

Economic Growth and the Problem of Inflation¹

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PART II

We ended the last lecture by suggesting that the rate of return on capital in a growing economy will be a function of the rate of growth of incomes, and of the propensities to save out of profits and out of non-profit incomes. If we neglect non-profit savings (consisting of both personal savings and government savings) on the ground that they are largely balanced by non-business loan expenditure, the rate of return reduces to the simple formula: the rate of growth of profits divided by the proportion of profits saved. (In a steadily growing economy, however, distributive shares will be constant over time, and the rate of growth of profits will be the same as the rate of growth of the national income.)

THE SUPPLY PRICE OF RISK CAPITAL

This formula focuses attention on the factors which govern the rate of profit, actual or expected, on capital invested in business ventures—it thus governs the demand function for investment or, as Keynes put it, the marginal efficiency of capital. In order that investment should take place, it is necessary that this rate of return should be equal to, or higher than, the supply price of risk capital. According to Ricardo, capital accumulation will only continue when the rate of profit is high enough “to afford [the farmers and manufacturers] an adequate compensation for their trouble, and the risk which they must necessarily encounter in employing their capital productively”.²

This particular statement of Ricardo’s is really an early statement—perhaps the earliest statement—of what has since come to be known as the “liquidity preference theory”. For let us note that the factors “risk and trouble” set a minimum price, not to the supply of savings, but merely to the productive employment of wealth as against other forms of holding wealth which do *not* involve “risk and trouble”. These are essentially similar therefore to the illiquidity risk on which Keynes concentrated attention, and which causes the yield of long-term bonds to stand higher than the *normal* (or expected) level of the short-term rate of interest. Indeed, by focusing attention on the liquidity premium which the holding of *money* commands as against the holding of gilt-edged bonds, Keynes inadvertently diverted attention

¹ This article contains the substance of the second of two public lectures delivered at the London School of Economics and Political Science on February 6 and 13, 1959. The first lecture was published in the August issue of this journal.

² *Principles*, in Ricardo, *Works*, Sraffa ed., p. 122.

from the fact that gilt-edged securities themselves possess considerable advantages from the point of view of liquidity, both in relation to less marketable securities and even more in relation to investment in real assets such as factories or houses. The additional yield of, say, house property in relation to gilt-edged is a reflection, not mainly of the uncertainty concerning the future level of rents, but of the easy marketability of gilt-edged in relation to house property, which makes it possible for the investor to consider gilt-edged holdings as a form of reserve that can be readily "switched" into other forms as and when profitable investment opportunities present themselves; this easy marketability is certainly absent in investment in real property (or plant and equipment). Moreover, the premium which gilt-edged securities command as against direct investment in fixed assets may be quantitatively far more important than the liquidity premium which money and short-term paper commands in relation to gilt-edged securities. According to the calculations of Professor Phelps Brown, the rate of return on capital in Britain in the second half of the nineteenth century (in 1870–1914) was steady around the level of 10 per cent. (on industrial capital alone it was 15 per cent.) at the time when the yield of Consols moved around 3–3½ per cent.¹ On this calculation the premium on investments in financial assets of prime security as against the "productive employment of wealth" amounted to at least 6–7 per cent. No doubt this compensation covers other elements beside the illiquidity risk in a narrow sense—all of which were summed up by Ricardo under "risk and trouble". But the illiquidity risk—that is, the risk of not being able to withdraw from a commitment, once entered into, should the owner wish to change the disposition of his assets subsequently—is undoubtedly an important element in itself, as is indicated by the fact that businesses do not normally expect the same kind of return on investments in working capital (which are regarded as part of the "liquid assets" of the business) as on investments in fixed assets.

The necessary margin by which the expected return on any particular investment project must exceed the "pure" long-term rate of interest in order to qualify for adoption is influenced also by the level of taxation of profits in the form of income tax as well as profits tax, though more so by the latter than the former. Though nobody knows what this minimum margin is at the present time, at a guess I would put it at 10 per cent gross or 5 per cent net of taxation, which would make the necessary minimum rate of return come to 15 per cent when the pure long-term rate of interest is around 5 per cent.

The fact that the rate of interest cannot be reduced to zero, or rather to below some minimum which is necessarily higher than zero, sets a certain minimum limit to the supply price of risk capital, which is

¹ Cf. E. H. Phelps Brown and B. Weber, "Accumulation, Productivity and Distribution in the British Economy, 1870–1938", *Economic Journal*, June 1953, p. 286.

in itself fairly high. Thus if the differential is assumed to be 10 per cent. and the minimum pure long-term rate of interest, below which it cannot be brought by any amount of monetary liquidity, is 2 per cent., the minimum rate of profit necessary to secure the inducement for continued investment is 12 per cent. This in turn is only consistent with the continued accumulation of capital when the rate of growth of income exceeds a certain minimum—a minimum which cannot be calculated precisely (since the savings parameters in our equation can only be guessed within limits) but which is likely to be between one-half and one-third of this rate, that is to say, between 4 and 6 per cent. per annum.

MONEY GROWTH AND REAL GROWTH

It is here, in my opinion, that the question of rising or falling prices assumes critical importance. For the determinant of the *money* rate of return is the rate of growth of income in *money* terms, which will exceed or fall short of the *real* rate of growth according as prices are rising or falling. If this is correct, a regime of completely *stable* prices is only consistent with a steadily growing economy when the real rate of growth in the national income is fairly high—when it exceeds 4–6 per cent. per annum. *A fortiori*, a policy of stable incomes and falling prices—which so many economists, starting from the Swedish economist Davidson at the turn of the century, have regarded as a kind of ideal—is not consistent with growth at all: not unless the population increased so rapidly that *aggregate* incomes grew at the required minimum rate, despite the fact that incomes *per head* were constant.

Thus in this country the gross national product in money terms grew since 1946 at a compound rate of $7\frac{1}{2}$ per cent. per annum, while the real rate of growth was just under 3 per cent. The annual rise in output prices was thus around $4\frac{1}{2}$ per cent. and the pure long-term rate of interest rose gradually from a low of $2\frac{1}{2}$ per cent to around 5 per cent. Taking the average rate of profit at $2\frac{3}{4}$ times the rate of growth, the *money* rate of profit comes to 20 per cent. But the *real* rate of profit on this assumption comes to only just above 8 per cent., which would not have sufficed, on our hypothesis of a 10 per cent. minimum margin to give adequate inducements, unless the rate of interest was *minus* 2 per cent. This is precisely what the inflation had done; it reduced the *real* rate of interest to negative levels throughout most of the period, and to around zero during the recent period of relatively high interest rates.

It follows that price stability is only consistent with steady growth when the rate of growth of productivity and/or of the working population is sufficiently large to give a relatively high rate of growth to the total national product. In a weakly growing economy, price stability will mean stagnation unless the propensity to consume is raised sufficiently to offset the effect of a lower rate of growth of profits

through a higher share of profits in total income. Thus if the savings propensities were halved, the share of profit in income would be doubled at any given ratio of investment to output, and the rate of profit on capital would be doubled at any given rate of growth of income. (But the requirement of combining a régime of stable prices with a high and growing share of profits in the national income makes the policy objective of avoiding any excessive increase in money wages the more Utopian.)

If the rate of profit is insufficient for *steady* growth, this does not mean that the system will relapse into permanent stagnation—if it did, the past history of capitalist economies could not have exhibited the trend rate of growth which it has shown. But what it does mean is that the process of accumulation and growth is periodically interrupted: periods of accumulation tend to get telescoped into a certain proportion of the years; progress proceeds by fits and starts, and not at a steady rate. Given a sufficiently high rate of growth of productivity (and/or of the working population), or given an adequate supplement to the real rate of growth in the guise of inflation, there is no reason why “booms” should not be perpetual. There is no reason, in other words, to regard the trade cycle as inevitable, provided that money incomes can be kept rising at a rate that is both adequate and steady.

Hence a slow and steady rate of inflation provides a most powerful aid to the attainment of a steady rate of economic progress. One of the few economists of our generation who seems clearly to have perceived this point, in his early writings, is Professor Sir Dennis Robertson who originated the idea, and who coined the phrase, of the policy of the “gently rising price-level”. He was well aware, as shown by his book, *Money*, that a progressive rise in the price-level “so long as it is not so blatant as to generate social disorder or sap the foundations of contract . . . stimulates the production of goods: by benefiting the pockets of the controllers of industry stimulates also their energies and activities: . . . and this fillip to production, by adding to the flow of goods, serves to moderate the very rise in prices which gives it birth”. Hence “so long as the control of production is in the hands of a minority, rewarded by means of a fluctuating profit, it is not impossible that a gently rising price-level will in fact produce the best attainable results, not only for them but for the community as a whole. And it is tolerably certain that a price-level continually falling, even for the best of reasons, would prove deficient in those stimuli upon which modern society, whether wisely or not, has hitherto chiefly relied for keeping its members in full employment and getting its work done”.¹ On the other hand, Keynes, who had such a remarkable intuition in this field, was curiously blind to the implications of continually rising money wages for the inducement to invest. He believed that with the progressive accumulation of capital there would be a gradual slowing-down in economic progress leading to a

¹ *Money*, 1922, pp. 122–125.

fall in the marginal efficiency of capital which in turn would lead to an ultimate Day of Judgment (as Professor Pigou called it) when the rate of interest fell to the absolute minimum governed by liquidity preference and when further accumulation and progress necessarily came to an end. He certainly failed to perceive that the simple expedient of allowing money wages to rise faster than productivity—which to us, these days, seems such an easy thing to do—is enough to lay this particular ghost indefinitely. If the *money* rate of interest cannot be brought down below a certain floor, the *real* rate of interest certainly can *crash* through it—indeed, it may be difficult to prevent it from falling too far! Granted the fact that in the last resort we can always have recourse to a little inflation there is really no reason why an unfavourable constellation between Liquidity Preference and the Marginal Efficiency of Capital should bring capitalism to its ultimate doom.

Having said all this, I do not wish to leave you with the impression that the inflation of the post-war era was the best in the best of all possible worlds. While it is highly probable that some inflation in the circumstances was necessary to provide adequate stimuli to continued growth, the actual extent of the inflation does appear to have been greater than that required for the purpose. This is shown by the fact that rising investment levels (both absolutely and as a proportion of the national income) were combined with a fairly sharply rising trend in the money rates of interest since 1948—a clear indication that the money rate of profit exceeded the rate of interest by more than the required minimum.

As I mentioned before, the actual rate of growth of money incomes, both wages and profits, was around $7\frac{1}{2}$ per cent. a year. It seems probable, though one cannot of course be certain, that much the same levels of employment, real investment and rates of productivity growth would have been attained if the rate of increase of money wages and money profits had been only around 4–5 per cent. a year. On the other hand I would be worried about a policy which restricted the rate of increase in money wages to the $2-2\frac{1}{2}$ per cent. which corresponded to the rate of growth of real output per man: not that the prospects of attaining any such objective are sufficiently great to give one much cause for anxiety. (In the majority of industrialised countries in the post-war era, and not only in Britain, annual wage increases averaged 5–8 per cent. a year.) But a target for annual wage increases of 4–5 per cent. a year does not seem to me beyond the bounds of possibility; nor does it seem to me beyond reach so to improve the technical dynamism of the British economy as to raise the rate of growth of productivity to somewhere near that figure. In other words, the objective of price stability could be attained, and could only be attained consistently with economic growth, by a combination of measures that would on the one hand reduce the rate of wage inflation, and on the other hand raise the rate of growth of productivity so that the two rates would ultimately converge in the middle, so to speak.

In the remaining part of this lecture I should like to go in more detail into these two critical aspects of the problem—the rate of increase in money wages and the rate of growth of labour productivity.

CAUSES OF WAGE INCREASES

Amid the welter of conflicting views on inflation it is reassuring to find a fair unanimity among economists on the key role of the rate of increase in money wages in the inflationary process. Without a continued rise in money wages inflation could not go on as a *process* in time—since whatever forces were present in the economy making for a rise in prices, they could only have caused a once-and-for-all rise in prices which would in itself have served to eliminate the excess demand that gave rise to it. It is the rise in wages which governs the *increase* in monetary demand, and thus the rate of increase in incomes in general. It is generally agreed also that the rate of increase in money wages has little if any influence on the *share* of wages in the national product: when money wages rise at a faster rate, money profits will also rise at a faster rate; there is no reason to suppose that wages over any period of time stand higher in relation to profits over that period than they would have stood with a lower rate of increase in money wages.

It is when we come to analyse the factors which determine the increase in money wages that there is a conflict of opinion between those who believe that it is governed by the pull of excess demand in the labour market—by the competitive bidding of employers for labour, each offering jobs a little above the prevailing level of rates in order to attract labour from other employers—and those who believe that it is mainly the outcome of collective wage negotiations and reflects the pressure for wage increases from the side of the unions. On the former view the role of collective wage negotiations is mainly to put an official stamp, so to speak, to the wage increases that would have come about in any case, under the pressure of market forces; while on the latter view, competitive bidding for labour by employers accounts for a small part of the annual rise in wages, represented by *some* of the excess in the rise in actual earnings over the increase in negotiated levels. (In Britain this excess averaged 1 per cent a year since 1948, while the rise in negotiated wages averaged 6 per cent. annually. Assuming that one half of this excess was due to the wage-drift caused by competitive bidding, the other half reflecting the effect of overtime and piece-rates, the “demand-pull” element, on this latter view, accounted for only about one-twelfth of the rise in wages that had taken place.)

The demand-pull theory assumes a degree of perfection in the labour market which is unrealistic. It relies on the assumption that when production is limited by labour shortages it pays an individual employer to offer higher wages if thereby he can attract labour from other employers and thus increase his own output. But whether it

does so or not depends on whether it is possible for him to offer higher rates to newcomers without increasing at the same time the wages of his existing workers; and on the number of additional men the employer wishes to engage in relation to his existing labour force. A large establishment clearly could not discriminate in favour of new employees without a serious deterioration of labour relations; added to which is the fact that the elasticity of supply of labour to a large employer may not be very large. Hence it is only in cases where the individual employer hires only a single employee or a few employees (as, for example, in domestic service) that a shortage of labour is likely to exert an upward pressure on the wage level from the side of demand.

Recently Professor Phillips has published some interesting calculations¹ showing that there was a strong negative correlation in the 1861–1913 period (and to some extent also in the post World War II period) between the rate of increase in money wages on the one hand and the level of unemployment *and* the rate of change of unemployment on the other hand. I think he has established the existence of these relationships; but I do not believe that they support the particular inference which he draws from them (even for the pre–1913 period)—i.e., the inference that the rise in wages reflects mainly the competitive bidding for labour by employers, with “employers bidding more vigorously for the services of labour in periods of *increasing* demand than in a year during which the average percentage of unemployment was the same but the demand for labour was not increasing”² I think his figures are perfectly compatible with the alternative theory—indeed, I am prepared to argue that they provide a better support for that theory than for his own.

On this alternative theory the rise in money wages depends on the *bargaining strength* of labour; and bargaining strength, in turn, is closely related to the prosperity of industry, which determines both the eagerness of labour unions to demand higher wages and the willingness and ability of employers to grant them. It is when investment is high that profits are high, and it is in periods of rising total production and rising productivity that profits are rising. Such periods in turn are periods of low unemployment, and also periods of falling unemployment. If instead of relating wage increases to unemployment and the rate of change of unemployment, Professor Phillips had related them to the increase in production, or to the increase in profits of the previous year, I am confident that he would have found an even better correlation—for *all* his periods, inter-war and post-war, as well as pre-war, excepting perhaps those years when Sir Stafford Cripps was Chancellor and a policy of voluntary restraint by the labour unions was in operation.

¹ A. W. Phillips, “The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861–1957”, *Economica*, November 1958.

² *Ibid.*, p. 283.

Prosperity, and rising prosperity, determine the bargaining strength of labour, simply because in most cases—with the exception perhaps of some large monopolies or oligopolies—neither employers nor unions take into account the rise in prices and profits that would result from wage increases, so that the scope for wage increases is limited by what can be granted out of the profits earned at the *existing* level of prices. No doubt wage increases lead to a rise in prices as well as costs, but in most cases this process is an indirect one, operating through the subsequent rise in the level of demand; it is not something that is taken for granted, and brought into the calculation beforehand. (If this were not so, there is no reason why employers should resist demands for increased wages—indeed, they ought to welcome them.) In practice, the general rate of increase in the wage level is largely determined by the rate of increase in wages in leading industries, and it is the *already attained* increase in profits of these industries, whether resulting from a previous increase in demand or from a rise in productivity, which governs the increase in negotiated wages. Added to this is the fact that the employers' eagerness to come to a settlement is closely related to the prevailing state of business activity. In times of low order books, the prospect of a strike, involving a shut-down of the works for a certain period, does not frighten the employers; in certain circumstances they might even welcome it if it enables them to lower costs by telescoping operations into a shorter period. It is in times of high business activity that strike action is both costly and embarrassing to the employers. It is these factors, and not the competition of unemployed labour as such, which often make the bargaining strength of labour weak in times of relatively high unemployment.

There is thus a complicated interaction, in a growing economy, between the rise in profits and the rise in wages. The rise in production leads to a rise in profits as such; this in turn leads to a rise in wages which, by increasing demand further, causes a faster rate of increase in profits. It is therefore more correct to speak of a profit-wage spiral than of a price-wage spiral: for the rise in wages is prompted by the rise in profits, irrespective of whether the rise in profits was accompanied by any (or by a corresponding) rise in prices. As Professor Phillips concludes, there is no evidence that the rise in the cost of living is normally a significant factor in determining the rate of increase in wages. The cost-pull or wage-pull is not motivated by the rise in the cost of living: it is motivated by the rise in profits which governs the employers' ability to grant wage increases; and though this process is consistent with a shortage of labour for its operation, it does not by any means presuppose such a shortage.¹

As against this, the demand-pull theory favoured by Professor Phillips is up against a host of difficulties. For one thing, it cannot

¹ This is best shown in not-fully-developed economies like Italy, where wages in the industrial sector habitually rise at least as fast as in the "full-employment" economies, despite a great superfluity of labour.

explain why, in the Crippsian period, 1949–1950, the rise in both wages and earnings should have been so moderate (the rise in wages averaged less than 3 per cent. in these two years) when unemployment was no greater than in the surrounding years. If the rise in wages is primarily motivated by the competitive bidding for labour by employers, an appeal for voluntary wage restraint to the unions would merely increase the gap between the rise in negotiated wages and the rise in earnings; it would not slow down the latter. Secondly, the demand-pull theory cannot explain why periods of rising production and profits should cause a rapid rise in wages, even in times of high unemployment—as for example, in 1936 and 1937, when wages rose at comparable rates to the post-war years, despite the fact that unemployment averaged 11–13 per cent of insured workers. Finally, the demand-pull theory can hardly explain why the rate of wage inflation in countries like Germany should have exceeded that of Britain, despite the fact that, owing to the rapid rise in the working population, a period of exceptional production growth was associated with the persistence of considerable unemployment.

PRICE STABILITY AND UNEMPLOYMENT

I have dwelt on Professor Phillips' views at some length simply because a misguided diagnosis of the causes of wage inflations can play such a vital role in policy decisions which are of the utmost importance to the economy. Professor Phillips' conclusion from his investigation is, that, assuming an increase in productivity of 2 per cent. a year, "if aggregate demand was kept at a value which would maintain a stable level of product prices, the associated level of unemployment would be a little under $2\frac{1}{2}$ per cent. If, as is sometimes recommended, demand were kept at a value which would maintain stable wage rates, the associated level of unemployment would be about $5\frac{1}{2}$ per cent.¹ The clear implication of this is that it is possible through the regulation of effective demand to combine steady growth with stable prices, or even with stable incomes and falling prices, provided only that unemployment is maintained at some "required level" which is by no means unreasonably large.

There are a number of things, in my opinion, which are fatally wrong with this conclusion. In the first place, for reasons analysed in my previous lecture, an under-employment equilibrium when the level of production is limited by demand, and not by production bottlenecks, is only stable when the level of production is stationary over time, so that there is no *growth* in output giving rise to induced investment. If effective demand is kept at a high enough level, and at a growing level, to induce a steady growth in capacity year by year, forces are inevitably generated which will push the economy to the point of maximum production in the short run: at any lesser level of output, as we have seen, the demand curve will cut the supply curve

¹ *Ibid.*, p. 299.

the wrong way round, and equilibrium will be unstable. For this reason it may not be possible to run a growing economy at half-cock, i.e., to keep it steady at a less-than-full-employment level of activity.

But even if by a combination of superb skill and cunning and the sureness of touch of a tight-rope dancer, the Treasury and the Bank of England succeeded in keeping the economy in a moving state of unstable equilibrium—succeeded, in other words, in maintaining a steadily growing real demand for goods and services, whilst never allowing the economy to run up against the bottleneck of full employment—it is a fallacy to believe that the mere fact that unemployment is not allowed to fall below some critical level will suffice to keep down the rise in wages and profits to some prescribed level. For the very fact that production is growing will mean that profits are growing; it is the growth in profits which causes wages to rise and thereby step up the rate of growth of profits and also of wages. It is not enough, therefore, to create unemployment in order to stop a wage inflation. Since in a capitalist economy rising production is closely interlinked with rising profits—it is impossible to have the one without the other—a policy of “damping down demand” can only succeed in stopping the inflationary spiral if it also brings to a halt the process of growth. A 5, or even 10, per cent. rate of unemployment is perfectly compatible with a profit-wage spiral so long as growth goes on; and recent history is strewn with attempts to bring monetary depreciation to a halt by measures which brought the growth of production to a halt, whether or not they succeeded in halting the rise in prices.

Fortunately there is no real, inescapable dilemma here. All that is necessary is to recognize that the proper way of dealing with inflation is to damp down, or restrain, the rate of increase in money wages *as such*, instead of damping down the demand for goods and services. If the increase in wages is slowed down, the growth of monetary demand will be automatically damped down too, and so will the rise in profits. Measures restricting the cost-push inflation coming from the side of the unions, unlike measures restricting the demand for goods, do not necessarily interfere with the real rate of growth of the economy.

A democratic community, unlike totalitarian countries, cannot stop wages from rising by the mere fiat of the Governmental authority, whether through freezing wages, compulsory arbitration, the imposition of a central authority with vetoing powers, or the like. But within our existing institutional framework it is possible to develop arrangements which would tend to slow down the growth of wages and profits without the use of compulsory powers. The most promising line of approach seems to me the introduction, on American lines, of a system of “wage-contracts” concluded for a definite period, say, for two years or longer. If by this means the period elapsing between the re-negotiation of wages could be lengthened, the annual rate of increase in wages would be reduced, simply because the rate of growth of profits

would be slowed down if wages were held steady for longer periods. If wages were negotiated afresh after, say, the lapse of every *two* years, the biennial round of wage increases would be bound to be less than twice the annual round. It is with some such arrangement that the rise in wages could be brought down to the 4-5 per cent. annual rate which I mentioned earlier as a reasonable target.

RATE OF GROWTH OF PRODUCTIVITY

More intriguing is the question whether, and by what means, the rate of growth of output per head could be stepped up so as to make this "safe" level of wage and profit inflation of 4-5 per cent a year consistent with stable prices. (A faster rate of economic growth would of course be a good thing in itself quite apart from the objective of avoiding inflation!) On this issue, most people pessimistically assume that the rate at which productivity is growing over time is just one of the facts of nature. Yet the rate of growth of productivity shows wide variations between different countries and periods: it could hardly be regarded as a law of nature that the annual growth of productivity should be 2 per cent. in Britain, 3½ per cent. in America, 6 per cent. in Germany, Italy or France, and 10 per cent. in Japan, as was the case in the 1950's (not to mention the fancy figures that drift across the Iron Curtain). These differences in the rates of growth of production were of course strongly correlated with the ratio of gross investment to the gross national product; fast-growing economies invariably invest a higher proportion of their current product than slow-growing economies. A higher ratio of investment to output is therefore an essential precondition for stepping up the rate of growth of the economy.

Yet it would be a mistake to believe, I think, that we could double the rate of growth merely by doubling the share of investment in output. If this were true, investment would have tended to expand on its own, so to speak, through the operation of market forces. As I argued in the previous lecture, the technical dynamism of an economy, its capacity to absorb or assimilate technical change, sets a limit to the *useful* rate of investment; and there are several instances (e.g. Norway) to show that a Government-directed expansion of the investment coefficient may merely lead to a sharp rise in the capital-output ratio with only a moderate effect on the rate of growth of productivity.

The factors which determine the growth of productivity partly depend on the improvement of design of newly installed plant and equipment, and partly on the rate of disappearance of obsolete equipment which sets a limit to the extent to which new equipment can be usefully absorbed by the economy. These factors are interconnected: since the faster the rate of improvement in productivity on newly installed equipment, the faster the decline of prices relative to wages (the faster, in other words, the rise in *real* as distinct from *money* wages),

which in turn determines the rate at which ancient equipment disappears from the production process, and the greater, therefore, the scope for the introduction of new equipment. Further, a higher rate of increase in *real* wages not only increases the rate of turnover of equipment, but it tends to enhance the rate of improvement of design on new equipment, since it gives stronger incentives for making the new equipment *more* labour-saving. It is for this reason that the rate of growth of productivity appears to be positively correlated with the rate of growth of working population, for when the employed population is increasing, the rate of absorption of new equipment is relatively high (the average age of equipment is falling); this in turn accelerates obsolescence, and hence makes room for a still higher rate of absorption of new equipment at the same time as it enhances the rate of improvement of design. The low rate of growth of productivity in Britain may thus have something to do with the near-stationariness of her industrial working population: this makes for a low rate of absorption of new equipment, a slow rate of growth in real wages, hence a low rate of obsolescence and weak incentives for design-improvement.

If this view is correct, a great deal could be done by measures designed to accelerate the rate of scrapping of obsolete equipment and the consequent release of labour which would make room for a higher rate of absorption of new equipment. This may be stimulated by the revival of price-competition, tending to eliminate inefficient firms and inefficient plant; it could also be stimulated by special tax measures, complementing accelerated depreciation allowances at one end by obsolescence taxes at the other end—by some kind of negative depreciation allowance on the employment of over-age plant, if this were feasible.

There is no time to probe more deeply into such problems. All I have been able to do here is to indicate some of the reasons for the belief that there is no real justification for having a fatalistic attitude concerning the rate of economic growth that could be attained in the British economy, given the proper diagnosis and given a purposive direction.

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