannot be less than the earnings of an artisan (there is 'a moral and historical element' in the level of wages depending on the 'habits and degree of comfort in which the class of free labourers has been formed'), while the level of prices at which he sells is set by the artisan products. The share of gross profits in the value of output is fixed by the ratio of the value of output per man employed to the wage. The rate of profit then depends upon the value of capital per man, which depends upon the technical characteristics

of the method of production that is being introduced. With this share of profit, the capitalist can now expand his business as fast as he likes, taking the market from the artisans by underselling them and employing their children as workers. His wife's habits of consumption are formed by the amount of profit that he allows her to spend. In this situation, clearly, the rate of exploitation governs the rate of profit, not *vice versa*.

Let us pursue the story. Further innovations are being made by the capitalists and output per man employed is rising. If the population is increasing faster than employment, or the supply of ruined artisans is large enough, there is no need to raise wages. Gross profit per man employed is rising. The capitalists can both increase their rate of accumulation and allow consumption out of profits to rise. If they do not do so to a sufficient extent, the potential profits will not be 'realized', as Marx put it, for lack of effective demand. Provided that they do so, the rate of exoloitation rises as time goes by. This is something like the picture in Volume I of *Capital*.

In a successful modern capitalist economy, however, where the population has almost ceased to grow, Trade Unions are strong, and competition between capitalists prevents prices from rising faster than costs, the rate of exploitation tends to be more or less constant through time. The real wage per worker is growing as output per head rises. Any attempt to increase either the rate of accumulation or the proportion of profits consumed, without reducing the other, would bring about a violent inflation as the Trade Unions push up money-wage rates in an attempt to maintain their share. At the same time, it is next to impossible for the Trade Unions to increase the share of wages. When a certain rate of profit has come to be regarded as 'normal' it is embodied in appropriate profit margins—the 'full-cost' determination of prices. The Trade Unions cannot operate directly on real-wage rates; they can influence only money wages When money-wage rates are raised, the customary margins are added to the raised costs; prices are raised more or less in proportion to wage rates, so that the attempt to raise real wages is frustrated.

This explains how the rate of exploitation in any one country is kept constant but it does not explain why its level varies from one country to another. If we take a glance at the statistics, we find a

low share of wages (corresponding to a high rate of exploitation) in manufacturing industry in countries like Costa Rica (less than 20 per cent) Turkey (30 per cent), Japan (40 per cent) and a relatively high share in Australia, Finland and U.K. (58 per cent) and only slightly less in the U.S.A. (55 per cent).[1] The figures are beset with all kinds of conceptual and statistical difficulties, but differences as wide as this must be significant. They certainly suggest that the rate of exploitation depends far more upon the bargaining power of the workers than upon the rate of profit and the capital/labour ratio.

The highest rates of exploitation are seen in more or less colonial situations, where the greater part of profits is transmitted abroad so that the realization problem does not arise. In a wealthy country which must find the bulk of its markets at home, it may be a serious embarrassment. When the number of capitalist families is growing less fast than the total of capital, so that, even with a constant rate of profit, unearned income per family is growing, then it is quite a struggle for Madison Avenue to keep the ratio of consumption to profits constant. If on top of this the potential rate of profit were rising because of a rising rate of exploitation, an under-consumptionist slump would be liable to occur, and the profits would not be realized. It is one of the paradoxes of the system that Trade Unions contribute to the prosperity of the capitalists by keeping the rate of exploitation in check, so that rising real wages offer an expanding market for them to sell in.

There is another paradox the other way round. In a country where the capitalists are both frugal and energetic, the labour movement gains from meekly accepting a high rate of exploitation. Accumulation goes on rapidly; productivity rises relatively to money-wage rates, which gives this group of capitalists a competitive advantage over others so that exports are easy to sell. Provided that the rate of exploitation, though high, is not rising through time, real-wage rates are shooting up, and this group of workers is doing far better than others who are struggling for their rights.

At the same time, where consumption of profits (partly disguised as salaries and expense accounts) is considerable, it is

[1] *Patterns of Industrial Growth* 1938–58. United Nations Department of Economic and Social Affairs, 1960. The figures apply to 1953; they may have changed slightly since then.

somewhat sophistical to appeal to the Trade Unions to exercise enlightened self-interest and refrain from wage demands that can only cause inflation, restrict investment and damage exports; for with the same investment, real wages would be higher if consumption of unearned income were less. Here there is no support for the new-fangled notion that property does not matter as long as investment can be controlled.

All this seems to justify Marx's conception that the rate of exploitation is a more fundamental relationship than the rate of profit on capital. But these large speculations are not in Sraffa's line. The function of pure logic is to liberate us from nonsense, not to tell us what we ought to believe.

PART IV

INDIA, 1955: UNEMPLOYMENT AND PLANNING

The final version of the second five year plan contains considerably more discussion of the problem of employment than the draft outline, but there is still something mysterious about it. The authors write: 'It would be incorrect to hold out the hope that full employment could be secured by the end of the second plan' (p. 112), but they do not reveal the underlying argument which would enable us to form an opinion about why this should be so.

Let us begin by inquiring what is the object of increasing employment. This may seem a silly question, for everyone knows that unemployment is a bad thing. But there are a number of aspects of employment, and the emphasis that is placed on these various aspects may provide a clue to the bases of policy.

First of all, modern governments have accepted the responsibility for seeing that their citizens are employed. Unemployment is a reproach to them. From this point of view providing employment is a sort of wearisome necessity, like providing for defence, and failure to ensure it is excused by pointing to the magnitude and difficulty of the task. This is the kind of tone that used to be adopted by Conservative governments in Great Britain before the war, and is the obverse of the self-congratulation of Conservative governments since, at the reproach having disappeared. Secondly, where the social structure of an economy makes unemployment pay impossible, employment is an excuse for distributing purchasing power to those in need. This was the basis of public works as a vehicle for 'poor relief' as we knew it in the nineteenth century. Thirdly, employment is a concomitant of profit. Generally speaking, when the level of employment is rising, in a private enterprise economy, the volume of profit is rising (though the converse need not be true). The production which yields profit gives employment, and expenditure of wages helps to provide the market which makes production profitable. From this point of view profit is the objective and employment a

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Capital (Calcutta), Annual Supplement, December 1956.

by-product. Fourthly, employment is desirable for the sake of the output produced, and incidentally for the training and improvement of economic morale that goes with productive work.

Clearly it is from this last-mentioned point of view that the planners are looking at the matter, though occasionally a turn of phrase half suggests that they have relapsed into the first or second, while the third is dominant in a great deal of the discussion that goes on around the plan.

Employment for the sake of production must be divided into a number of categories: production of basic necessities—food, cloth, household goods; production of goods and services for the small part of the population that lives at a fairly comfortable standard; and production of capital goods which add to the real wealth of the economy. The latter must be subdivided again into those which provide directly for consumption—in particular housing; those which provide for an increase in productive capacity for consumption goods—say, irrigation works, looms and pottery kilns; and those which contribute to productive capacity for capital goods—say iron and steel mills. In each category investment in human capital is no less important than investment in equipment. An addition, say, to the stock of doctors contributes directly to consumption; an addition to the stock of skilled operatives, engineers, managers and community project workers, contributes to productive capacity at one remove; and an increase in the stock of those qualified to train them contributes at a second remove.

Some kinds of investment, say in power and transport facilities and in school teachers, contribute at all three layers. Production of exports may also be regarded as contributing to all categories, as the imports that they pay for may be chosen to contribute to necessities, luxuries, or to first-remove capital goods or to second-remove capital goods, each in material or in human form.

Now, the plan has to make two inter-connected decisions: the total amount of production to be aimed at and its division between the categories. The main emphasis is on enlarging capacity of the capital-good producing sector. This is partly because this type of investment lends itself to large publicly-financed projects and is, therefore, the sphere over which the plan has most direct control. It is also because the philosophy of the plan is based on the conception that this investment is the most necessary for the

development of the Indian economy. For a long time to come India will need investment. The plan gives (somewhat gingerly) its blessing to the family-planning campaign, but at best the population of India will go on growing rapidly for a considerable time, and growth of population without a corresponding growth in the means of production spells ever-increasing misery. Even when the population ultimately becomes stabilized (as is devoutly to be hoped) investment will continue to be necessary. If India preserves her ancient wisdom, preferring leisure to material goods, and avoids being sucked into the universal game of keeping up with the Joneses which preoccupies the western nations (including the socialist ones) driving the attainment of an 'adequate' standard of life for ever into the future as the horizon recedes from a traveller, she can look forward to a time when the urge to increase production will slacken. But that time must be far distant, for, even on the most unworldly standards, her level of consumption (including health and education) is intolerably low.

Investment therefore will be desirable for a long time, and the foundation must be laid for producing investment goods. Some help can be had from foreign loans, and to some extent exports (to be used to pay for imported equipment) are a substitute for home capacity to produce equipment. But foreign assistance cannot be enough, export markets are unreliable, and the most hopeful line for exports in the long-run is capital goods (steel, machinery) for other developing countries. There is therefore a very strong case for the policy of devoting a large part of the plan to basic industry.

Investments in iron and steel, transport and power have generally to be made in large lumps and the gestation period before any useful product emerges is long. Meanwhile, the output of consumption goods has to be increased. Workers employed on the schemes require a certain real wage. In so far as they are part of the increase in population, their place as juveniles is taken by a new generation at least as large as their own, and the whole of their consumption out of wages is an addition to demand. In so far as they have been drawn from the ranks of the unemployed (open or disguised) they were consuming something already, and the whole wage bill is not an addition to demand. The wage, however, must exceed the consumption of the unemployed, both because more calories are needed by a man in

work and because there must be some inducement to make effort worth while. Moreover the newly employed worker was being supported by his relations, and it is neither desirable nor possible to prevent his family from eating up at least a part of what they were formerly obliged to share with him.

Extra employment, therefore, requires extra consumption of wages. It is generally impossible to prevent some leakage into consumption of profits (say, of contractors) also taking place. There must therefore be an additional output of necessaries and luxuries to accompany increased investment activity if a sharp rise of prices is to be avoided. This additional output in turn involves more employment (or, in the case of agriculture, higher output per head) and so some further additional consumption. This phenomenon is similar to the 'multiplier' of Keynesian theory, but it is a multiplier with a difference. There is no doubt quite an appreciable amount of 'Keynesian' slack in the economy —extra output which only requires a good market to bring it into being, but the slack can provide for only a small part of the necessary increase in output. To get the required quantity there must be an increase in capacity in the consumer good sector, particularly agriculture. Therefore to support any large scheme of investment with a long gestation period there must be an appropriate amount of quick-yielding investment to get the consumption sector (including food production) into the posture to meet the demand that will fall upon it. Even the quickest-yielding investment takes some time, but within five years, presumably, the job can be done.

The method of setting out the plan in terms of global figures for the whole period makes it rather hard to grasp but the statement that 'the step-up in the development expenditure during the second plan period is not expected to be much larger than that achieved during the first plan period' (p. 119) may perhaps be taken to mean that in 1961 the rate of investment outlay is to exceed that of 1956 by about the same amount as that of 1956 exceeded that of 1951. Presumably the conception is that by then sufficient investment will have been made, one way and another, in the consumption sector to provide for the additional output required to support this rate of development without inflationary pressure of demand. This entails that there has been

a sufficient expansion of productive capacity to look after the increased consumption of the investment sector and the additional consumption of those who provide for the consumption of the investment sector. A surplus yielded by the consumption sector (an excess of the value of their output over their own consumption) must then be made available to provide the consumption of the investment sector. This is to be achieved partly by taxation and partly by saving, including the accumulation of cash in hoards and in the working balances requisite for the progressive monetization of the traditional rural economy.

Although there is not much discussion of how it is to come about, the authors of the plan, presumably, see their way to achieving this balance, but they do not see their way to achieving balance at a level which will occupy the whole available labour force. They reckon that to eliminate unemployment there should be 15 million new 'job opportunities' and that the plan will in fact offer eight million (pp. 113–15). Why should not the whole labour force be occupied? This is not a rhetorical question, but a genuine puzzle.

Perhaps the answer lies in the fear of inflation. The discussion of inflation is not to be found in the chapter on employment, but comes under the heading of finance. There it wanders off up the usual blind alley of 'deficit finance', which concerns only the question of how much cash the economy can absorb and throws little light upon (indeed obscures) the question of the balance of supply and demand for consumable goods. Inflation in Indian conditions is not to be dismissed as an unreal bogy. Far from it. The menace is very serious. Inflation means, in this context, a sharp rise in the prices of consumer goods, particularly food, which would cause unrest among urban workers and drive landless labourers in the countryside into intolerable conditions. If the threat of inflation hangs over the plan it must surely mean, not that the plan is too large, but that the balance is wrong. It must mean, above all, that insufficient attention has been given to raising agricultural output.

Behind this may lie two different notions. The first is the view that it is no use increasing food output, because that would not lead to an increase in the marketable surplus. The extra product would all be eaten up in the villages. Squeezing the surplus out of an under-nourished peasantry is certainly a daunting prospect.

This is the issue over which the socialist economies now admit that they made their worst mistakes (a year or two will show whether China is going to provide an exception) and one must sadly agree that the operation may be still more difficult to carry through in a democracy. But it is very hard to accept the view that this is a reason for not raising agricultural output to the utmost possible. Even as a political solution the persistence of eight million of unemployment is not a very attractive prospect. Politically, a bit of inflation might well be the lesser evil.

A more fundamentally pessimistic view is that the amount of attention given to agriculture in the plan is the most that would yield a return—that the technically feasible limit to output is in sight and no more can be done. Experience of the first five year plan (helped out by a run of good monsoons) was the reverse. In 1955 the generation of a food surplus had run ahead of the generation of incomes to buy it, and food prices were actually falling. It is now admitted that it was an error to allow this to occur. In future the proposal is to take advantage of any excess of supply over demand to build up a stockpile of grain. So far as market gardening and dairy products are concerned, there does not seem to be any danger of excess supplies for a long time to come. There is no need to fear over-doing it. Surely, a major objective of the plan should be to press to the limit of food production and find where that limit really lies?

If the upper limit, which it is feasible to reach in five years, is already in sight, ought not more attention to be given to the possibilities of tapping the American surplus? These are mere speculations 'to start you talking'. Perhaps this is all on quite the wrong track; but if so we ought to be told. If it is not fear of the unemployed eating too much when they are given work that prevents full employment from being the objective, there must be some other hidden snag which the planners are trying to steer past, and it would surely be best to find out what it is and seek for means to root it out.

II

An interesting addition to the new version of the plan is a discussion of the question of the choice of technique in relation to employment (p. 122 *et seq.*). The authors rightly draw a sharp

distinction between the basic investments in the investment sector and the development of the consumption sector. They point out that in the case of heavy industry there is little scope for choice, and the method to be adopted is dictated purely by technological facts. In the case of irrigation works and the like there is a choice between more and less mechanized methods of work—bulldozers *versus* men. This involves balancing expenditure of foreign exchange against the problems of assembling and redeploying armies of workers on one side after another and the problems of providing for their consumption. This is a subject of very great importance, which should be discussed in concrete terms, project by project. It is to be hoped that experience from current projects is being garnered and analysed, so that future decisions can be taken in the light of the fullest possible information.

So far as the consumer-good sector is concerned, the debate is already raging. It is unfortunately clouded by a conflict of ideology between the supporters of organized capitalist industry and the supporters of Gandhi's ideals, and on both sides there is generally a good deal of special pleading. The economics of the problem, in the narrow sense, cannot settle the issue, for, in this kind of question, the means are more important than the ends. The end is a contribution to long-run national development, but the means are everyone's daily life. It is worth while, however, to try to get the narrowly economic issues clearly set out.

Superior versus Inferior Techniques.—The arguments start off on the wrong foot when it is stated in terms of 'giving employment'. High employment per unit of output is the same thing as low output per man hour, and low productivity is clearly not a merit in itself. Ideology apart, it is absurd to favour techniques which give the minimum output per man. The point is to find the techniques which give the maximum output per unit of investment.

The argument is obscured by a verbal confusion between 'superior' and 'more mechanized' techniques. One technique is superior to another if it yields a higher output per unit of capital investment and requires less labour to operate. The advocates of the *ambar charkha* have hard work to prove that it is not inferior, in this sense, to a modern spinning mill, and one cannot but suspect that its merits are purely ideological. If so, new investment in this method has to be justified on extra-economic grounds.

The case is not so clear when the inferior equipment is already in existence. Bullock transport may well be inferior, in the above sense, to lorry transport, but since lorries in present conditions are displacing bullocks, an investment in them can be credited only with the additional service provided, not with the whole service per unit of investment. On this basis the superiority of the lorries may well turn out to be illusory. In such a case the correct policy is to permit investment in the superior technique only to the extent that is required for additional production, leaving the inferior equipment to continue in use.

More Mechanized versus Less Mechanized Techniques.—One technique is more mechanized than another (though not necessarily superior to it) when it requires more capital per unit of output, and less labour. When labour is available and investible resources scarce, a low degree of mechanization is indicated, even for additional output.

To some extent this works itself out through the normal price mechanism of a private enterprise economy. Low wages in terms of product make a low degree of mechanization profitable on ordinary business principles. But looking at the matter from the point of view of the national economy it is not profit, but product, that is the criterion. The business man is looking at the excess of the expected value of output over current costs when he decides upon an investment. But if the workers whom he will employ would be unemployed if the investment were not made, the investment should be credited with the wages which it will enable him to pay, as well as with the profit that it will earn. There is therefore a strong presumption that, where private enterprise is operating in an under-employed economy, the profit motive will lead to an undesirably high degree of mechanization being adopted. Trained economists often find this point hard to grasp, because they are used to working out theoretical problems under the assumption of full employment.

It is generally assumed (though the matter needs more investigation) that in weaving, and in many other lines, the techniques available to cottage industry are not inferior to factory industry and that (with some help in organization, finance and marketing) investment in them can yield a higher rate of output per unit of capital (though, of course, a much smaller output per man-hour) than in the case of regular factory industry.

It is this view which justifies the present policy of restricting investment in organized industry and fostering small-scale production in the village. Against this it is often argued that, by economizing labour per unit of output, organized (more mechanized) industry is economizing wages, therefore economizing consumption and yielding a larger future investible surplus per unit of initial investment. This argument, when it is frankly stated, is hard-headed, not to say brutal. It means that the 'abstinence' which corresponds to the saving out of profits which is made available for investment has to be borne by those who, under this policy, are left in unemployment and who, on the alternative policy, would be eating the wages. It is sometimes justified by appeal to the extreme hard-headedness of socialist policy, which enforces abstinence for the sake of accumulation. This argument has been weakened by the workers of Poznan, who demonstrated how hard-headedness may over-reach itself. But in any case the socialist economies never planned for unemployment, so that the analogy with the Indian case does not hold.

Restraining new investment in mechanized equipment may be justified, but it is hard to see any rational basis for restraining production from existing plant. The correct policy, surely, is to allow the demand generated by the plan to carry existing plants to full capacity. Excess of demand over full-capacity output would raise prices to the point where cottage industry could compete and meet the excess demand. An excise on factory production is then fully justified (with a rebate for goods exported). By this means the super-profits of a seller's market can be syphoned off and become available to finance public investment under the plan. Indeed, ideally, the excise should be set so high as, first, to force the maximem possible output into the export market, and, second, to keep gross profits from the home market down to the level which will only just suffice to maintain capacity. But this is a degree of hard-headedness the other way round which is too much to expect in present conditions.

It is partly a matter of timing. To limit output from existing plant may be necessary for a time as a kind of 'infant industry' protection for the cottage production, until it has got organized. It might also be possible to make out a case for actual disinvestment in organized industry in the long run, for the sake of the social benefits of getting industry scattered over the countryside,

but the second plan period is surely too soon to begin indulging in this kind of extravagance. For the time being, surely, existing capacity should be used to the hilt.

Output per Acre versus Output per Man.—In agriculture the distinction between investments that are profitable and those which are desirable from the national point of view is even more important than it is in manufactures. From the point of view of a farmer who employs labour outside his own family, it may well be highly profitable to invest in labour-saving equipment that adds little or nothing to total output. Investment in agriculture, at this stage, should be directed to raising output per acre and to increasing the cultivable area. Purely labour-saving investment is of no use, except in those districts where there is a genuine shortage of hands at the peak periods of the crop cycle.

As it stands at present there appears to be a deep-seated contradiction in the conception of the plan. On the one hand, strong emphasis is laid on the importance of building up capital-good industries, and on the other hand conditions of surplus labour, which indicate restraint upon the installation of the capital equipment which those industries can produce, is expected to persist. The relevant question to ask is: How many quinquennia are to pass before full employment is reached and how soon will equipment begin to be produced? By the time the basic industries are ready to produce machinery, will the surplus of labour have been digested, so that the time will be ripe to begin mechanizing industry and agriculture in earnest?

This may sound somewhat carping. After all, the framing of the plan has been a heroic effort, and it may seem ungenerous to ask for more with never a word of sympathy and gratitude. But if the planners are worth their salt they must prefer criticism, provided that it is not obscurantist, to idle compliments, and the best service that critics can do is to force into the open the hidden assumptions of the plan, so that they can be attacked and defended in the light of day.

CHINA, 1963: THE COMMUNES

The heady enthusiasm of the Great Leap Forward in China has given way to a mood of sober satisfaction at having come through. The leap itself created some difficulties, though great achievements remain solid. Too many projects were started at once in 1958; there was too much in the pipe line and not enough coming out; labour was drawn out of agriculture into industry, and in the countryside too much went into the drive for steel, which over-strained the transport system and took time from cultivation.

In the normal way, all this would have been corrected and balance soon restored; but '59, '60 and '61 were bitter years. 'Natural disasters' are endemic in China, but those three years saw a concentration of drought in the North, floods in the South, and typhoons in the East to beat the records of a century. Much of the irrigation work carried out in the Great Leap was frustrated. The Yellow River was reduced to a trickle that motor cars could drive through. The great reservoir behind the Three Gates dam had not had time to fill up and was useless to combat the drought.

In the midst of all this, in July 1960, came the fantastic episode of the withdrawal of the Soviet technicians (who took with them the blue-prints of half-finished projects) and the cancellation of contracts for equipment. (At the same time the Soviet Government exacted repayment of the Korean-war loan, on top of commercial repayments which were being fully honoured.) The technicians (who were given three days to quit) were bewildered and dismayed. Some who expected to stay for two years had been only a few weeks in the country. Their Chinese colleagues saw them off with farewell dinners, and the Russians parted from them, often with tears. Chinese technicians have cracked some of the problems since, but many plants are still idle and shells of factories empty. Nothing was said officially about this affair; it was too shaming for the Communist cause, and too shocking for the public at large, though city dwellers saw it with their own eyes. Now that it is brought into the open in

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the course of bitter mutual recriminations with the Soviets, many people will dismiss it as a fabrication.

Through all this the government kept its head and the people kept their nerve. No one starved. This was an experience much more completely unprecedented than the natural disasters. The stricken areas were supplied. In the cities rations were tight, but they were always honoured. There was no inflation, and apparently, scarcely any black market.

Foreigners who lived through those years pay tribute (enthusiastic or grudging according to their point of view) to the high morale and good conduct of the public. But morale alone will not check inflation in a time of scarcity, and nor can the police. The secret, it seems, lay in sensible policy and incorruptible administration. The staples—grain, vegetable oil and cotton cloth—are dealt in exclusively by government agents. This makes it next to impossible for a black market to develop in those commodities, when the public is backing up the administration, for no unauthorized person dares to be seen moving them. For these commodities there were specific rations. Other things were on coupons, on a point system covering everything from eggs to bicycles. The prices of the three staples were held constant. (They have been substantially constant ever since the currency stabilization in 1950.) The official prices of luxury goods and consumer durables were set very high, to mop up purchasing power. (An overcoat of foreign cloth still costs £60.) In the free market, which is permitted on the fringes of the state trading system, some off-coupon items could be had at free-market prices. (Though it seems that even in this sector there was some check on profiteering.)

In the cities, the winter of 1960–61 was the worst. Grain rations were barely enough. Extras were hard to come by. Tobacco was diluted. People grew haggard and shabby. Party members, to set a good example, gave up eating meat, and would not accept invitations from their pampered foreign colleagues. By the summer of '61 rations began to be increased (by way of supplements for various categories of consumers) and points and prices for one thing or another began to be reduced. Now the grain ration is more than ample. Nearly everything except meat is off coupons. The cotton ration is very tight, but substitutes can be had. The street crowds have bonny faces again and neat

clothes. With the summer flush, there is a positive glut of vegetables and fruit; in many cities the free-market price has fallen below the official price, itself reduced.

In easing the country through this narrow strait, the Communes played an important role.

I

This method of organizing agriculture was not thought out in advance; it was evolved by a gradual process, though all the stages were run through at vertiginous speed.

During the civil war, when the Communists took over a district, they merely freed the bondsmen and reduced rent and interest. (This is the stage that Tibet is now at, apart from confiscated rebel estates.) After the creation of the People's Republic in 1949, the land reform was set going; by 1952 it had covered the whole country except for some of the National Minority areas.

The land reform was preceded, in every village, by an analysis of the land/labour ratio of each family. Landlords did little or no work and drew their income from rent, usury and other exactions. Rich peasants worked but had more than enough land in their family's labour force. Middle peasants neither hired labour nor worked for others; this class was divided into an upper section, not too badly off and a lower, on the brink of misery. Poor peasants were obliged to work for others and lived in misery indeed. At the land reform, the rich and middle peasants became free-holders of what they had; the landlords' houses and fields were confiscated and distributed, so much per head, amongst the landless families, including their own. The holdings so created were tiny; no basis for efficient agriculture.

The process of collectivization started very gently. A network of Supply and Marketing Co-operatives assisted the peasants in trade with cities. Mutual-aid teams were encouraged—first just a group of families helping each other at the harvest, then all-the-year-round teams; then 'lower form co-operatives' in which families pooled land and beasts to work together, drawing a share of the proceeds both for the property and for the work put in. A few 'higher-form co-operatives', in which distribution was only for work, were formed early, but very few. I remember (it seems ironic now) discussing the position in 1953 with a Russian expert

who was wagging his head over the Chinese, wondering when they are going to make a serious start on collectivization. At first the doctrine prevailed that there is no point in enlarging the scale of agriculture until it can be mechanized. Experience and reflection, however, showed that, in Chinese conditions, just the reverse is true. Without mechanization, the only hope of progress lay in mobilizing labour in large units. The 'high tide of socialism' carried almost the whole countryside into higher-form co-operatives in 1956. Watching developments and analysing experience, it seems that the authorities formed the view that the co-operatives were too large for good management, and they began to be reorganized in that sense. But during the Great Leap in 1958 a group of co-operatives in Honan decided to work together on some irrigation schemes too large to be tackled individually. The idea seemed reasonable. After the usual debate, the Party adopted it, and communes spread like wild fire over the whole country.

Battered, sifted and reorganized in the bad years, they have emerged as a stable framework within which it is intended to let agriculture evolve for a long run of years.

II

The organization, as it now exists, is in three tiers, the Commune, the Brigade and the Team.

The team is the unit in which day-to-day work is organized. It commands 'the four fixed', that is productive resources that cannot be alienated; the labour force, the animals, the farm implements, carts and so forth (tools are owned by individuals) and the land allotted to it for cultivation. The team consists of the workers from thirty or forty neighbour families, usually cultivating the very land that they have always worked. Generally speaking, there are not supposed to be more than ten teams in a brigade, but this, like all such rules, is subject to exceptions in special cases.

There are usually several teams in a village. Where the villages are large, the brigade coincides with a village. In hilly areas with small villages and hamlets, a dozen or more may be in a single brigade. To the peasants, the village is the real, human, historical unit—the stem on to which the new system is grafted.

The brigade is the primary unit for planning the crop programme. Each year it sketches out the next year's plan, in consultation with its teams. The draft plan is sent up, through the commune, to the county authorities, who return it with amendments. After some to and fro, a detailed plan is submitted and comes back to the brigade as a binding agreement. ('Two ups and two downs.') The brigade then allocates work to the teams.

The commune comprises a dozen or two of brigades. There are between sixty and seventy thousand communes, covering the whole country, apart from Minority areas which are at a less advanced stage of organization. A commune may cover anything from one to fifty thousand acres, according to the nature of the terrain. It has taken over the functions of the smallest unit of the old district administration, concerned with such things as registration of births, deaths and marriages, civil disputes, and command of the local militia. (Police, law courts and recruitment to the army are under the county authorities.) The commune directorate, with a staff of ten to twenty members, is generally responsible for the external financial and commercial relations of its brigades, for assisting and co-ordinating brigade plans, for organizing schemes of investment and operating enterprises that require a larger scale than the old co-operatives, for running schools and hospitals, for entertainments, such as film projection teams, for analysing experience and spreading improved technique and for generally keeping the whole affair jollied along.

The establishment of the 'basic accounting unit' is an important matter. To this group accrues income in cash and kind to be distributed amongst its members. Thus, where there is a dispersion in earnings, for whatever reason, the wider is the group the more are the higher earnings diluted in the average. The smaller the group, the closer and the more visible is the connection between one's own effort and one's income; the more conspicuous would be slacking or malingering. It was a concession to realism from the Utopian conceptions of the Great Leap to make the team, rather than the whole co-operative, the accounting unit. This is now the commonest case. Here and there, however, brigades are established in the role. When the brigade is the accounting unit it controls the 'four fixed' but still allocates the land to teams as operational units. Sometimes there is one such brigade in a commune, while the rest have not yet got beyond the stage of

teams as basic units. In a few cases, amongst the prosperous, highly organized market gardens around Peking, the unit is the whole commune.

III

From another angle, the family is still the basic economic entity. Commonly three generations pool their earnings and share a house. (The horror-comic story, now being repeated in Russia, about 'dormitories' was fabricated from a mistaken translation of 'room' or more exactly 'dwelling unit'.) There must be a few families (not counting ex-landlords) in every neighbourhood who were formerly better off in terms of income, though not in terms of social security, insurance against disaster and educational opportunities. Every one has the legal right still to reclaim an equivalent of his own original land. During the bad years it was not unknown for individuals to insist on doing so. One of the duties of the Party members in the communes is to keep an eye open for signs of 'the spontaneous development of capitalism' and nip it in the bud. It is said that not only ex-landlords are apt to be idle or to attempt speculation (buying cheaper to sell dearer). Sometimes ex-poor peasants are the worst. But the offenders are a tiny handful, in well-run communes, not more than one or two in a team, and the rest keep them up to the mark. There must be some bad patches, of course. A small minority of communes, it is said, are not doing well at all, and there have been scandals. For this the blame is put on the Party workers, not on the peasants.

A private plot is allocated by the team or brigade for the use of a family according to the number of its members, property in the land being retained as part of the 'four fixed'. The plots are very small; there is a general rule that the area set aside for them must not exceed 5 or 7 per cent of the whole. A family of six may have one fifth, or sometimes one tenth, of an acre. Apart from their plots, many families have made small vegetable gardens in their courtyards, with vines or fruit trees. Most keep a few chickens; many are fattening a pig, or milking a goat[1] bred for them by the brigade. Where cotton is grown, members can have some to spin and weave for their own use. There is a

[1] Yes. They have taken to drinking milk.

co-operative organization for handicrafts, interpenetrating the communes, and the Supply and Marketing Co-operative, which runs shops in the villages and moves produce into town, can buy from individuals as well as from teams or brigades. Finally, periodic fairs are held, to which grandpa can be sent to sell a dozen eggs or a handful of tobacco leaves. Family production is important to the family but (in contrast to the situation in U.S.S.R.) it is reckoned to contribute less than 10 per cent to national supplies.

IV

The three-tiered frame-work of team, brigade and commune, is highly flexible. Dipping at random in three northern provinces we find a great variety of types.

In one the upper layers are still embryonic. The teams correspond to old lower-form co-operatives, and remain the centre of all economic activity, including the upkeep of elementary schools. The brigades are inserted merely for the sake of conforming to the national pattern, and the commune, apart from sharing with two others in a small irrigation scheme, functions merely in its capacity as the organ of local government. Here, apart from grain and fodder for man and beast, the whole cultivated area is under cotton, and the cash income of members is exceptionally high.

At another place, while the team is the accounting unit, the brigades and the commune are full of activity. The commune had organized a drainage scheme, requiring a canal of 20 kilometers. The cost was borne by teams according to the area benefited, and labour supplied in proportion to the labour force of each. The commune had brought in the high-voltage cable to electrify the villages, the brigades being responsible for the distribution cables. Most of the houses have light; the commune pays the monthly bill and divides it between households at so much per lamp. The commune operates a manufacturing and repair shop for tools, complete with miniature iron foundry. It breeds draft animals to supply to teams, as well as pigs. The brigades sell piglets to be reared by households. Brigades operate smaller-scale enterprises, such as a brick kiln. They grind the members' grain for a small fee, and sell noodles. There is a hospital and three clinics. The teachers for the secondary school are paid by the

government, while the brigades provide the primary schools, with a subsidy. (Everywhere nowadays it is claimed that all children of primary-school age are going to school; a good proportion attend secondary schools, and many communes boast of members who are away at college.)

In another commune there is one large brigade that is the centre of life (the other brigades are smaller and less developed). Here a higher-form co-operative was set up earlier than most, and since it was satisfactorily established, it carried on as before in the new setting. In such a case, the main task of the commune is to nurse the other teams up to the same standard.

Further examples conform more or less to one or the other of these three types.

V

Receiving visitors has its own ritual. When we picked on a commune that had never had a visit before, they hastily boned up from the county offices on proper procedure.

The commune office is sometimes in a new building in the old style (mud bricks and unglazed tiles), sometimes a room in an ex-landlord's compound or the court of a temple. (The gods are much out of fashion, but in some houses a little image in a niche in the wall is still being honoured with paper offerings.) The foreigners, with their escort of hardly less foreign city folk, sit round the large table; they are served tea, or more often hot water as a symbol of tea, and heaps of delicious fruits fresh from the trees. The spokesman is sometimes the director of the commune, sometimes a brigade leader or a Party secretary—an old peasant with beady eyes in his walnut-wrinkled face; a married woman, still handsome; an ex-school teacher with the indefinable cast of book education faintly showing in his countenance. No matter who, unflurried, easy courtesy prevails. We are a little off the beaten track: 'Do you often have foreign visitors?' 'Oh yes, last year there were some Koreans.'

The spokesman, with a little notebook, gives us the main figures—area, numbers, income per capita, yields per mou (they are strong on averages); then the horses, carts and pigs; the main investment schemes; the number of electrified pumps, grinders and chaff-cutters that have been installed. Questions are frankly

answered (including a little tease about 'the spontaneous development of capitalism'). There is no dodging for cover behind phrases (as sometimes happens in the city) about the leadership of the Party and the Three Red Banners. Figures do not mean much unless one knows exactly how they are calculated, but the variations in the pattern of organization and in the achievements claimed is very instructive.

After the introductory session we step out to see the dam, the pumps, the tool shop, the noodle makers; and visit some houses, where grandma is usually at home with the babies, and hurries to pour us more cups of hot water. Some families sleep four or five on one kang. Some enjoy a room each. The mud floor is perfectly clean. The high rafters keep us cooler than in the hotel rooms we have come from. The walls are pasted over with colour prints of scenes from operas or patriotic posters. There is the store of grain, and there is the bicycle.

After a few visits, the brigade leader takes us to his own house, where tables and stools are set out under the vine that shades his courtyard, ready for a delicious meal of noodles, vegetables and eggs. A little rest after lunch is the custom. At two we sally out again to see a school, the hospital, the orchards; then reassemble for the questions we forgot in the morning, and so goodbye.

VI

Taking the second example described above as the representative case, we can trace the flows of transactions involved in it.

The main income accrues to the team in the form of its crops. Of cash crops, such as cotton, practically the whole is handed over to the government buying station. The amount of grain to be sold is settled in the annual plan. Sales above the agreed quota are welcomed. A short-fall, in the ordinary way, will not occur, as the quota is calculated after allowing for costs (seed, fodder, etc.), and an adequate allowance for feeding the member families. The brunt of a deficiency falls on home consumption. But in case of a short-fall due to natural disasters, the quota is reduced or waived, without any obligation being carried forward. Vegetables and other subsidiary products are sold under contract between the team and the government purchasing agency or city co-operatives.

Thus the team has a certain annual gross income, the crops retained for home consumption being put into the account at the government purchase price. From this there are four deductions.

First, the agricultural tax. It is assessed on a notional normal output of each parcel of land. The tax, at 11–13 per cent of notional output, is sometimes as low as 4 per cent of actual output, where productivity has been rising. Slack production is penalized correspondingly by a higher tax ratio. An actual rate of tax as high as 14 per cent is said to be very rare. In case of natural disasters the tax is remitted.

The second deduction is for costs—seed, fertilizers, insecticides and so forth. Presumably repair of machinery comes under this head, as well as payments to a neighbouring state farm or tractor station for contract ploughing; notions of depreciation are somewhat vague, but in any case the distinction between depreciation and accumulation is not important so long as net accumulation is going on.

The third deduction is for accumulation. The accumulation fund belongs to the team, but its use for any large scheme has to be sanctioned by the Commune.

The fourth deduction is 1 or 2 per cent for the welfare fund, which is used to help out families without adequate earning power, provide for old people with no relatives, etc., and to contribute to the cost of schools and clinics.

These deductions normally amount to something like 40 per cent of gross income; 60 per cent remains to be distributed.

The famous scheme for 'free food', which caused so much stir when the first reports of the communes came out, was as follows: a ration of grain was calculated for a worker, a child, etc., and the quantity required to provide rations for all the families was deducted from the distributable income. Each individual drew his appropriate daily ration, to cook at home or eat in the communal dining room. The remainder of the distributable income was then allocated according to work performed.

This system was dropped in 1960. Now the whole distributable income is shared out at so much per labour day. The job-evaluation for various tasks is agreed by the team as a whole. Family earnings depend on work performed, with the exception of the hard cases looked after by the welfare fund. The communal

dining rooms have gone out of fashion and are now used only for convenience in the rush seasons. Advances of estimated earnings are paid out over the first three-quarters of the year, with a grand annual settlement after the harvest.

The staff of a brigade—the director, the deputy director, the accountant, the Party secretary and so forth—are team members elevated to these posts by election. They earn labour days like any one else, time spent in meetings and so forth being evaluated like any other job. The Brigade employs whole-time wage workers, for instance in a brick kiln, and sells the products to teams or families. It may amass an accumulation fund from the proceeds, or in some cases, it may make a levy on the accumulation fund of teams.

Three, sometimes more, of the commune staff are paid by the county, in respect of their local-government functions. The rest earn labour days with allowances (which must not exceed 2 per cent of a team's labour time) for their administrative work. The enterprises run by the commune are profitable, and the commune may also take a levy from the teams. The levies of brigade and commune together must not exceed 20 per cent of the teams' accumulation funds.

Adding transactions between the Supply and Marketing Co-operative and household, team, brigade and commune; transactions with the county authorities; and the minuscule trade of the families, there is a highly intricate network of payments and receipts. The commune is a microcosmic economy, comprising a major socialist and a minor private sector, with its budget, its balance of payments, and its planned allocation of resources between consumption, investment and liquid reserves. The price level in money terms is governed by the fixed purchase prices in its external trade. These determine the money value of labour time, and so all internal costs. The profit margins in commune enterprises are limited by the state selling prices for comparable goods and services.

The team is small enough to bring individualistic economic incentives into play. The commune is large enough to exhibit the visible benefits of collective organization. Economic incentives are not everything; the authorities are much concerned to keep morale high, but they are careful not to put any more weight on it than it can bear. For instance, during the bad years, in a district

that had not suffered and was enjoying relative plenty, sales of grain above quota were encouraged, but the quota itself was not raised.

VII

Of the physical, visible effects of collective work, the greatest is saving and creating land. In the crumbling loess zone for instance, along whole valleys the soil has been tethered to the hill-sides in neat 'fish-scale' terraces, with properly placed water-vents, besides pine groves and orchards (the oldest now beginning to bear) and drainage in the wet bottoms. This work is carried out, with the advice of experts from the local Agricultural College or Technique Popularization Station, by mutual help between brigades, each keeping the cultivable land created in its own territory as a permanent addition to its 'four fixed'. To the peasants, this is something for nothing; the idea is free and the labour time would only have leaked away in vacancy during the slack of the agricultural year.

In a way, perhaps, an even more striking tribute to the collective aspect of the micro-economy is the fact that the lanes in the villages are perfectly clean.

Under the individualistic aspect, the greatest benefit, of course, outweighing all else, is two good meals a day, with the comfortable feeling of stocks to fall back on as well. Besides this, every family has some kind of roof over its head (which very many poor peasants somehow lived without). There has been a lot of building, with local materials in traditional style. This is something for not very much more than nothing. Consumer durables are gradually trickling in. The brigade leader recounts with touching pride: Everyone now has thermos flasks and rubber boots; there is a bicycle in half the households; so and so many radio sets; so many sewing machines. His pride gathers up personal possessions into collective achievement, and makes them not purely individualistic after all.

VIII

The Chinese symbolism of Yin and Yang has absorbed the dialectical concept of the interpenetration of opposites. In the communes government interpenetrates the co-operatives; authority, democracy; planning, initiative.

'Under the leadership of Chairman Mao and the Communist Party' is not a mere slogan. Policy is formed at the centre and transmitted to the nerve-endings through the communes. But policy is not arbitrary, it is distilled from experience.

During 1959 the authorities woke up to the fact that the limit upon the development of industry is set by the marketed surplus from agriculture. It needed a strong intellectual effort to throw off the dogma, learned from the Russians, that the first law of socialist development is the permanent priority of heavy industry. After scrambling through the bad years, the new policy was formulated in 1962: Agriculture the foundation; industry the leading factor.

The proportion of state investment allotted to agriculture was stepped up; industrial investment was deflected towards the needs of agriculture—tractors, farm machinery, fertilizers; for scarce consumer goods the country is given an advantage over the town. In 1963, as things grow a little easier, the Party watchword is: It is not yet time to relax. The policy is to increase output and to draw off the surplus smoothly without having to turn the screw on the peasants.

From one side, the communes are the means of imposing government policy. From the other side, they are highly democratic.

Formal democracy, within the micro-economy, is represented by the election of the director of the commune, the brigade and team leaders and accountants. The representative council of the commune meets once a quarter and of the brigades once a month. The team calls a full meeting of all members when required by current problems. Women have an organization to deal with family affairs, apart from participating as workers in team, brigade and Party.

Formal democracy, however, is interpenetrated at each level by the Party organization, which owes its loyalty outside. What gives reality to democracy is the economic situation. The peasant commands his own food supply; daily wants can be met by traditional crafts; the radio and the bicycle could very well be postponed. The town needs the peasant far more than the peasant needs the town. The leading characters in every district are old guerrillas, and the young people are learning rifle-shooting in the militia. If the peasants once turned sulky, the commune leaders would be helpless. It is this, with the Russian example

before the eyes, that 'Chairman Mao and the Communist Party' must at all costs avoid. Direction from the top is controlled by good-will from below.

IX

What of the prospects? There is a complete statistical blackout in China at present, connected with the quarrel with the Soviets. One can only guess, from the behaviour of rations and prices, and from the impressionistic evidence of talks in communes, that the grain output is now well above the level of 1957 (the exaggerations of 1958 are tacitly passed over on both sides), that current consumption is adequate, but that stocks have to be built up.

There seems to be good ground to hope for a continuing rise in output over the current five-year plan (which has not yet been formulated) for a simple reason—hitherto, the use of artificial fertilizers has been at a low level. Now, with the extension of irrigation and of the education of the peasants, the country is ready to absorb artificials to the Japanese standard. Production has been held up because a vital component in the equipment is on the embargo list for the capitalist countries and has been withheld by the socialist countries. Chinese engineers have now mastered the technology and a number of large-scale plants are being set up. This, with other improvements such as better seed, means that there is a great potential rise in yields waiting to be realized. As yields on wet land rise, the poorest and most awkward dry land can be released from cultivation and put to forest. Thus output per man can be raised along with output per acre. At the same time empty lands in the North and West are being peopled. Once the agricultural surplus is secure, the rhythm of development in industry will pick up again.

But there is a heavy drag on progress—growing population. The statistical blackout covers demography, but we are allowed to know that overall numbers have not yet touched 700 million but soon will. Later marriages and birth control are being plugged. The situation seems to be about at the stage of England fifty years ago. Sophisticated people have two children, and the rest what God sends. A safe, foolproof and inoffensive contraceptive

would make a big difference. But even if the rate of increase were checked tomorrow, a formidable problem would remain.

The restoration of law and order, and an upward bound in hygiene, following long years of chaos and misery, brought a huge bulge in the population after 1949. In the next fifteen years there will be a formidable increase in the numbers requiring adult rations and needing to be supplied with means of production. Certainly it is not yet time to relax.

KOREA, 1964: ECONOMIC MIRACLE

I

Eleven years ago in Pyonygang there was not one stone standing upon another. (They reckon that one bomb, of a ton or more, was dropped per head of population.) Now a modern city of a million inhabitants spreads out on two sides of the wide river, with broad tree-lined streets of five-story blocks, public buildings, a stadium, theatres (one underground surviving from the war) and a super-de-luxe hotel. The industrial sector comprises a number of up-to-date textile mills and a textile machinery plant. The wide sweep of the river and little tree-clad hills preserved as parks provide agreeable vistas. There are some patches of small grey and white houses hastily built from rubble, but even there the lanes are clean, and light and water are laid on. A city without slums.

The traffic consists of trolley buses, trucks, and an occasional official motor-car; no carts or pedicabs; few bicycles. The only touch of Asia is the Korean woman in traditional dress, often with a baby strapped to her back. Even traditional dress, however, is mostly made from artificial fabrics.

The only other town I was able to see on my brief visit was Hamheung on the east coast, which was razed to the ground by naval artillery. It consists now of a series of blocks of flats for workers' families, well spaced and seeming more varied and better designed than those in Pyongyang (it was built later), with a fine new bridge and many parks. As this is a centre of the chemical industry, the factory area is at some distance, to avoid fumes. It is served by a narrow-gauge railway to take the workers to and fro. Other towns and cities have been recreated just as fast.

Even more remarkable are the neat villages, scattered over the countryside, of new cottages in traditional style, whitewashed

These notes are based on observation and conversations during a short visit to North Korea in October 1964, and on the Report of the Statistical Bureau of the Planning Committee on the fulfilment of the plan for 1963.

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walls and grey-tiled curved roofs. (They began by building blocks of flats for peasants but soon found that it did not answer.) Each has its school, nursery, and office buildings. Very few of the old mud huts with grass thatch survive, some being used as temporary quarters for the building teams. By the end of the Seven Year Plan there are to be none left even in the mountains. Already 70 per cent of the villages have electric light in the cottages.

Cut off from its rice bowl in the South, the North has built up its agriculture by irrigation and improved farming methods. It now produces 5 million tons of grain (58 per cent rice) which feeds the population of 12 million comfortably and permits a small export surplus. The annual output of piece-goods allows 20 metres a head—man, woman and child; there will soon be this much from vinylon alone, Korea's own artificial fibre. All miscellaneous consumer goods are home-produced—supplies are adequate but quality is to be improved. Agriculture which used to absorb 80 per cent of the labour force now accounts for less than half. There is already universal education, in town and country, from the ages of 7 to 14, soon to be extended to 16. There are numerous nursery schools and crèches, all without charge. There is a complete system of social security for workers and employees. Pensions are at the level of 50 per cent of wages, whether the recipient continues to earn or not. Peasant families in difficulties are looked after by their co-operative farm. The medical service is free. A nation without poverty.

All this is underpinned by an annual supply of 12 billion kwh of electric power, more than one million tons of steel, 14 million tons of coal, $2\frac{1}{2}$ million tons of cement, and a machine-building industry which is expanding manufacturing capacity to make it possible to plan an annual growth in industrial output of 18 per cent, including equipment for transport and mechanized agriculture.

II

All the economic miracles of the post-war world are put in the shade by these achievements. How could it be done?

It is true that North Korea did not start absolutely from scratch. The Japanese had built up mining and production of pig iron, wood pulp, and fertilizer. Heavy industry and technical education began to develop after 1945 and continued to some

extent during the war in underground shelters. Aid of $550 million from the socialist countries helped to give reconstruction a start. But this was little enough. The credit must go to well conceived economic strategy and to patriotic rage and devotion expressing itself in enthusiasm for hard work.

The first three years after the war were dedicated to reconstruction. In the Five Year Plan of 1957–61 the main emphasis was on heavy industry and electrification, following the Soviet formula; but at the same time there was enough development of housing, agriculture, and light industry based on small-scale local enterprises, to ensure a marked rise in the standard of living. The Seven Year Plan which followed broke with the Soviet formula. For the first three years, up to the end of 1964, chief attention was given to agriculture and light industry (while the expansion of heavy industry continued more slowly). Now, having satisfied themselves that everyone is adequately provided with food, clothing, shelter, medical care, and educational opportunities, the authorities will go all out for expansion of basic industries again. This strategy the Koreans found for themselves. In China the switch in policy came a year later, and was enforced by a run of bad harvests, which Korea was spared.

The method of plan control is similar to the Chinese. When the outline plan is given to an enterprise, it enters into contracts with receivers and suppliers—yarn to the weaver, cloth to the commercial department for the retail stores—with detailed specifications and delivery dates, sanctioned by fines. This avoids the endless troubles about the product mix and the fever of last moment plan-fulfilment, which have plagued Soviet industry.

Investment in iron and steel is useless without investment in education. The school system was rapidly built up, and 96 institutions of higher education were established where there were none before. At present, it is said, a quarter of the population is in full-time education of one kind or another (2 per cent of the whole in universities and technical institutes) and there are facilities for part-time study, at every level from primary to university entrance, in the schools and colleges attached to the enterprises and at county centres in rural areas. A pool of technicians and experts of more than 200,000 has been built up from nearly nothing, and will be doubled in the course of a few

years. With such hasty expansion one may question the standards. But the proof of the pudding is in the eating: the trucks are running, the electric pumps are irrigating the fields, the machine tools are being exported. Sport, music, and the arts are also fostered, all subordinated to one aim.

Workers are consulted by management when the Plan is being framed and encouraged to make suggestions about methods of work. Through this means, startling increases in productivity are achieved. A steel works with furnaces of a nominal capacity of 60 thousand tons was actually producing 40 thousand. The Prime Minister came for 'on-the-spot guidance' and told the workers that the nation needed 90 thousand tons from them. The workers and technicians decided that it was possible, and pledged themselves publicly to carry out the assignment. Actually they produced 120 thousand tons. This was brought about by a combination of technical improvements each small in itself—the furnaces were relined with better, and therefore thinner, refractory bricks, smelting was speeded up by using more oxygen, and so on.

The chemical fertilizer plant at Hamheung was exceptionally severely blitzed (was it a strictly military objective?). The workers returning after the war were bewildered and could not see where to begin. Once more it was the Prime Minister who came to the site and encouraged them to get going. The old skilled workers, students who had been sent abroad for training during the war, old professors—anyone who knew anything at all about chemical engineering—were called together and set up a study group to plan the reconstruction. Some production began after two years. The output is now 700,000 tons a year, in a modern automatic plant; a million tons are planned for 1967. A new process based on gassification of anthracite is being developed.

Nearby is the vinylon plant—the pride of Korean industry. A process for making fibre based on coal was invented by a Korean in Japan. Development there was delayed by the Pacific war. The inventor offered it to South Korea, but no one was interested. After some further vicissitudes he brought it to the North. There coal is precious but no end of limestone is available. He revised the process to use limestone as the base. The plant was put up in less than a year and began producing, without recourse to any foreign help or any foreign materials. Output is now 20,000 tons of yarn per annum, to be increased to 30,000.

In all enterprises there is an eight-hour day, with an hour's break for lunch; there is a six-hour day for heavy work and for occupations dangerous to health. Workers receive holidays with pay of fifteen days a year (a month for heavy and dangerous work), and there are rest homes for cases of ill health. The general manager of an enterprise is responsible for the housing estate in which the workers live, the nurseries and nursery school, and supplies to the shops, so that no one need worry about his home affairs and can concentrate everything on work and study. This kind of paternalism is disgusting when its object is more intelligent exploitation. It appears in quite a different light when it springs from a shared patriotism.

It seems that high productivity comes from enthusiasm rather than excessive toil. But married women carry a heavy load. Women are 51 per cent of the population and 49 per cent of the labour force, which means that few except the elderly are not employed, and even those who stay at home are given work on the putting-out system, organized by co-operatives. Family planning is not encouraged, and abortion is illegal. Maternity leave with full pay, crèches, nursery schools, prepared foodstuffs, help to free women for work; washing machines have begun to appear, but there are no prams. The girls, no doubt, are happy to have escaped the old-style oriental family and to be studying, driving overhead cranes in the steel works, or showing off gymnastics in the patriotic mass games which are a Korean speciality.

III

A thoroughgoing land reform was put through immediately after Liberation in 1945. During the war of 1950–1953 the women and old men left in the fields formed mutual-aid groups. After the armistice a sprinkling of co-operatives were set up, both of the 'lower form' (in which the land put into the pool ranks for a share in the product) and the 'higher form' (where only labour earns a share). By 1958 all peasants had joined higher-form co-operative farms. Joining was in principle voluntary. Some better-to-do peasants joined and left and joined again several times before they could make up their minds. But the movement was pushed on by the help—irrigation, tractor ploughing, house

building, technical advice—given to the co-operative and not available to those who stood out. The great rise in yields that has taken place since has no doubt put a ratchet firmly behind it.

The co-operative of a few hundred households forms the lowest administrative unit in the countryside, the *ri*. A dozen or so *ri* are grouped under a County Agricultural Committee, which gives each co-operative its annual plan, supervises its fulfilment, gives technical advice and is responsible for supplies of fertilizer, etc. The county runs a tractor station, but a particular group of tractors is allotted to each co-operative. Initially, rebuilding the villages was sometimes undertaken by the co-operative, but it is now entirely done at government expense and presented to the co-operative free of charge.

The whole net crop of grain is distributed to the members on the basis of work points. The households are then free to sell the surplus over their own requirements to the state procurement agency, which usually provides transport. The co-operative also has money to distribute, from the sale of fruit, vegetables, meat, etc. The household has a small private plot and may raise pigs, poultry and so forth to use at home and sell in the county market. The agricultural tax, formerly 9–11 per cent of produce, is gradually being abolished, starting with the poorer co-operatives. Factories using local materials are run by the county. The co-operatives are to concentrate on farming. The system is more uniform, more regulated, and more spoon-fed by the administration than the Chinese communes. The level of members incomes is well above the Chinese average, though below the highest. The great increase in production is due first and foremost to electrified irrigation, and next to the spread of technical improvements such as the cold-bed method of vernalizing seed, use of artificial fertilizers, and pest control. Doubling of per hectare yield over five years is commonly claimed. Mechanization contributes to increasing yields, for instance, by making deep ploughing possible, but its main purpose is to reduce the burden of labour and make country life less unattractive to the rising generation.

The spread of income is very narrow, both between town and country and within industry. (A qualified engineer gets only twice the basic wage.) Equality is further promoted by price

policy. Rice in the town is sold at less than a fifth of the procurement price. The subsidy is recovered in the price of manufactured consumer goods. The margins are adjusted to exempt things needed in the countryside or for children from this burden, so that differences in standards of living between small and large families as well as between town and country are further reduced.

Every industry and every service is building up capacity so as to be able to rush aid to the South as soon as communications are opened up. Every conversation, every public speech, ends bitterly with an account of the miseries prevailing there.

IV

What lessons for the economics of development can be drawn from the Korean miracle?

First, that there is something after all in national character. The Koreans have an expression, *jooche*, which means—applying Marxism-Leninism to our own problems in our own way. In Cuba, for instance, the problems are of equal dimensions and the revolutionary enthusiasm no less, but the pace is not the same. The intense concentration of the Koreans on national pride and national wrongs is most unlike the sunny, expansive Cuban style; but it is markedly more effective.

The next point is the pernicious effect of foreign aid prolonged beyond the first boost. A country that relies on aid is spared the necessity, on pain of death, to organize its agriculture, and so can limp along with a social structure inimical to growth. And even when aid does not breed outright corruption, it breeds a race of administrators to wangle and control funds, rather than technicians to create wealth.

But what about the economies of scale? Here is a country of 12 million setting out to install the whole gamut of industry and boasting of being 93 per cent self-sufficient in machine production. Certainly it is sensible for a developing country to make do with home-produced consumer goods, for what the eye does not see the heart will not yearn for. But for machinery, the text-book prescription for a small country is to concentrate on a few lines and import the rest.

Korea rejected this policy primarily on political grounds—they had no desire to remain a one-sided economy, dependent

no matter on whom. But it turns out that their policy of self-reliance has some economic advantages also.

First of all, psychological. Imported equipment, with imported know-how, inspires awe and does not help to throw off colonial mentality. Timing, also, is important in planned development. The Koreans found that some essential equipment took two and a half years to arrive from a European socialist country, which they could reproduce in four months. Above all, with their own corps of technicians they can mould design to their own conditions. Of this, the story of vinylon is a dramatic example. Perhaps economies of scale are not so important after all.

V

The formal system of government is on the usual pattern of the socialist world. In practice it seems to be even more than usually concentrated in one individual. The outward signs of a 'cult' are very marked—photographs, street names, toddlers in the nursery singing hymns to the beloved leader. But Prime Minister Kim Il Sung seems to function as a messiah rather than a dictator. After the war he went for fifteen days to live in a remote village, and emerged with a programme for agriculture and a style of work for the Party which would enlist the support of the peasants. He visits every plant and every rural district for 'on-the-spot consultation' to clear up their problems. He comes to a hospital to say that the life of doctors and nurses must be devoted to the welfare of their patients, and this thought inspires their work every day. He explains to the workers in the heavy machine plant that their products are the basis of industrialization, and pride renews their zeal. To us old cynics it sounds corny. But imagine a people hurled suddenly from a blank colonial past, without a clue, into socialism and into the twentieth century. He gives them a coherent and practicable vision of what they are to be. No deviant thought has a chance to sprout.

If professed liberals find all this abhorrent, their duty is plain: let them explain clearly to the people in the South what is happening in the North and leave them to choose which they prefer.

Actually, of course, great pains are taken to keep the Southerners in the dark. The demarcation line is manned exclusively by American troops, down to the cleaners, with an empty stretch of

territory behind. No Southern eye can be allowed a peep into the North. There is no postal connection. *This* wall is not opened at Christmas for divided familes to meet. Korean nationals in Japan have recently been allowed to be repatriated to the North if they choose, but none is allowed to visit and come back.

Once an air pilot from the South skipped, with his load of passengers. When they found themselves at Pyongyang instead of Seoul, they began to quake, expecting to be massacred in no time. They were greeted kindly, shown round for three weeks, and then sent back. As the North continues to develop and the South to degenerate, sooner or later the curtain of lies must surely begin to tear.