Repercussions of a Reduction in Hours of Work

The eight-hour day, implying the 48-hour week, was a key demand of the working class long before the International Labour Organisation was established, and the first Convention adopted by the First Session of the International Labour Conference was the Hours of Work (Industry) Convention, 1919, limiting hours of work to eight a day and 48 a week in industrial undertakings, which came into force on 1 June 1921. In 1935 the Conference adopted a Convention embodying the principle of the 40-hour week—the Forty-Hour Week Convention 1935, which to this day has been ratified only by New Zealand and has therefore not come into force.

More recently a very strong body of opinion in favour of a reduction of hours of work without loss of income has taken shape in the trade union movement, it being argued that the past contributions of such reductions to social and economic progress, the great increase in productivity and output resulting from technical advances over the years, and the possible effects of automation on employment render this step both feasible and necessary. The present article reproduces part of a report on the subject presented to the Governing Body of the International Labour Office in March 1956 at the request of the 37th Session of the International Labour Conference.

SHORTER hours of work mean more leisure and, in most cases, less fatigue. Their other effects, direct and indirect, are less easy to predict. Among the more direct effects one may distinguish those on output, costs of production, prices, real wages, profits or the earnings of publicly owned undertakings, and employment. Less direct effects may include effects on the level of savings and investment, the structure of production and the balance of international payments.

These various possible repercussions of a reduction in hours of work differ from time to time and from place to place, and they act and react upon one another. In a world in different stages of economic development and with widely varying institutional arrangements, great caution is needed in making generalisations about the effects of reducing hours of work. In different stages of economic development the repercussions of a reduction in hours of work may vary because of differences both in the hours initially worked and also in the rate at which productivity tends to increase. An increase in productivity may partly or wholly offset, or more than offset, the adverse effects of shorter hours of work if any. In some more developed countries there is a strong tendency for productivity to increase from year to year. In some underdeveloped countries, on the other hand, where the impact of modern technology is very recent, the normal increase in productivity may as yet be slower. Other relevant differences between underdeveloped and more highly developed economies are mentioned in later paragraphs; but, bearing in mind these differences, the basic analysis applies to economies in all stages of development.

It applies also, with due allowance for the very important institutional differences, to countries in which state planning predominates no less than to countries in which private enterprise predominates. It is important to bear in mind not only the differences between these two types of economy but also the basic features they have in common. In either type of economy, for example, if there were to be a reduction in the total volume of output with no reduction in the aggregate real income paid out in the form of wages, there would be some reduction in other types of income. In either type of economy a reduction in hours of work would be likely to affect the real costs of production of some goods to a greater extent than those of others, and some shift in the proportion of resources devoted to different types of production would become appropriate if it were desired to make the most productive possible use of available resources. In private enterprise economies a rise in costs tends usually to be reflected in higher prices; in centrally planned economies this will be a matter for decision by those responsible for planning, but if prices are not raised some other means will have to be found to restrict the consumption of any goods that may be produced in smaller quantities than would have been produced if hours had not been shortened.

Demands for shorter hours are almost invariably coupled with the demand that there should be no reduction in basic weekly pay. The discussion of the effects of shorter hours in this article is therefore based throughout on the assumption that money wages *per week* are not reduced. The analysis would be different at various points if it were assumed instead that only *hourly* money wages were maintained.

One general point may be borne in mind. The effects of reducing hours of work depend a good deal upon the degree of rigidity or flexibility of the legislation, collective agreements or other instruments limiting normal hours of work. It is generally recognised that employers and workers should be free to resort to overtime under certain circumstances and subject to certain safeguards, such as those provided for in international labour Conventions. Where these circumstances and safeguards are defined in such a way as to make resort to overtime extremely difficult and costly, the effects of a reduction in normal hours of work are in general likely to be more far-reaching and more difficult to absorb smoothly [1] than in cases where overtime can be resorted to more easily and at less cost.

In the paragraphs below which discuss the effects of shorter hours on output, it has been possible to draw on the results of a considerable number of case studies, though the interpretation of this material is not easy. Since output is affected by a great many things besides hours worked, it is not always certain that an increase or decrease in output which occurs after a change in hours is necessarily a result of that change.

The difficulty of appealing to experience is even greater in discussing the more remote effects of shorter hours. Case material is very scanty, and in any event no general conclusions could be drawn from particular studies, which would inevitably reflect chiefly the effects of causes other than a reduction in hours of work. If one compares statistics of, for example, wages, prices, employment or a country's balance of payments immediately before and after a reduction in hours of work, the effects of this reduction will not be fully reflected because they will not have had time to work themselves out in full. If one examines such statistics over a longer period of time, the effects of the reduction in hours of work will be lost amid a multitude of other influences.

Benefits of Greater Leisure

Sufficient leisure for rest and recuperation is necessary for health and wellbeing. To the extent that the complexities of work and life in a modern community lead to greater fatigue and strain, the need for leisure for these purposes increases. But leisure in modern life is needed for many other reasons too. The growing specialisation of an industrial society tends to mean that only a small part of all the varied capacities of the individual is utilised during his working hours. The same forces—those making for higher productivity—that have made increased leisure possible over the last century have also made leisure more necessary for all the many workers whose jobs cannot, by their intrinsic nature,

[1] See the references to possible transitional difficulties, on pp. 42-44 below.

provide a main focus of interest in their lives or opportunities for self-expression or all-round development.

At the same time the demands made upon the worker during his leisure tend to increase in complexity. To give only two examples, the task of raising a family and the task of discharging one's civic obligations probably call for more thought, care, time and effort today than in the simpler societies of the past. In addition, there are today new opportunities for making valuable use of leisure—opportunities for liberal and cultural education and enjoyments, for vocational and professional training, for sports and for travel. These opportunities are bringing to the ordinary man and woman educational and cultural possibilities that in the past were confined to the privileged few. But they compete for limited hours of leisure with the need for rest and the tasks of running a household, bringing up a family and being a good citizen.

Adequate leisure is thus a necessary condition for leading a full, rounded, useful and satisfying life. In so far as more leisure makes for less fatigue, better health, fuller development of individual capacities, better care of children, greater attention to civic obligations, better education and higher cultural levels, it may improve the quality of living and the calibre of the men and women of today and tomorrow, and incidentally make for higher productivity. Greater opportunities for general education and for improving their technical qualifications may enable workers to participate more actively in economic and social life and to make increasingly valuable contributions to economic and social progress.

It may be felt that there is nothing in these considerations to suggest that leisure has become more desirable in itself than it was, say, 20 years ago. Or, on the other hand, it may be felt that the pace, strain and complexity of life and work, and the proportion of workers engaged in jobs providing little scope for self-expression or all-round development, have continued to increase, thus putting an additional premium on leisure. The continued growth in the size of cities and the proportion of people living in large cities and making lengthy journeys to and from work every day, and the increase, in many countries, in the proportion of married women having jobs, are other factors that may be felt to support the same conclusion. One consideration that may be held to point in the other direction—i.e. to put a premium on greater production rather than on more leisure—is the large number of new products and services placed on the market in recent years, and the desire of workers and their families to be able to pay for them.

But whether or not leisure has become more desirable in itself in recent years, it is clear that these years have witnessed, in a great many countries, a substantial growth in productivity and in average real income per head. This means that these countries are now in a better position to afford more leisure, even if this may, in normal circumstances, have to be purchased at the cost of some reduction in the potential output of goods and services.

Effects on Output

A considerable number of studies have been made of the relationship between hours of work and output.[1] These studies vary in quality and reliability, and all suffer from the difficulty of isolating the effects of a change in hours of work from those of other factors simultaneously affecting output.

Experience during both world wars confirmed earlier experience that working excessively long hours defeats its own purpose. It is possible to draw on the reserve strength of workers for brief spurts and to obtain greatly increased output, but over an extended period nature takes its revenge. It seems clear that, in general, when the working week is so long that it imposes great fatigue and strain on workers, a reduction in hours will lead in the long run to an increase in output, not merely per hour but also per week,

[1] These include H. M. Vernon : *Industrial Fatigue and Efficiency* (New York, E. P. Dutton and Co., 1921) ; Medical Research Council, Industrial Fatigue Research Board : *Results of Investigation of Certain Industries*, Report No. 27 (London, H.M. Stationery Office, 1924) ; P. Sargant Florence : *The Economics of Fatigue and Unrest* (New York, Henry Holt and Co., 1924) ; E. Farmer, R. S. Brooke and E. G. Chambers : " A Comparison of Different Shift Systems in the Glass Trade ", in United Kingdom Industrial Health Research Board : *Report No. 24* (1924) ; G. H. Miles and A. Angles : " The Influence of Short Time in Speed of Production ", in *Journal of the National Institute of Industrial Psychology* (London), 1925, pp. 300-302 ; National Industrial Conference Board : *The Five-Day Week in Manufacturing Industries* (New York, 1929), pp. 41-49 ; Elton Mayo : *The Human Problems of an Industrial Civilisation* (New York, Macmillan, 1933) ; N. Whitehead : *The Industrial Worker* (Cambridge, Massachusetts, Harvard University Press, 1934) ; Waldo E. Fisher : *Economic Consequences of the Seven-Hour Day and Wage Changes in the Bituminous Coal Industry* (Philadelphia, University of Pennsylvania Press, 1939) ; F. J. Roethlisberger and W. J. Dickson : *Management and the Worker* (Cambridge, Massachusetts, Harvard University Press, 1939) ; United States Public Health Service : *Fatigue and Hours of Service of Inter-State Truck Drivers*, Public Health Bulletin No. 265 (1941) ; H. M. L. Murray : " Basis of Worker Efficiency ", in *Personnel Journal* (Baltimore), 1942, pp. 131-145 ; S. Wyatt : *A Study of Variations in Output*, Medical Research Council, Emergency Report No. 5 of the Industrial Health Research Board (London, H.M. Stationery Office, 1944) ; United States Department of Labor, Bureau of Labor Statistics : *Hours of Work and Output*, Bulletin No. 917 (Washington, 1947) ; Lucila Valdez de Ducostaing : *Estudio del factor fatiga y rendimiento en las distintas actividades profesionales dentro de la industria y el comercio* (Lima, National University of San Marco, 1947) ; Kali Prasad : *Fatigue and Efficiency in the Textile Industry* (Lucknow, University Laboratory of Experimental Psychology, 1950) ; and O. Graf (Max Planck Institute, Dortmund) : " Die 40-Stunden-Woche in Arbeitsphysiologischer Sicht ", an address before a seminar on the 40-hour week, Dusseldorf, May 1955.

i.e. hourly output will increase sufficiently to offset the reduction in hours worked. But, when the working week is not so long as to impose great fatigue or strain on workers, there is less scope for an increase in hourly output as hours are reduced. Reduction of hours below a certain level, though it may still be accompanied by some increase in hourly output, is likely to lead to a reduction in output per week—i.e. any increase in hourly output that may result is likely to be insufficient to compensate for the reduction in hours.

It is generally recognised that the length of working week that will yield the largest weekly output varies according to the nature and intensity of the work and the strength and resistance to fatigue of the workers, being different for light work and heavy work, and for males, females and juveniles. It may also vary with the climate and with a host of other factors such as the incentive to produce, the degree to which workers control the pace of work, the conditions under which they work, whether they work on day, evening or night shifts, whether shifts are rotated and how frequently, and—less tangibly—the extent to which labour-management relations are satisfactory. Thus the effect of a reduction in hours of work on output cannot be determined in the abstract ; it can only be determined, in any particular case, in the light of all the relevant circumstances. There are, however, certain general considerations that may be borne in mind.

The first has already been referred to. It seems clear that the greater the fatigue to which workers are exposed before hours are reduced, the greater the likelihood, other things being equal, of a substantial increase in hourly output, at least in the long run, when hours are reduced. While this conclusion appears acceptable to common sense and in conformity with experience, it should be added that it is difficult to establish it scientifically, for the phenomenon of fatigue is still very imperfectly understood. There are different kinds of fatigue, psychological as well as physical, and no satisfactory measure of fatigue in any general sense has yet been devised. It is, however, known that the effects of fatigue are cumulative : it takes an organism longer to recover from the effects of a new effort involving fatigue if, at the time when that effort was made, the organism had not fully recovered from the effects of a previous effort. The harmful effects on health of excessive fatigue constitute some of the strongest reasons for regulating both normal hours and overtime.

This leads to a second point. When considering the effects of shorter hours on output it is, except in an emergency, long-run output that chiefly matters. Workers' long-run output depends not only on their hourly output while actually at work but also upon sickness, injury and absenteeism and, while these have many other causes, fatigue is likely to increase their incidence. In an inquiry carried out by the United States Bureau of Labor Statistics in 1947, which included 78 case studies, it was found that, in general, the longer the hours the more time was lost through absenteeism, and that work injuries increased disproportionately as daily hours were raised. There are indeed good reasons why absenteeism should fall when hours are reduced—in particular, the worker has more time to attend to household or family responsibilities, which are a frequent cause of absenteeism.

A third general consideration is that the effects on output of a reduction in hours will depend partly on what adjustments, if any, management makes in the methods and organisation of the work when hours are reduced. If, for example, shorter hours were to make it worth while to install new labour-saving equipment, any tendency for output to fall might be partly or wholly offset.[1] But, since most changes take some time to introduce, long-term effects on output may be less substantial than short-term effects.

Fourthly, when work is machine-paced, the worker has little or no possibility of increasing his hourly output when hours are reduced (though the work may improve in quality), unless management and workers find that with shorter hours a greater speed of machines, when possible, is acceptable.

Fifthly, the effect of a reduction in hours may depend in part on the system of wage payment in operation. There is some evidence that when workers are paid by results output per hour is more likely to increase substantially when hours are reduced than in cases where time rates prevail.

Finally—a factor tending in some cases to offset the favourable effects of a reduction in fatigue on average hourly output—when hours are reduced there may be an increase in the proportion of " overhead " or " unproductive " time (for example, time spent each day in cleaning, starting up, and maintaining machines, or walking from the shaft to the coal face). However, the proportion of " unproductive " time varies from one job to another. It is affected not only by the technical nature of the work and the length of working hours but also by such matters as the distribution of working hours over the week, the organisation of work and the prevalence of shift work. From this point of view the way in which hours are reduced may be of considerable importance. The elimination of one shift, e.g. the Saturday morning shift, might have little or no tendency to increase the proportion of " unproductive " time, but an equal reduction taking the form of a shortening of

[1] See p. 33 below.

each shift, the number of shifts remaining the same, might increase the proportion of " unproductive " time considerably.

When so many different considerations are involved, it is clearly difficult to generalise about the effects of shorter hours on output. On the whole, though, the balance of evidence in the available literature on the subject appears to point to the conclusion that, in the more highly industrialised countries, the reductions in hours already achieved have brought the hours normally worked in most jobs within the range where further reductions, though they might and frequently would lead to higher output per hour, would, other factors remaining unchanged, be associated with some loss of output per week. There may still be cases where shorter hours would lead to a larger weekly output and such cases may, indeed, be more common than is generally believed. But it is difficult to suppose that they can be frequent, for they can only arise where employers or public authorities are inadvertently foregoing opportunities for increasing the profitability of their undertakings by reducing hours and getting a larger output for the same wage bill.

The above conclusion regarding the probable effect of shorter hours on output in highly developed countries may not, of course, continue to apply if conditions of production change. Technological changes may substantially alter the relationship between output and hours of work. The widespread use of automation, for example, might have this effect. Under automation there will probably be some tendency to increase the amount of shift work because of the importance of utilising expensive equipment as fully as possible.[1] In addition, because of the high cost of machinery and the large quantities of goods-in-process, the costs of breakdowns, damage to machines and spoilt goods-in-process may be very high. Productivity may depend to a great extent on maintaining a process in continuous operation. Accuracy in setting up machinery, alertness in preventive maintenance and quick diagnosis and repair of breakdowns when they occur may acquire increased importance. There have been few investigations of how careful maintenance, efficiency in setting up machinery and speed in locating and repairing breakdowns are likely to be affected by hours of work. It might be, however, that shorter hours for workers would be advantageous from the point of view of productivity, so long as they did not mean shorter hours of plant utilisation, if it were to be found that a shorter working week would result in greater alertness in detecting the malfunctioning of an automated process and in better preventive maintenance on automated machinery.

[1] See pp. 33-34 below.

In underdeveloped countries there may be greater possibilities than in the more highly developed countries for increasing both hourly and weekly output by shortening hours of work. In some cases working hours are longer there than in economically developed countries. Wherever there are low standards of health and nutrition, poor housing and long and hard journeys to work these factors reduce the number of hours in which workers are sufficiently free from fatigue to be reasonably productive and tend to increase the amount of absenteeism; and this may strengthen the case for shorter hours. On the other hand, partly as a result of long hours and partly for other reasons, the pace of work is often slower in the less developed countries, and a tendency towards overstaffing (at least by the standards applied in the more highly developed countries) may reduce fatigue by lessening individual workloads. Where, however, output per week would fall with shorter hours of work, it appears that underdeveloped countries can less well afford to reduce hours of work and sacrifice output for more leisure, for most development plans call for increasing output as rapidly as possible in order to raise living standards and increase capital formation for economic progress.

It is widely agreed that, when existing hours of work are below about 48 per week, shorter hours would in most cases probably lead to some loss of weekly output. This is not regarded as an argument against reducing hours, which may be justified on other grounds, but as a reason for counting the cost of working shorter hours in terms of goods and services forgone, and balancing this against the gain in leisure. It is recognised that the most satisfactory length of the working week will not be that which yields the largest output of goods and services but that (perhaps substantially shorter) which results in the most desired combination of goods and services plus leisure.[1]

Where shorter hours would lead to a larger weekly output, society can, of course, have both more goods and services and more leisure. Shorter hours of work will then result in higher wages or profits, or both, and will make for a higher level of savings and investment and more rapid economic progress; there is then an irrefutable case for reducing hours of work.

The remainder of this analysis is concerned only with the situations—apparently more usual, at least in the more highly

[1] While, for purposes of regulating hours, it may sometimes be considered desirable to aim at a uniform normal working week throughout an economy, or throughout the greater part of it, it may be observed that the length of working week that yields the most desired combination of goods and services plus leisure seems likely to vary according to the arduousness of the work and the preferences of the workers.

developed countries—where a choice does arise between more goods and services on the one hand and more leisure on the other. This choice presents itself in all types of economies, irrespective of whether private enterprise or central planning predominates.

As has already been mentioned the relationship between output and working hours is further complicated by the fact that, even when there is no change in hours, there are other forces causing output to vary from year to year. Thus it is perfectly possible that a moderate reduction in hours may coincide in point of time with an increase in output which is not due to shorter hours and which would have been greater if hours had not been reduced, but which is due to other forces making for higher productivity independently of hours worked. In such a case the cost to be set off against the gain in leisure is not the difference between output before and after hours were reduced but rather the difference between present output with shorter hours and what the present output would have been if the longer hours had been maintained.

The growth of productivity presents society with a continually recurring choice between larger material incomes on the one hand and more leisure on the other. As a matter of history, all countries in which the standard of living has risen and hours of work have fallen over the last 150 years have adopted a combination of the two, with emphasis sometimes on one and sometimes on the other. The choice is not easy : more leisure is certainly desirable, but a larger material income raises individual standards of living and provides additional sources of public revenue that can be used for the financing of social services, defence needs and other collective requirements.

Though it is generally recognised that an alternative of this nature does face society as a whole, it is sometimes felt that the choice does not present itself to workers and their unions; or in other words that, if a demand for shorter hours with no reduction in weekly pay is conceded by employers, private or public, workers have achieved more leisure with no sacrifice of income.

Two points may be borne in mind in this connection. First, if shorter hours make for higher costs they also tend to make for higher prices. The maintenance of money wages does not guarantee that there will be no reduction in real wages. Secondly, in collective bargaining neither side usually gets all that it asks for. If shorter hours are won in a particular year, this may involve postponing demands for higher wages per week, improved conditions of work or other benefits. In this event the cost to workers of shorter hours may be not that they get less pay this year than last but that they get less pay this year than they might have had with longer hours. In actual fact, after the normal working week is shortened workers sometimes receive higher earnings instead of shorter hours because substantial overtime is worked.

Effects on Costs and Prices

If weekly output drops following a reduction in hours of work while weekly wages remain the same, unit costs of production are bound to rise unless other changes supervene. The extent of this rise will vary in different industries, depending on how much output per hour increases, if at all, when shorter hours are worked and on the cost structures of the various industries. Labour costs and capital costs per unit of production will be directly affected (since capital equipment will be less fully utilised unless there is an increase in the number of shifts worked). Other costs, such as those for materials and fuel, will not be directly affected by a reduction in hours in the industry concerned but may be affected by a nationwide reduction in hours.

Managements may find it worth while to introduce certain changes in equipment and methods of production that were not worth introducing before. By so doing they may be able, in part at least, to offset the tendency for costs to rise. Some changes may be of a kind that can be introduced at short notice ; others may require a longer time. In certain cases new machines may be installed, at some additional capital cost, to enable output to be maintained or increased despite the shorter hours. It seems doubtful, however, whether there will be any general tendency in this direction in view of the fact that, with shorter hours, capital equipment will be less fully utilised unless there is an increase in the number of shifts worked. If substantial changes are made in methods or equipment, new skills may be required on the part of operatives, maintenance men and supervisors, and the development of these skills may require training or retraining. All these things take time, and long-term effects on costs, as on output, may thus be less substantial than short-term effects. In many cases, however, any changes worth introducing in response to a reduction in hours of work seem likely to be slight or negligible : little more might be involved, for example, than keeping the works closed on Saturday mornings, work on other days proceeding much as before.

Among other things, shorter hours may have some tendency to encourage the introduction of two, three or four shifts in place of one, two or three, because machines would otherwise be less fully utilised than before, because managements are likely to be on the look-out for ways of reducing costs and increasing output, because with shorter hours it may be easier to fit in an extra shift, and because the dislike that most workers have for shift-work may be lessened if shifts are shorter. Where overhead costs are heavy and where the necessary labour and materials for working additional shifts are available, unit costs can be reduced considerably by spreading overheads over a larger number of units of output. The case for increasing the number of shifts may be particularly strong in some underdeveloped countries where there is surplus unskilled labour and some tendency to over-staffing, but at the same time a serious shortage of capital. In these conditions a policy of shortening hours of work, if it also resulted in some extension of shift work and greater utilisation of available capital, might tend to increase output and to promote economic progress. It is important, however, not to underestimate the difficulties that may arise in adopting multiple shift systems. More skilled labour and supervisory personnel will be required in firms operating on multiple shifts and in many underdeveloped countries there is a shortage of these categories of staff. There may also be a lack of transportation facilities for workers on night shifts, and of recreation facilities during their leisure hours.

Sometimes the prospect of a reduction in output and a rise in unit costs as a result of shorter hours may stimulate managements to introduce improvements that would have been worth introducing before but were not previously introduced for various reasons. Already existing but unrealised opportunities for increasing productivity are no doubt substantial in all countries, especially among less enterprising firms and, wherever this is so, it is very possible that a determined effort to raise productivity may more than offset any unfavourable effects of shorter hours on output and costs. A rise in wages or in taxes, or anything else which threatens the financial stability of a business and administers a shock and a spur to management, may have an effect similar to that of a reduction in hours in stimulating greater efficiency.

The smaller supplies and higher costs that may result from shorter hours are factors which in turn tend to make for higher prices. Some prices are likely to be less affected than others, depending not only on differences in the extent to which costs of production are raised in different industries but also on differences in the elasticity of demand for different products in response to price changes, the price policies and profit margins of producers in different fields and the nature and extent of competition or monopoly prevailing in different markets. In centrally planned economies it will be a matter for the authorities to decide whether higher costs should be reflected in higher prices ; but if prices are not raised, some other means will have to be adopted for restricting the consumption of any goods that may be produced in smaller quantities than before as a result of introducing shorter hours.

Once again, as in the case of all other effects considered, it may be borne in mind that the tendency towards higher prices will be no more than a tendency. If other factors affecting prices change at the same time as hours are reduced—if, for example, productivity increases or the costs of raw materials drop—the tendency towards higher prices may be more than offset.

Effects on Real Wages, Profits and the Returns to State Enterprises

It has been assumed throughout this article that hours are reduced with no reduction in money wages per week. In these conditions the immediate impact on real wages depends only upon what happens to prices. Only if prices do not rise at all will workers suffer no loss of real income.[1] If prices rise, but not by the full extent of the increase in hourly wages, workers' real earnings per week will go down, though their real earnings per hour will still go up.

It is also of interest to inquire whether a reduction in hours of work will make it easier or harder for workers to secure wage increases in the future. Higher hourly wages are likely to reduce the demand for labour, and for this reason to make it more difficult to secure wage increases. On the other hand there will also be a reduction in the number of hours of labour supplied, unless the reduction in hours leads to an increase in the number of workers seeking jobs.[2] This seems unlikely, though it might occur to some extent if hours were to be reduced considerably below those currently prevailing. For example, a good many married women might be able to manage, say, a 30-hour week but not a 40-hour

[1] In some countries workers receive a substantial proportion of their real income in the form of social services. There may be some reduction in this element of workers' income (at least as compared with what they might have received if hours had not been reduced) even if there is no rise in prices, for a smaller output with an unchanged wage-bill may reduce the capacity to finance social services (as compared with what could have been financed if hours had not been reduced).

[2] Changes in the demand for or supply of labour are not always very directly or immediately reflected in collective bargaining or in procedures for governmental regulation of wages. It is, however, a common experience that, in respect of jobs for which the supply of labour is large in relation to the demand, collective bargaining usually gains less for workers than when the opposite conditions prevail. The same may be true when wages are fixed by governments or regulated in accordance with arbitration procedures prescribed by governments, for if wages are fixed at a level at which not all those who seek work can find it, unemployment will result, and most governments have tacitly or explicitly accepted responsibility for maintaining a high level of employment.

week in addition to household duties. A shorter week might also persuade more older workers to remain at work.

If trade unions did not insist, as in fact they do, on the maintenance of weekly earnings, the greater scarcity of labour normally resulting from a reduction in hours would, taken by itself, tend to help the trade unions to secure some increase in hourly rates. But if an increase in hourly rates has already occurred, as an automatic concomitant of the reduction in hours, the effects on wages of the greater scarcity of labour may be regarded as having already been approximately absorbed. When other factors remain unchanged, further wage increases are likely to be to some extent retarded if hours are reduced. Wages, hours, working conditions, paid holidays and other " fringe benefits " are closely inter-related elements in workers' standards of living and in employers' labour costs, and improvements secured for workers in any one direction, unless they lead to increases in efficiency and productivity, may make it more difficult to secure improvements in other directions.[1]

The effects on profits or the returns of publicly owned enterprises will depend upon the various previously discussed effects on output, costs, prices and wages. A reduction in output with unchanged weekly wages will squeeze profits or the returns from publicly owned enterprises unless higher costs can be passed on in full in the form of higher prices. It would seem that, other things being equal, the more widespread the reduction in hours of work—i.e. the less those producers who have reduced hours are exposed to competition, direct or indirect, from others who have not done so—the easier it will be to pass on cost increases in the form of higher prices.

Effects on Employment

An argument frequently advanced in favour of a reduction in hours of work is that it will spread a given amount of work over a larger number of workers and so help to maintain full employment. There is today growing confidence that, in the more

[1] Cf., for example, the following extract from a statement issued by the Swedish Federation of Trade Unions in *L.O. Pressinformationen*, Vol. III, No. 12, Dec. 1954 : " The Swedish workers are fully aware of the fact that they are dependent upon the development in the economic life of the country. They know that one may count upon a yearly increase in the yield from the general productivity, and that, therefore, they can attain an improvement in their standard of living, through their trade unions. The workers, however, must now decide whether this improvement shall be achieved through social measures, through higher wages, or through shorter working hours. To imagine that all this can be obtained at one and the same time would be purely wishful thinking."

advanced industrial countries, full employment, or a level of employment approximating thereto, can be maintained by other means—notably by measures to maintain the level of demand, including appropriate monetary and fiscal policies, and by improvements in the organisation of employment markets. Those who accept this view, and thus believe that these countries can have full employment whether or not hours are reduced, will be inclined to maintain that the case for shorter hours is not affected by this argument—that the working week should be fixed at that length which yields the most desired combination of goods and services plus leisure and that full employment should be maintained by means other than a reduction in working hours if this is not, on balance, desired on other grounds. But, even to those who are confident that full employment can be maintained by other means, it is of some importance to consider whether it would be easier or harder to maintain it with shorter working hours ; and to those who do not share this confidence the question is of even greater importance.

This difficult question cannot be discussed exhaustively here. The assumption that there is no reduction in the weekly money wages of those in work when hours are reduced rules out the possibility that a given amount of work may simply be spread over a larger number of workers with no additional costs to employers. If additional workers are taken on this will represent an addition to costs.

The number of hours of work in the aggregate which corresponds to a state of full employment is reduced if normal hours of work are reduced.[1] If the aggregate number of hours actually worked declines in the same proportion as normal hours are reduced (for example, if there is a 10 per cent. reduction in each), the effects on employment may be said to be neutral in the sense that there will be neither more nor fewer employment opportunities for workers not previously employed. If the aggregate number of hours of work actually performed falls off by a smaller proportion than the reduction in normal hours, this means that there will have been a movement in the direction of fuller employment—either more overtime for previously employed workers or less unem-

[1] For example, in a country with 1 million workers, in which the normal hours of work are 44 per week, an aggregate of 44 million hours would in any week correspond to a state of full employment. If the normal work-week is reduced to 40 hours, an aggregate of 40 million hours of work per week will correspond to a state of full employment. (Making allowance for a certain amount of unavoidable " frictional " unemployment, it might be more realistic to say that slightly lower figures would correspond in practice to a state of full employment, without inflation, but the proportion between the two figures would remain the same.)

ployment. If the aggregate number of hours actually worked falls off by a larger proportion than normal hours are reduced, or tends to do so in the absence of government intervention, the effects on employment will have been unfavourable.

It would seem that any of these three things may happen, depending on how the demand for and supply of labour are affected. It has been argued in the previous section that the initial effect of a reduction in hours with no change in weekly wages will be a reduction both in the number of hours of labour demanded and in the number supplied.[1] While there is no reason why these two effects should be of equal magnitude, they would at least work in opposite directions. In many cases they might tend approximately to cancel each other out, leaving the effects on employment approximately neutral in the sense defined above. In cases, however, where the demand for labour fell off to a greater extent than the supply, effects on employment opportunities would be unfavourable, and in cases where the demand fell off less than the supply there would be an increase in the number of employment opportunities as compared with the number of workers seeking jobs. It does not seem possible to say, in general, which of these two effects is more likely. Given the extent of the reduction in hours, the outcome will depend upon the elasticity of the demand for labour in response to the increase in hourly wages accompanying the reduction in hours—a matter on which there have been few studies from which general conclusions can be drawn.[2] The elasticity of demand for any particular type of labour will depend, among other things, on the elasticity of the demand for the particular product concerned and on the proportion of the cost of that type of labour to total costs of production. Plasterers' wages, for example, representing only a small part of the cost of housing construction, the demand for plasterers is likely to be less elastic than that for, say, weavers.

[1] By workers already in employment or seeking jobs. However, if hours were considerably reduced there might be some increase in the supply of labour from persons who would otherwise remain outside the labour force (e.g. married women or elderly workers).

[2] Mention may, however, be made of two studies of the elasticity of demand for labour in the United States. In a pioneering statistical study Paul H. Douglas concluded that the demand for labour in manufacturing industry in the United States was elastic (i.e. would fall off considerably in response to a rise in wages). (See *The Theory of Wages* (New York, Macmillan, 1934), pp. 113-203.) Douglas's study has, however, been the subject of some criticism on technical grounds, and some recent analysis of data not available at the time of his study is held to indicate that the demand for labour is inelastic for the United States economy as a whole (see Stefan Valavanis-Vail : " An Econometric Model of Growth : U.S.A., 1869-1953", in *Proceedings of the American Economic Association*, 1954, pp. 208-222). The whole subject requires much further study.

It is sometimes suggested that shorter hours accompanied by greater leisure are likely to lead to a considerable increase in the demand for the goods and services utilised during leisure hours—such things, for example, as travel, television sets and sports equipment—and that a growth in the demand for these things is likely to have favourable effects on employment. It is necessary, however, to consider whether such a development, if it occurs, represents a net addition to aggregate demand or a diversion of demand from other things. If workers, with the same money wages as before, spend more on leisure-time pursuits they must either curtail their consumption of other things or reduce their savings. Since most workers in most countries are not able to save substantially, it would seem that the major effect would be a shift in demand rather than a net addition to demand. In this case the net effect on employment would depend upon a comparison between the employment capacity of the expanding industries and that of the industries that were found to contract (or which, in a generally expanding economy, expanded less than they otherwise would have done). If there is a shift in the direction of demand there may be some frictional unemployment due to difficulties in adapting the labour force to this shift.

If, as a result of shorter hours, workers previously able to save part of their income were to increase their expenditure on leisure-time pursuits at the expense of savings, there would indeed be an increase in aggregate demand, assuming that the expenditure of other sections of the community were maintained. Except perhaps in the countries with the highest incomes per head the magnitude of this effect would seem unlikely to be very great, but it would tend to increase employment opportunities—directly in the production of consumers' goods and services, and perhaps indirectly, too, in the production of equipment to make the additional consumers' goods. This might afford a useful stimulus to employment at a time when aggregate demand tended to fall short of supply at prices ruling, but at other times would tend to generate inflationary pressures. The problem of maintaining full employment without inflation falls outside the scope of this article but is, of course, one of the main preoccupations of all who are concerned with national employment policies.

On the whole it seems reasonable to conclude that, in many cases in the more highly developed countries at least, a reduction in hours would not, in itself, exert any very marked influence in either direction on the total number of persons employed. This may not be true in some underdeveloped countries, but the main special problem of underdeveloped countries in this connection can more conveniently be discussed in the next section.

Effects on Savings, Investment and the Long-Term Growth of Productivity

It has been suggested above that shorter hours, like higher wages, may sometimes stimulate managements to greater efforts to raise productivity. This would be mainly a short-term effect, though the results of such efforts might be cumulative. In the long run the rate of growth of productivity, though it depends on many other things as well, depends very largely upon the rate of investment.

It is sometimes argued that, to the extent that shorter hours lead to a rise in labour costs as compared with capital costs [1] and thus provide an incentive to substitute capital for labour in production, they will lead to an increase in the rate of investment and thus tend to speed up the growth of productivity. If, however, profits are adversely affected, new investments may appear less attractive and it may also be more difficult to set aside or borrow the funds required.

Perhaps a more important consideration is that, while increased investment in any one industry is always possible at the cost of diverting new capital from other industries, the rate of investment in an economy as a whole is limited by the rate of saving [2] (allowance being made for the extent to which it may be possible to obtain capital from abroad). And there are reasons why a reduction in hours of work may tend to reduce total net savings.

One argument has already been mentioned—namely that more leisure means more time to go shopping, to go to the cinema or to spend money in other ways : the mere fact that people have more leisure may lead them to spend more and save less out of a given income. On the other hand, it also gives them more time for such pursuits as, e.g., growing their own vegetables and carrying out their own minor household repairs. Different views may be held as to which of these two sets of considerations will predominate.

A more decisive argument is that, out of a smaller total national income than might otherwise have been produced, people are

[1] Shorter hours do not, however, always have this effect. See p. 33 above.

[2] It is sometimes argued that money to finance additional investment can always be made available, whether or not such money represents real savings. If there is less than full employment and if this can be attributed to a deficiency in aggregate demand, it is widely held that additional investment, financed in the first place by expanding the quantity of money, will generate increased income, out of which will come additional savings to balance the new investment. Where there is already full employment, however, it is generally agreed that expansionary monetary policies will not in themselves make for an increase in real income but will only push up prices.

likely to save less. Moreover, if national income in the year following a reduction in hours is actually less than it was in the previous year, this new level of income may be expected to carry with it a particularly low level of savings, because of the difficulty people experience in cutting down consumption when their incomes are reduced. It is now widely accepted that a given level of national income is likely to be associated with different levels of savings depending upon whether the previous year's income was higher or lower than present income. The amount of saving associated with a given level of national income also depends on how the national income is distributed. Those with larger incomes are usually able to save not merely a larger amount but also a larger proportion of their income. To the extent that workers' real incomes are maintained, shorter hours may result in lower profits or lower returns for state-owned enterprises, less income for the upper income groups or for the State, and therefore less saving, unless special measures are taken to mobilise savings from the lower income groups.

These considerations suggest that, when choosing between more income and more leisure, a community should allow for the probability that some of the material goods it may choose to give up in exchange for more leisure will be capital goods that would have made its work more productive in the future.

This consideration is of special importance in underdeveloped countries that have a surplus of manpower and a shortage of capital. In these countries not only the rate of growth of productivity but also the rate of growth of employment opportunities appears to depend very largely on the rate of capital formation. It is a generally accepted view that a major cause of the widespread unemployment and underemployment in these countries is that there is not enough capital to provide the equipment and tools needed if productive employment is to be available for all who seek work at wages at which they are willing to work. In these countries, as in other countries, employment may not be greatly affected one way or the other in the short run by a reduction in hours of work; but in the long run shorter hours, if they retard the rate of capital formation, seem likely to check the growth of employment opportunities. On the other hand, if shorter hours were accompanied by an increase in the number of shifts worked, this would have a favourable effect on employment, enabling the existing stock of capital to provide more jobs.

It may be borne in mind that a reduction in hours of work need not result in any reduction in savings or investment if steps are taken to limit or to reduce consumption. This could be achieved, if it were considered desirable, in a variety of ways, of which perhaps the most effective would be high rates of taxation and substantial budget surpluses. The desirability of such a substitution of public for private savings is, however, a matter of public policy that cannot reasonably be settled merely as a secondary issue of the community's choice between income and leisure.

THE IMPACT OF REDUCTIONS IN HOURS OF WORK ON DIFFERENT INDUSTRIES

An equal reduction in hours of work will not affect equally all industries or all firms in any one industry. Effects will vary, *inter alia*, according to whether and how far hourly output increases when hours are reduced; the cost structure of different industries and firms; the opportunities existing for counteracting any tendency towards higher costs by adapting methods of production to the changed conditions and the vigour of management in grasping these opportunities; and the extent to which it is possible or profitable to pass on cost increases in the form of higher prices, this in turn depending upon the elasticity of demand and the rate of growth of demand for various products.

Thus, even an equal reduction in hours of work throughout an economy would affect costs and prices differently in different sectors. In a private-enterprise economy the consequent changes in relative prices would tend to lead to changes in the structure of production—particularly to some shift of resources out of industries producing things that had become relatively dearer into industries producing things that had become relatively cheaper. In a centrally planned economy, too, though effects on prices would depend on decisions by the planning authorities, if real costs of different goods were differently affected, some shift in the structure of production would be appropriate if it were desired to make the most productive possible use of available resources. Changes in the structure of production due to changes in relative costs, like those due to possible shifts in demand of the kind discussed above [1], might give rise to certain transitional difficulties. Even in an economy that maintains a high and stable level of aggregate demand pockets of frictional unemployment might tend to appear; or, if there were a national policy of keeping all workers employed at all times, workers in some state enterprises might be engaged in producing more of certain products than were required by the economy. But these transitional difficulties may be considered as costs of progress, to be minimised by such means as appropriate action through employment exchanges, retraining facilities and unemployment insurance.

[1] See p. 39.

Effects on Balances of International Payments

Effects of a reduction in hours of work on the balance of payments of any one country are likely to depend in part upon whether or not action is at the same time taken to reduce hours in other countries, and if so what form of action is taken. Concerted international action to reduce hours of work might take a variety of forms, of which two are perhaps of special interest, viz. *(a)* action to reduce hours to a uniform length, and *(b)* action to reduce hours by a uniform percentage.

If a single country were to introduce shorter hours, hours in other countries remaining the same, that country might experience difficulties in competing in export markets and in paying for its imports, unless productivity was rising more rapidly there than in other countries; this explains why in the United States it has been possible to reduce hours below those normally prevailing in other countries.[1]

If concerted action were to be taken by a number of countries to reduce hours to a uniform length, some countries would have to reduce hours much more than others and, vis-à-vis those countries which reduced them little if at all, might find themselves exposed to the same kinds of difficulties as under a "unilateral" reduction of hours.

Even under an agreement to reduce hours by a uniform percentage it would be impossible to be sure that there would be no balance-of-payments difficulties. The effects of a uniform percentage reduction would vary from country to country just as they vary from industry to industry and from firm to firm in any one country. Moreover, especially in the case of a country depending heavily upon a few export industries, the effects on its export industries might be different from the average effects on all its industries taken together, so that its export prices might tend to rise or fall as compared with its general price level and the export prices of competing countries. But, on the whole, concerted action to reduce hours by something like a uniform percentage would seem to be the most promising means of avoiding balance-of-payments difficulties.

Even if some such difficulties were to be expected this would not, in itself, constitute a decisive objection to reducing hours of work

[1] Devaluation of the country's currency might provide a way out of the difficulty, at the cost (probably) of raising prices to domestic consumers; but it is very doubtful whether any reduction in hours that could realistically be contemplated would, of itself, give rise to difficulties of sufficient magnitude to justify recourse to a measure usually considered drastic. Differences in hours of work as between countries constitute only one among many elements influencing international competitive strength.

if that were considered desirable on other grounds. Balance-of-payments difficulties can be overcome through changes in the structure of production and the pattern of international specialisation, though such changes are liable to encounter frictional and transitional difficulties of the kinds referred to above, and the time factor is important. It may be difficult to bring about substantial shifts in the structure of production rapidly enough to prevent exhaustion of gold and foreign exchange reserves.

Conclusion

An attempt has been made in this article to trace the probable effects of shorter hours of work on output, costs, prices, wages, profits (or the earnings of state enterprises) and employment, and to suggest certain other possible consequences. Little has, however, been said about the magnitude of such effects, which are likely to vary considerably from country to country, from industry to industry, and even from firm to firm. In the present state of knowledge it is difficult to generalise, but it would seem that, if output were to be substantially reduced as a result of a reduction in hours, the effects analysed above might be substantial also. If, however, output were only slightly affected these other effects, which would be to a large extent consequences of a reduction in output, would in general be correspondingly reduced in importance and would often be offset or more than offset by other forces simultaneously but independently affecting costs, prices, wages and profits.

In individual cases, where there may be a combination of unfavourable circumstances, even a moderate reduction in hours of work may give rise to considerable difficulties. Thinking in terms of an economy as a whole, however, it may be easier to see the probable effects of a reduction in hours in perspective if it is remembered that economies are at all times liable to be subjected to considerable shocks and disturbances—for example, substantial variations in agricultural harvests, fluctuations in the rate of investment and in prices, particularly of primary products, changes in exchange rates and shifts in the balance of payments and the terms of trade. The magnitude of the disturbances of these various kinds that can be absorbed, singly or in combination, without disaster makes it reasonable to suggest that in most normal circumstances it should not prove unduly difficult to absorb, without serious dislocation, the effects of a moderate reduction in working hours, provided it were agreed that the price, in terms of some loss of output, would be worth paying. Experience seems on the whole to confirm this.

The ease with which the effects of a reduction in hours of work can be absorbed will, however, depend not only on the extent to which output is affected but also upon the circumstances confronting the economy at the time the reduction occurs. Circumstances that would seem propitious include a favourable balance-of-payments situation; absence of inflationary pressure (i.e. a supply of goods and services adequate to meet the effective demand at prevailing prices); and occasions when crucial stages of economic development plans have been successfully implemented. Circumstances that are the converse of these—pressure on a country's balance of payments, too much money chasing too few goods, and crucial stages in implementing economic development plans [1] —would seem unpropitious for a reduction in hours.

[1] That is to say stages when it is especially urgent to maintain or increase the production of certain categories of goods, particularly capital goods, in order to prevent bottlenecks and preserve the necessary relationships between the different parts of the development plan.