# THE ECONOMIC RESEARCH INSTITUTE

## The Allocation of Public Funds for Social Development

by

DAVID WALKER

August, 1962

Paper No. 8

73 LOWER BAGGOT STREET, DUBLIN 2

# THE ECONOMIC RESEARCH INSTITUTE

## EXECUTIVE BOARD 1961-62



*This paper has been accepted for publication by The Economic Research Institute. The Author is a Senior Research Officer on the staff of the Institute.*

*Copies of this paper may be obtained from The Economic Research Institute, 73 Lower Baggot Street, Dublin 2, price 2/6 a copy.*

THE
ECONOMIC RESEARCH INSTITUTE

# The Allocation of Public Funds for Social Development

by

DAVID WALKER

August, 1962

Paper No. 8

4 Burlington Road Dublin 4

# The Allocation of Public Funds for Social Development

## *Note by the Director*

The main part of this Institute Publication consists of a paper entitled "The Allocation of Public Funds for Social Development" prepared by Mr. Walker at the request of the United Nations for a Conference organised by the United Nations Regional Social Affairs Office for the Middle East at Beirut, Lebanon in November 1961 on *Social Aspects of Development Planning in the Arab States.*

Mr. Walker had agreed to write this Paper before he joined the staff of the Institute but the final draft was written in August 1961 after he had taken up his present appointment.

Though the Paper was written for a Conference of delegates from Arab States, and though its shape and form is very much influenced by Mr. Walker's special knowledge of the development problems of Africa, I felt it had a great deal of relevance to the Irish scene and, therefore, asked the United Nations if it might be published as an Institute Paper. I am glad to say that permission was granted. I also persuaded Mr. Walker to write a Supplement so as to bring out some of the implications of the Paper with respect to Ireland. This Supplement follows the original Paper.

# The Allocation of Public Funds for Social Development.*

By DAVID WALKER

## 1. AN IMPORTANT SUBJECT

The problems with which this Paper is concerned are of considerable practical importance. In all countries governments are faced each year with the need to take decisions as to the extent to which they will expand social services at the expense of other forms of expenditure and with decisions how to allocate money within the overall social development allocation. Similarly, when it comes to drawing up a multi-year development programme the question is of crucial importance.

### Economic and Social Development

In recent years there has been a great interest in the relationship between economic and social development. A number of reasons have been responsible for this interest. One of the most important was the knowledge that during the period when the United Kingdom had its most rapid period of industrial advance in the first half of the 19th century this was associated with great misery and poor social conditions for a large number of the people. Countries about to have their own industrial revolutions wish to avoid repeating the U.K. experience. To some extent a similar fear was caused by the poor conditions in many of the Russian towns and villages during their period of rapid economic advance in the inter-war years.

A second reason is the appreciation that in many cases economic development can be held back by aspects of the social structure, that there are social impediments to economic growth and that if economic growth is to take place in a rapid manner action on the social front is necessary so as to eliminate these constraints. Particularly since the end of the war it has become appreciated that if economic development in a country is to be rapid, fruitful and sustained its social institutions must be geared and attached to such growth. The society must want economic growth and be able to adapt itself to the demands upon it that growth makes; it must be willing to adopt and support new techniques and procedures. And just as it became clear that certain types of social institutions, traditions and behaviour could be barriers to economic development so it began to be appreciated that by certain actions in the field of social policy and expenditures these institutions, traditions and behaviours might be modified in ways beneficial to growth.

A third factor was the knowledge that a high level of social services and development is just not possible in a society with low *per capita* incomes. A developing economy is needed to provide the resources for a country to have social development.

### Need for Decisions

It was pointed out above that each year governments have to make important decisions concerning social expenditures. There are two main reasons why such decisions have to be made and are important. First, because the resources available both to the government and to the country as a whole are limited. If there were unlimited resources then there

*This Paper was circulated by the United Nations Regional Social Affairs Office for the Middle East in English, French and Arabic as Document AS/SADP/WP2 in October 1961.

Though the Paper was prepared at the request of the U.N. Secretariat and made use of its 1961 *Report on the World Social Situation* as a background document the views contained in it represent the personal views of the author and are not necessarily those of the U.N.

Only minor changes have been made here to the version circulated by the U.N. In addition to purely verbal changes Sections I and IV have been shortened. There have been no changes of substance. It follows that it retains its original shape and look as a Paper designed for a particular occasion: no attempt has been made to provide references and there is considerable use of the first person and of phrases perhaps more suitable for verbal delivery. The footnotes have been added.

In reading the Paper it must be remembered that the Conference had before it a number of Papers dealing, though from rather different angles, with the same set of problems. The following are the titles of the other main Conference Papers:—

The Organizational and Administrative Aspects of Development Planning;
Development Planning in the Arab States;
Social Research for Development Planning;
Social Aspects of Economic Development in the Arab Countries;
Employment Policy and Economic Development Planning.

would be no economic problem, no problem of the allocation of scarce resources between alternative and competing ends. Since resources are not unlimited there is such a problem. And the poorer the country the greater the need for a correct allocation of resources. A rich man can afford to waste resources ; so can a rich country. Poor people and poor countries cannot afford such waste.

The following figures may illustrate the dilemma of some of the poorer countries :—

| Country | Education Expenditure as a % of Total Government Expenditure (About 1958) | Education Expenditure as a % of Gross National Product. (About 1958) | Expenditure on Education *per capita* $ U.S. |
|---|---|---|---|
| U.K. .. | 13 | 4 | 70 |
| U.S.A. .. | 12 | 4 | 96 |
| Uganda .. | 18 | 4 | 3 |
| Tanganyika | 19 | 3 | 2 |

It is clear that the two African countries are devoting higher proportions of their public expenditures to education and a similar proportion of their National Resources. In no sense could it be argued that they are not giving proper emphasis to education. Yet the final column of the table shows how because of their poverty their effort yields a small return in terms of resources available per head of the population. Now if the wages of teachers etc. in Uganda and Tanganyika were the same percentage of *per capita* incomes as in U.K. and U.S.A., these low *per capita* expenditure figures would not necessarily mean that less real resources were available. However, this is not the position. In fact, salaries and costs generally tend to be drawn up to the U.K. and Western European level. Thus the ratio between educational costs and *per capita* incomes is much higher in Uganda and Tanganyika than in U.K. and U.S.A., and thus the differences in the final column of the table do, to a substantial extent, represent differences in the resources available for education.

The second reason arises out of the decision of so many governments to-day to take positive and effective action to increase the rate of economic growth and to improve the social conditions of the people. If governments were committed to a policy of completely free enterprise and *laissez-faire*, then they would not have to take decision on these matters. But for good or bad reasons governments have decided to accept a considerable measure of responsibility in these fields and, therefore, they have to take these critically important decisions. And planning concerning such expenditures is especially important for their effect is so far-reaching. Nowadays it may take only a few months to build a factory or a few years to construct a large dam or railway. But it may take many years to train an engineer or a doctor. It also takes a long time to train teachers be they for the primary schools or the universities, particularly if the teachers of the teachers have first to be trained ! Action in the medical sphere, too, has effects stretching many years into the future. There is thus need for careful planning if scarce resources are not to be wasted.

## 2. BELIEF IN ECONOMIC PROGRESS

Up to the Second War economists (from Smith to Keynes) tended to believe that Economic growth even in the most developed parts of the world would tend through time to slow down and eventually come to a standstill. The basis of the argument underlying this belief was that as capital increased, probably relatively to labour and certainly to land, the rate of profit on capital would fall, and as there were strong monetary reasons why the rate of interest could not fall below about 2 per cent., investment would eventually become unprofitable and net capital formation would come to an end. Though there were always some economists who argued against this view—Alfred Marshall being a notable heretic—a belief in the *eventual* arrival of a Stationary State was commonly if not generally held.

From a rather different line of thought and one much influenced by the heavy unemployment of the 1930's came the so-called "stagnation thesis" which in the form in which it was set out in the late 1930's by Professor Alvin Hansen of Harvard came to be widely accepted by American economists. Hansen contended that population growth, the opening up of the frontier and everything else which had kept the American economy dynamic and growing in the past had come to an end by the 1930's and that any additional capital formation must, therefore, tend to reduce the rate of profit and bring about a very low rate of investment and economic development.

In contrast to these rather pessimistic views the general attitude of economists to-day concerning the long run economic development of the richer countries of the world is one of very considerable optimism. There is a belief in the continuation and, perhaps, almost the inevitability of economic progress and the main reason for this change in outlook is a conviction concerning the continuation of technical advance and of the ability of the economy to absorb and utilise such developments.

With the belief in the possibility of more or less automatic progress there has been a shift in emphasis amongst those concerned with thinking about the factors important in economic growth : from an

approach which stressed the importance of directly increasing the stock of capital assets to one stressing the importance of having or creating a type of society which will normally and fairly automatically invest a reasonable proportion of its income in such assets and be able to maintain the rate of return on capital by making and effectively utilising technical advances.

This capacity to create wealth resides primarily in the people of a country and consists of brain power and the other human attributes of enterprise, drive, perseverence, diligence and inventiveness. In the last analysis development depends on people, for individual men or groups of men are the active element in exploiting the raw materials of a country in developing old and starting new industries, and in seeking markets, capital and the other ingredients necessary for growth.

A number of factors have led to this rather new belief in the crucial importance of man power. One was the speed with which war-devastated Germany recovered and became again one of the leading industrial countries. It is true that Germany received a good deal of financial and other help from America and elsewhere but even so the rapidity of her recovery was almost unbelievable given the appalling destruction of her physical capital assets. The German experience seemed to provide excellent evidence of the importance of having the innate human capacity to create wealth; with such a capacity the re-construction of the physical capital of the country was a relatively easy matter.

The recovery of the U.S.S.R. and Japan from the war was similar to that of Germany and suggested the same conclusion. And, on the other hand, there have been a number of countries in the post-war period in which very large sums of money have been spent and considerable quantities of physical assets accumulated without the economies of such countries developing the characteristics of what Professor Rostow calls "self-sustaining growth".

There is, too, a certain amount of evidence which suggests that education in particular is one of the main prerequisites required for the movement forward into "self-sustaining growth". Interesting historical cases are Japan and Denmark which though lacking in natural resources compared with their neighbours went ahead of them during the 19th Century in an economic sense. In each case the level of their educational achievement was a good deal ahead of their neighbours.

Another reason for the tendency to emphasise the importance of people and to play down somewhat the importance of tangible capital has been the results of a number of historical and statistical studies that have been carried out in recent years concerning the relationship between the growth of capital and labour and output. These studies were undertaken in part as a normal development of national accounting research but were also stimulated by the desire to test and assess the validity of some of the theories of economic growth which placed primary emphasis on the role of capital.

## 3. GROWTH THEORY

Following the Keynesian discussions of the 1930's with its great emphasis on the key place of the level of investment or capital formation in determining the level of economic activity and employment, two economists, Professor Domar of America and Sir Roy Harrod of the U.K. reformulated the main elements of Keynesian short-period employment theory into a theory of growth; stressing that the crucial elements in determining economic development were (*a*) the proportion of the national income saved at the full employment level of output and (*b*) the increase in output capacity resulting from an increase in the capital stock.

The Domar/Harrod ideas rapidly captured the field and many economists and through them civil servants and politicians came to see the whole complicated process of economic growth as being the product of two key parameters, the full employment savings ratio and the capital/output ratio.

Many simple calculations have been done making use of this approach: that a capital/output ratio of 4 and a 10 per cent. savings ratio will produce an increase in national output of 2·5% per year and a 15% savings ratio a growth rate of 3·75% per year. Or again: a capital/output ratio of 3 will produce a growth rate of 3·3% per annum if there is a 10% savings ratio, and a 5% growth rate if there is a 15% savings ratio.

The above growth rates are aggregate rates. If the population is growing they have to be reduced by the population growth rate in order to calculate *per capita* growth rates. Again much arithmetic has been done. Assuming that the population is growing by 2·5% per annum it is clearly possible to calculate the savings/investment ratio that would be required to maintain *per capita* incomes; or obtain a given growth rate in such incomes if the capital output ratio is known. Alternatively, it would be possible to calculate the required capital output ratio to obtain particular *per capita* income growth rates if the savings/investment rate was known.

The use of capital output ratios as a key planning and forecasting tool in underdeveloped countries is however a somewhat hazardous undertaking for little research has been done on their long run magnitude or short run stability. Certainly there is little

evidence to suggest that it is possible to predict confidently the growth—if any—in output that is likely to follow from given increases in the capital stock.

One of the effects of the development and popularisation of the Harrod/Domar approach was to give the impression that capital was *the* key factor in economic development and that the building up of more capital assets would produce higher and higher rates of economic growth.

Now, if pressed, protagonists of such a view would agree that it was possible for capital expenditures not to be productive; that a factory may be constructed to produce goods for which there turns out to be no demand, or a railway may be built across a swamp without the foundations being made sufficiently strong to carry a fully loaded train, or a road may be built without sufficient depth of concrete to withstand heat and cold.

For such reasons, it would be admitted, capital expenditures may be abortive and resources devoted to such activity wasted but it would be argued that such possibilities are quite exceptional.

Similarly, if pressed, it would be admitted that other factors besides increases in the capital stock are important as regards economic development. Nevertheless the whole tendency of the Harrod/Domar approach—particularly when taken over by politicians, civil servants and planning boards—is to focus attention on the rate of spending on the creation of tangible fixed assets.

## 4. FOUR STATISTICAL STUDIES

I should like now to refer quite briefly to four statistical studies that have been made in recent years which have tended to play down the importance of the role of physical capital formation in economic growth.

First, there is the work done at the United States Bureau of Economic Research (summarised in Solomon Fabricant, *Basic Facts on Productivity Change*, National Bureau Occasional Paper, No. 63) which suggests the following position with respect to the United States economy. Between 1919 and 1957 the private sector of the United States economy increased its output by 3·1% per annum. The labour force (weighted man-hours) increased by 0·8% per annum. Capital (weighted tangible capital) increased by 1·8% per annum. Aggregating the inputs of capital and labour total inputs increased by 1·0% per annum. Fabricant estimates that only about one third of the increase in output of 3·1% per annum could be explained by these increases in inputs and, of course, a much smaller fraction by the input of capital alone. A similar, though not such a pronounced relationship was found to exist, for the earlier period from 1889 to 1919. During this time total output went up by 3·9% per annum, labour inputs by 2·2% per annum, capital inputs by 3·4% per annum and—aggregating—total inputs by 2·6% per annum. For this period Fabricant suggests that about 1·3% per annum of the 3·9% growth rate could not be explained by increases in inputs. The U.S. material, therefore, indicates the existence of a fairly large gap between the rate of growth of income and the rate of growth of inputs.

A recent United Kingdom study (*Progress in British Manufacturing Industry*, 1948-1954, W. B. Reddaway and A. D. Smith, *Economic Journal*, March 1960) suggests a similar situation. Over the whole range of manufacturing industry it was found that output had increased by 33% and inputs of labour and capital by 13% and 28% respectively. Reddaway and Smith suggest that only about 20% of the 33% increase in output can be explained by the increase in inputs leaving some 13% of the total—or about 2% per annum of the overall growth rate over the six year period—to be explained by some other (unspecified) factors.

The third piece of research relates to Norway. Dr. Odd Aukrust and his associates (O. Aukrust and J. Bjerke, Real Capital in Norway, 1900 to 1956, *Income and Wealth*, Series VIII, and *Investment and Economic Growth*, a study prepared for the Meeting of Economists of the Five Nordic countries, Copenhagen, 1958) have shown that since 1900 the capital stock increased by 2·4% per annum, employment by 0·8% per annum and output by 2·5% per annum. As in the U.K. and the U.S.A. output increased at a faster rate than inputs of factors of production; in their view about 1·8% per annum of the overall growth rate of 2·8% per annum was unexplained by the growth of factor inputs. Examining in detail the 1948-1956 period they found that though the overall growth rate had been 3·4% per annum only some 1·6% per annum of it could be explained by increases in factor inputs—some 0·5% per annum by increases in the labour force and 1·1% per annum by increases in the capital stock—which left some 1·8% per annum which could not be so explained.

Finally, I would like to refer to a recent publication by Colin Clark (*Growthmanship*, Hobart Papers, No 10, Institute of Economic Affairs, 1961). In this Paper Clark analyses a great deal of data concerning a number of countries relating to the connection between rates of growth of output and rates of growth of inputs—particularly capital. One of his conclusions was that there tended to be a substantial gap between the overall growth rate and what could be explained by increases in inputs; in broad terms about 1·3% per annum of the overall

growth rate seemed to be unexplained in this way.

A rate of 1·3% per annum is a substantial contribution to the growth of output in comparison with the effects likely to flow from changes in the capital stock. Clark's analysis suggests that a 1% increase in the capital stock tended to increase the level of output by 0·5%. Now to get an increase in the capital stock by more than about 5% per annum and thus produce a growth rate of 2·5% per annum would require a very considerable effort. If the average capital output ratio was 4 it would require a net investment rate of some 20% of National Product. Even if the capital output ratio was 3 a net investment rate of 15% of National Product would be required. A more normal rate of net investment would be about 10% of National Product. Such a ratio would tend to produce a 1·25% growth rate with a capital output ratio of 4 and a 1·65% rate with a capital output ratio of 3*.

The upshot of these statistical studies is to throw doubt on economic theories which stress the paramount role of physical capital in economic growth and, *a fortiori*, to suggest that there are other important explanations and key determinants of growth.**.

## 5. PRODUCTIVITY AND THE "UNSPECIFIED FACTOR"

A correct measurement of productivity requires a comparison of output with the combined use of all inputs i.e. capital, labour, entrepreneurship, land, natural resources, etc. This tends to be impossible because of lack of data, and normal practice (which was followed in the studies we have just noticed) is to relate output or product to the weighted input of labour and capital—the two factors for which measurements tend to be available; the weights being determined by the share of the output accruing to them in a particular base year.

The difference between the movements of the real output index and the real input index then reflects changes brought about by factors other than changes in the quantity of capital and labour inputs.

There are many of these but two would appear—though not, of course, from the statistical analysis itself—to be particularly important, namely changes in technology, or in the quality and effectiveness of capital, and changes in the quality or effectiveness of the labour force (taken broadly so as to include entrepreneurs) due to workers being healthier, or better trained, fed and educated, or more keen and enthusiastic concerning their work and economic growth.

In the last resort improvements in the quality and effectiveness of capital are dependent upon the skill, initiative and inventiveness of the labour force. What is being suggested therefore is that the effects of the "unspecified factor" (i.e. that which is responsible for the proportion of the increase in output that cannot be explained by the increases in the output of capital and labour) are to a considerable extent the effects of changes in the quality and efficiency of the labour force.

Moreover it seems likely that this can be influenced by the amount of a country's resources that are devoted to it i.e. to education, medical care and training in the widest sense. If this should be so it follows that in certain circumstances it may be better from the point of view of economic development to devote resources to "human investment" rather than to investment in tangible assets.

Aukrust, after noting that very high rates of physical capital formation in Norway have not yielded a high rate of growth rate, states the issue as follows (page 113, *Income and Wealth*, VIII.): "One question which naturally arises in this connexion is whether the trend factor here termed "technique" is itself an invariable or whether it can be influenced, for example, by placing more emphasis on the education of efficient managers, technicians, and workers. This is an interesting and important question. If the answer is positive, the low effect of the rate of tangible investment gives a hint that a higher rate of growth could possibly be obtained by releasing resources now devoted to investment for a greater effort in education and research."

There are, of course, other elements affecting the "unspecified factor". One is the operation of the forces summarised in the phrase "returns to scale". As a country grows it may become possible to supply certain services e.g. educational, transport

*Another way of illustrating the relatively small extent to which capital investment taken by itself is likely to influence the overall level of output is to consider the marginal efficiency or productivity of such expenditures. If it is assumed that the average return on investment is 10% and that net investment is about 15% of net national product—and these are by no means low figures for any economy—then the direct increase in national income resulting from such expenditures will only amount to about 1·5 % per annum.

**In an important paper (Productivity Aspects of Accounts Deflation; Data for Ireland, published in *Income and Wealth*, Series IX, edited by Phyllis Deane, Bowes and Bowes, London, 1961) Dr. R. C. Geary sets out some interesting data with respect to Ireland and discusses a number of the theoretical issues involved. Geary argues that if starting from a base year the value of domestic output on the one hand and of factor inputs on the other are each separately deflated with appropriate price index numbers the quotient of the resulting real output and real input indices produces a productivity index—equal, of course, to unity in the base year. The increase in productivity may be explained either by a shift of resources from a less productive sector to a more productive sector—the structural effect—or by other causes. Geary finds for Ireland for the period 1938 to 1957 that productivity had gone up by about 33% and that little of the increase had been due to structural effects. He also found the "unspecified factor" (see section V) operating fairly strongly in the Irish economy.

and power services at a lower *per capita* cost because of the ability to spread overheads and because additional specialisation and division of labour becomes possible. It may be possible also for the economy to take advantage of technical processes which were not previously economic. Another factor is the shift of factors of production from less productive to more productive sectors.*

I have little doubt that part of the strength of the "unspecified factor" arises out of these effects and from other factors we have not specially distinguished.** I am equally certain that a substantial part of its strength comes from the "human investment" discussed above.

## 6. SOCIAL AND ECONOMIC EXPENDITURE

One of the implications of our argument so far is that the distinction between "social" expenditures and "economic" expenditures becomes somewhat blurred. It may have certain uses but for many purposes, such as classification when considering the role of government expenditures in economic growth, the distinction is probably inappropriate. It may indeed be positively misleading for we may be persuaded by a form of words to think that some types of expenditure (on items classified as economic such as roads, dams, irrigation works etc.) will greatly assist economic growth whereas other forms of expenditure (on those items classified as social such as education, health, housing etc.) will not.

Taking the normal definition of economic development as an increase in *per capita* income it is clear, for example, that trends in the population can, mathematically speaking, play as large a role in economic growth as trends in production. Concerning certain countries, some economists have argued that from a purely economic point of view the most efficient, necessary, and worthwhile investment would be expenditures not in encouraging production but in reducing rates of population increase. The first type would normally be classified as economic and the second as social.

We must not jump to an extreme view however. There are many types of social expenditure which do not contribute to economic growth and may indeed be harmful to it in the sense that output *per capita* may be reduced. Expenditure on medical care which has the effect of keeping people alive for a longer period beyond the normal retiring age would tend to have such an effect.

If a government or planning authority were only concerned with economic growth, it could in principle consider the various alternative ways of spending its limited resources so as to get the best possible effect on economic growth. There would be formidable practical and theoretical difficulties involved in such calculations—and we will be looking at some of them later in the paper—but in principle an ideal allocation of resources could be reached. But, of course, such economic effects are not the only things that matter. Education is good for its own sake not just because an educated man may have a higher economic productivity. The curing of disease and the elimination of pain generally is also good in itself and not just because such actions may make the labour force more receptive and productive. To prolong life or to reduce the infant mortality rate may be nonsensical from an economic point of view in a country suffering from over-population, but most of us would argue that such actions are in some sense good in themselves on moral or religious grounds. Education designed to produce general literacy may not be of great benefit from an economic point of view as compared to technical training to relieve particular labour bottlenecks, but it may nevertheless be an essential prerequisite of the development of a sound political regime. Unless therefore we are prepared to say that economic development is the only thing that matters we are not in a position to arrive at a rational allocation of funds, even if we were able to carry out the intricate economic calculations hinted at above.

## 7. CAPITAL AND REVENUE EXPENDITURES

I have argued above that the simple distinction between social (unproductive) and economic (productive) expenditure may be misleading. I would

*Since the above was written I have had the opportunity of reading *Output, Input and Productivity Measurement*, (Studies in Income and Wealth, Vo. 25 of the National Bureau of Economic Research's Conference on Research in Income and Wealth) Princeton University Press, 1961. This volume contains some most exhaustive and penetrating discussions of the theoretical and statistical aspects of productivity measurement. Particularly important in the context of this Paper is the Comment of Carl F. Christ on Professor Siegel's Paper, " On the Design of Consistent Output and Input Indexes for Productivity Measurement". Professor Christ notes how economists have broken down and attributed the increases that take place from time to time in money output into: (i) that part due to changes in prices; (ii) that due to changes in non factor inputs; (iii) that due to changes in inputs of capital and labour; (iv) that due to changes in the quality of the labour force; (v) that due to changes in the quality of capital; (vi) that due to the effects of economies of scale; (vii) that due to the effects of research and increases in knowledge. Professor Christ expects that in due course it will be possible to identify in quantity terms the factors that have "caused" every bit of increase in output.

**In countries devastated or defeated in war it is possible that there may occur a special psychological urge to rebuild and develop. Political and organisational changes at government level, too, may also greatly assist development. The contrast between the relative economic backwardness and stagnation in France in the 1930's and the rapid growth of the French economy in recent years is particularly interesting in this connection.

like now to comment briefly on another distinction often made in government budgets, namely that between capital expenditures and revenue or recurrent expenditures.

Social expenditures, for instance, are themselves usually classified either as capital expenditures (the construction of schools and hospitals etc.) and recurrent expenditures (the salaries of teachers and nurses and purchases of drugs and writing paper etc.). Similarly, economic expenditures are classified as capital (the building of roads and public buildings and the making of long-term loans to farmers or manufacturers, etc.) and recurrent (payments to civil servants, the maintenance of roads and buildings, etc.).

Two main criteria tend to be important with respect to the distinction. The first concerns the length of time that the asset will be used. If certain expenditures will lead to the creation or purchase of tangible assets such as schools, roads, buildings, or typewriters which will be used and provide services for a number of years, then such expenditures will tend to be classified as capital expenditures. Expenditures on items that will be used up in the course of the year in which the expenditure is incurred or soon afterwards tend to be classified as revenue or recurrent expenditure. There is clearly a "line-drawing" problem here but the principle is clear.

The second criterion concerns the regularity of the expenditure. If there is a continuing year by year expenditure commitment in connection with the provision of a particular service, then this is revenue or recurrent expenditure. If, however, we are concerned with a once-and-for-all piece of expenditure or with expenditure on something which, if undertaken, does not involve a continuing commitment, then such expenditures—which will often also be of the tangible asset type—may come into the capital category.

The distinctions between capital and current expenditures is obviously vital in private industry when it comes to deciding what the annual profits are. It would clearly be inappropriate to count as a cost for a particular year against that year's sales proceeds expenditure on an asset which will be useful to the business for many years to come; profits in the year of purchase would be too low and profits in subsequent years too high. In such circumstances there is everything to be said for normal commercial accounting practice under which the asset would be charged to capital account in the year of purchase and each year (including the year of purchase) there would be set off appropriate depreciation charges.

The Public Finance position is rather more complicated. One of the arguments that has been used in support of making the distinction in the government field is that it would indicate the extent to which government spending might be financed by borrowing; the suggestion being that the expenditure on the various items classified as capital might be so financed—the loan (plus interest) being amortised over the life of the asset. In these days of "functional finance", however, such an approach has little relevance. What is important in considering whether there should be borrowing (or repayment of debt) is the general state of the economy—the existence of inflationary or deflationary pressures, of under-utilised resources and of the efficiency of the tax system—rather than the characteristics of particular items of expenditure.

Even if it were appropriate that attention should be directed at the items of expenditure which the borrowing was to finance it is doubtful if the criteria we mentioned above are the most worthwhile ones in the sense of suggesting a need or case for loan finance. A much more important criterion would be the effect a given expenditure is likely to have on output or production.

Nevertheless there is, it is believed, a case for dividing a Government's Expenditure Programme into capital and revenue sections. The main argument is that in most cases expenditure on assets which will yield services for a number of years carries with it an implicit need or commitment for additional permanent recurrent expenditures. There is no point in building a new school or a new hospital (as distinct from rebuilding an existing institution) unless one is prepared in the future to pay year in and year out the additional teachers and doctors who will be needed. There is no point in constructing a new road, unless in the future money is going to be available for repairing and maintaining such roads.

Now these permanent recurrent implications of capital expenditures are extremely important. In some cases, of course, they are much higher than others. But from my own experiences in Africa I think there is good reason for taking a figure of 10% as being a reasonable figure for a capital programme in which some 70% of the expenditures consist of expenditures on schools, hospitals and dispensaries, major and minor roads, and government buildings. Thus a £100 of capital expenditure adds £10 a year to the recurrent budget, excluding interest and amortization payments. A £5 million capital expenditure programme would, therefore, tend to increase the recurrent budget by £500,000 a year. If the money for capital expenditures is borrowed, then at present "hard" lending terms an allowance of at least 8½% per annum is probably required in interest and repayment charges. Thus, in such conditions, for every hundred pounds that is

borrowed and spent on capital items, about £18·5 a year in permanent recurrent commitments is incurred. It follows that a £6 million capital programme would place a recurrent burden on the budget of over £1 million a year.

If we assume that there is a marginal tax rate of 20%, the level of taxable incomes will have to rise by some £5 million a year to support a capital expenditure programme in one year of £6 million if the budgetary position is not to deteriorate or the level of taxation be increased. This necessitates either that the government expenditure has a considerable multiplier effect on the level of incomes, or that quite independently of the government's capital programme substantial income-creating developments are taking place in the private sector.

It is because of these long-term implications of capital spending that it is probably desirable to have the government's budget split so as to reveal such expenditures more clearly, in the hope that this will cause the government itself to examine carefully the total implications in the long run (both capital and current) of such expenditures and also help the opposition and other interested persons to understand what the government is really proposing to do. The crucial need is for there to be published each year a long-run forecast of total government expenditures and total expected revenues and, as a special part of such a publication, a table showing the long-run projections including the proposed capital expenditures, and those excluding them. Obviously such long-run forecasts must be made against a background of long-run forecasts of the development of the economy as a whole.

So far my remarks have supported the fairly usual division of a government's expenditure budget into capital and recurrent sections. There are, however, certain important points to be made against such a division or—more accurately—against certain rather naive conclusions that are sometimes drawn from the distinction.

The main point it is desired to make is that there is a tendency to think that expenditure on tangible assets charged to capital account is in some sense productive and contributing actively to economic development whereas expenditure charged to revenue account is not productive. This is a fallacy. Many examples could be given to illustrate the point but I think four will be sufficient.

In many underdeveloped countries, in the Middle East and in Africa, for example, many economists believe that top priority should be given to agricultural development and that the most effective way of increasing such output (in the sense of the greatest return to a given outlay) is by spending money on agricultural extension workers. This, in essence, requires expenditure in the form of salaries and in travelling and almost the whole cost of the provision of these additional and very productive services would in the normal course be charged to current account.

My second example relates to government buildings. The cost of construction of a new set of palatial offices, for example, would normally be charged to capital account. Now, proper office accommodation for ministers and civil servants is essential and up to a point such expenditures may be very productive. But there are many instances —particularly in the underdeveloped world—where buildings have been constructed to a too lavish scale and such additional expenditures over and above what is necessary for efficiency is clearly completely unproductive, even though such expenditures will have been charged to capital account.

The third example relates to roads. I have already stated that expenditure on constructing new roads would normally be shown in the capital account and it is probable that expenditure on major reconstruction would also appear there. But expenditure on normal maintenance and small scale reconstructions would be charged to the recurrent account. It is quite possible that this latter expenditure could be more productive, in the sense of increasing output or reducing costs, than the expenditure on new roads.

Finally, in this section, I would like to refer to something which is quite crucial as regards the "allocation of public funds for social development". Such expenditure is—as we have seen—often grouped as between capital and recurrent. From the point of view of its potential contributions to economic growth or from the point of view of its contribution to general economic well-being, there are no *a priori* arguments that can tell us whether a unit of money spent on a long-lived tangible asset such as a school—classified as capital expenditure—will or will not be more productive or beneficial than the same amount of money spent employing —say—more teachers for a year, which expenditure would be classified as a current expenditure. Available financial resources should be freely transferable from one type of expenditure to another and planners and ministers should have sufficient mental flexibility to be prepared to make the comparisons between the effects of more expenditure on tangible assets (social and others) and more expended in other ways.

It may seem that I am labouring this point too much but my experiences in African conditions suggest that words may have a profound effect on our thinking and actions. We come to believe that an increase in government capital expenditures means that we are making an increased effort at economic development and such increases will increase our productive capacity or potential. How

often is it, for example, that a government capital expenditure programme is referred to as a Development Plan, when such plans are at best plans for the expansion of the public sector. And, on the other hand, we come to believe that an increase in recurrent expenditure is to some extent evidence of a lack of will with respect to economic development, of an unwillingness to allocate sufficient resources to capital formation, whereas it may be that expenditures of a type that would normally appear in the current budget would be the most effective from the point of view of economic development.

## 8. ON CAPITAL

One of the reasons for the confusion and difficulties that can arise with respect to the issues we have been discussing is the existence of considerable uncertainty and ambiguity as to the meaning of the word "capital" and the phrases "capital investment" and "stock of capital". I would like to make two points here.

There is a tendency to use these phrases in two rather different ways. There is, first of all, the forward looking approach that concentrates attention on the contribution to future production that a given piece of expenditure will make. Now, in the light of our argument so far, it is clear that such expenditures, be they by governments or by private enterprises, may be on tangible assets or they may constitute "human investment". A man's output may be increased by providing him with some tools (tangible investments) or by providing him with a better tool at the same cost (intangible investment by improving the quality of tools) or in many cases by giving the man some education or training or medical attention (intangible investment). In all cases the productivity of the expenditure is the sum of the increase in the input of the man brought about by the help of the tangible or intangible investment. Marginal efficiencies of the expenditures could in principle be found by calculating the rate of discount which would be required to make the present value of the various productivity streams equal to the expenditure incurred.

Looking at capital in this productivity manner, it is clear that in private industry such expenditures would only tend to be incurred when the expected rate of return is not greater than the rate of interest. This is the way that business men tend to think of capital expenditures when they are considering whether or not to undertake a new project, though, of course, it is always possible that their estimate of the future will be wrong and that the capital will in fact not prove to be very productive.

The other way of looking at capital stresses the stock of goods, or wealth aspect and is an *ex post*, statistical or savings approach. Capital or wealth is here regarded as the cumulative excess of production over consumption at any given moment of time. With this approach there arises a problem as to the definition of consumption. An extreme view would be to treat everything that exists at a given moment of time as part of the stock of capital —this would include food and household goods purchased but not actually consumed or fully worn out—but the more normal view is to count all goods purchased by households (excluding houses) as already fully consumed and confine attention to the rest of the stock of goods.

Though, in some sense, all this accumulated wealth helps and assists further production the approach does not concentrate on the productivity aspect, and the contribution of some of this accumulated wealth to increased production is not great. Furthermore, such an approach would not normally take notice of a good deal of "human investment" which may be having a very important effect upon the level of output.

Resources that are productively put into the training and education of people represent real savings and real investments. The resources are not being currently consumed; the level of consumption is being kept down below the level it might have been by the diversion of such funds.

In emphasising the possible effects on economic growth of "human investment" no attempt is being made to play down the importance of capital as a really fundamental factor in growth. On the contrary, the resources on the human side satisfy the normal requirements of productive capital investment.

Clearly, any definition of capital is somewhat arbitrary. It follows that we need to define capital differently from time to time depending upon the purpose in hand. In the present context when we are interested in the development of economies we need to define capital fairly broadly so as to embrace the many contributing elements of foregone consumption which tend to increase the productive potential of the economy. Such a definition will include a good deal beyond expenditures on tangible assets and will exclude expenditures on some such assets.

Statisticians who produce estimates of the annual increase in the tangible capital stock and in its total size use the wealth-savings approach as indeed it is almost inevitable that they should. Thus, the pressure is always there to use such statistics as a measure of the resources a country is diverting to help increase future production and this can be misleading.

In considering capital formation in tangible assets it is necessary always to bear in mind the

distinction between gross expenditures and investment and net expenditures and investment. A similar distinction is also required when considering human investment.

We have already noticed that a substantial part of such expenditures may have little or no productivity effect and are more properly regarded as consumption than investment. The point I am making here, however, is that of the expenditure which is contributing to production only part should properly be regarded as net investment or as contributing to the increase in the effective stock of education and training embodied in the labour force. Each year a part of the labour force leaves active employment through death, retirement, marriage, or emigration and there is thus lost to the economy the capital embodied in them in the form of education, training, etc. (There may be some return through the remittances of emigrants etc.). Thus, even to maintain such capital intact will require a certain amount of gross investment spending each year to make up the annual loss. Only the increase in the embodied stock of education and training constitutes net investment and represents an increase or improvement in the quality of the labour force.

It will be obvious from what has just been said that a high emigration rate, a young retiring age, and the disappearance of women from the labour force on marriage may—from an economic point of view—constitute a waste of scarce investment resources.*

We have not so far mentioned the quality of the capital. Quality is most important with respect to investment expenditures in both the tangible and intangible spheres. Even if net investment is zero improvements in technology which are embodied in the annual depreciation expenditures may be very great enabling a given amount of capital and labour to produce a bigger output. Similarly, with "human investment". It may be that using conventional measuring methods the stock of education is only just being maintained intact, net investment in education being zero. However, the quality of the education being given may have improved or the techniques of teaching may have developed in such a way that a given input of teaching resources produces a higher output in the sense of better informed pupils. In these ways the effective stock of education embodied in the working force may go up, even though when using normal measuring methods there has been no change in the position.

It is interesting to note, too, how different forms of social expenditures may be complementary to each other from a productivity point of view. Medical expenditures that enable workers to have a longer and more effective working life give support to educational expenditures. If a man is to have a short working life, heavy investment spending in education may not be justified. Alternatively, the greater the capital embodied in a worker through training and education, the greater the loss involved when that worker is off sick or is forced through ill-health to retire prematurely and, therefore, the greater is the opportunity (in productivity terms) for expenditure on the medical services.

## 9. PLANNING SOCIAL EXPENDITURE

I have already stated that there is no systematic or scientific procedure or set of rules which if followed would tell us the correct allocation of a country's resources for social development. Yet, decisions have to be made and in my view there are a number of procedures which governments and planning authorities can follow to assist them in making these decisions.

### Pure Empiricism

First of all, there is what may be called the pure empirical approach. This was pioneered by W. A. Lewis and A. M. Martin in their well-known 1956 Manchester School article (Patterns of Public Revenue and Expenditure) and has recently been carried a good deal further in the 1961 United Nations report on the World Social Situation.

In a well-known passage Lewis and Martin pose the question: "What is the appropriate level and distribution of public expenditure in underdeveloped countries? The question cries out for an answer if not in rigid quantitative terms at least in terms of some principles which may be used in judging government programmes. Throughout the world Ministers and officials are busily engaged in working out five-year plans for social expenditure and they look anxiously to economists and others for guidance as to what is appropriate. Neither is there any lack of advice offered. But in none of the mass of published reports can one discover how the authors

*This sort of consideration in so far as it concerns emigration is of great importance in the Irish context. In recent years about half of all the children that are born and educated eventually emigrate. From the point of view of the growth of the Irish domestic economy resources put into the education of these emigrants is unproductive. This, of course, does not mean that such expenditures should not be incurred. Clearly a case can be made out for ensuring that the emigrants have the best training possible so as to help them face the pressures of foreign lands. Moreover there may well be a return in the form of remittances or tourist expenditures which would be part of National Income though not part of Domestic Income. There is, too, the possibility that *more* education and training—perhaps of a slightly different type—may be a pre-requisite for the development of a new growth momentum which in turn might reduce emigration by increasing the domestic demand for labour.

have decided what level or pattern of expenditure was appropriate".

To help meet this lack of rules Lewis and Martin suggest an empirical approach. They examined the revenue and expenditure pattern of sixteen countries of which over half were relatively poor. Having excluded defence and national debt interest (mainly the product of past wars) and social security transfer payments, they calculated for a number of important items of government expenditure the median and upper and lower quartile countries etc.

The point of such calculations was to establish bench marks to assist comparisons. In essence, the advice of Lewis and Martin to a Minister of Finance, who is wondering what is the correct or appropriate level of expenditure on certain items, is that he should compare his levels of expenditure with that of countries in similar stages of development or against some average or typical allocation of expenditures. If it is discovered that his country is the "odd man out" in certain important directions, he is presented with a series of questions or points to consider and face up to. Clearly such an approach does not lead immediately and directly to a correct allocation of funds but it is felt that the following through of such comparisons would greatly assist the government of a country in coming to a correct allocation of resources.

It may be interesting to recall two of the bench marks that Lewis and Martin produced. They were as follows:

GOVERNMENT SPENDING ON CURRENT ACCOUNT AS A PERCENTAGE OF GROSS NATIONAL PRODUCT

(Excluding defence, public debt and social security payments.)*

| | Administration Services etc. | Economic Services etc. | Education Services etc. | Health Services etc. | Total |
|---|---|---|---|---|---|
| Median Country .. .. | 3·08 | 3·57 | 2·31 | 1·78 | 10·74 |
| Upper Quartile Country .. | 3·25 | 4·69 | 2·97 | 1·78 | 13·81 |

*Housing and Labour are regarded as Economic Services in this study. It should be noted that Social Security Transfer payments are excluded.

The results for the median country of the more recent U.N. Study (referred to in para. 85) which was concerned with 41 countries were as % of G.N.P.):—

| | |
|---|---|
| Education ... ... ... | 2·7% |
| Health ... ... ... | 1·1% |
| All Social items ... ... | 5·6% |
| General administration, defence etc. (including transfer payments) ... ... ... | 11·2% |
| Economic ... ... ... | 4·4% |
| Total ... ... ... | 21·2% |

In principle these calculations were for aggregate government expenditure i.e. the combined Central Government, Local Government and Social Security Fund totals.

In the third chapter (Social-Economic Patterns) of the World Social Report 1961 an heroic attempt is made to help governments to think clearly about the appropriate allocation of funds for social development in their respective countries. The chapter in essence consists of an extensive statistical comparison of the relationship between selected economic and social indicators in a large number of countries. In particular, attempts are made to compare the levels of achievement in various social directions in various countries at similar levels of economic development and to compare the various levels of economic development associated with particular indicators of social development.

These comparisons are useful in many different ways. Sometimes questions are suggested as when the economic indicators with respect to a particular country (e.g. *per capita* incomes) are high as compared to particular social indicators (e.g. literary or the percentage of the potential school population which is actually at school)—alternatively—when the social indicators are high in comparsion with the economic indicators.

Other types of comparison—equally suggestive—are possible. If we look at the United States, for example, we find that the resources devoted to education at all levels (counting the foregone earnings of the students as part of the costs) were equivalent to some 34% of gross (tangible) investment and some 50% of net (tangible) investment. We can also note that between 1900 and 1956 the total resources devoted to education increased more than three times as fast as the resources devoted to tangible capital formation.

We can also use as a suggestive bench mark the fact that in U.S.S.R.—a country which has achieved a very rapid rate of economic expansion—some $7\frac{1}{2}$% of the gross domestic production (excluding foregone earnings) has been devoted to education.

What it is desired to emphasise here is the same as with respect to the Lewis and Martin contribution,

namely that statistical comparisons as between countries are most valuable in throwing up the questions that need to be asked concerning the appropriate levels of social development and—even—suggesting what the answers might be. And there is reason to suppose that such an approach is fruitful. The U.N. authors for example make the point that in many cases where there is imbalance the discrepancy is being corrected.

I would argue, therefore, that any country which wishes to develop a balanced economy and plan its expenditures in economic and social directions carefully and rationally should as part of its planning or development research make very careful comparisons of the position in other countries.

## Internal Balance

One of the most important requirements is to have balanced development within each of the social services. If, for example, it has been decided that about 1% of each age group should have a university education this decision has certain implications for other parts of the educational system. If selection methods were absolutely ideal at the secondary school level, clearly only some 1% of each age group would have to be admitted at the secondary school level—for this purpose. If, on the other hand, "selection" at that stage was going to be purely random, some 15-20 per cent of each age group might have to be admitted to the secondary schools to provide a suitable 1% at the university level.

Assuming that there has been some pre-selection process at the time of entering secondary schools there is some evidence (*Unesco Conference on African Education*, 1961) that about one-tenth of the secondary school graduates will be of the right quality for university courses. Thus a 1% university intake may require a 10% secondary school intake. If the actual pattern is very different from this "technological" link there tends to be a waste of resources.

Lower down the educational ladder in countries where the payment of fees by parents is required for education, there is again some evidence (from the same Unesco source) to suggest that about 10% of the parents of children at primary school in the poorer countries of the world are prepared to pay fees for their children to continue at secondary school. If enough schools and teachers are not available for this proportion of primary school pupils there will be an imbalance, a waste of resources, and much unhappiness to students and parents.

If there are certain structural parameters of the type to which I have referred, it will be clear that in many poor countries it would probably be most unwise for the government to try and meet the very strong popular demand that exists for free and compulsory primary education. For if some 100% of each age group were to go to primary school at least 10% would wish to go on to secondary school and 1% would qualify for university entrance. Though primary education is relatively cheap, the cost of secondary education and university education is extremely expensive and it is unlikely that all poor countries will be able to afford the superstructure relevant to a 100% primary enrolment. (At the moment many underdeveloped countries have less than 0·5% of their age groups in the university). To develop primary education without having the resources to develop the corresponding level of secondary and university education is probably unwise.

Similar types of association between different levels of education exist in the technical field. There is no point in having relatively large numbers of highly trained graduate engineers and only a few technicians and skilled craftsmen for them to direct. There is, of course, no absolutely hard and fast relationship but even a cursory examination of the experience in other countries and of the experience in one's own country concerning a number of industrial plants would throw considerable light on what is the appropriate balance between technical people at different levels of training and experience. Similar studies would be useful, too, in respect of the medical services in suggesting the appropriate division of resources into the training of specialists, general doctors, nurses, and other medical personnel.

## Assessment of Effects

Another approach to a more correct allocation of expenditures is to attempt to assess more accurately the economic returns to such expenditures. Attempts have been made, for example, by a number of American economists to calculate the economic returns to expenditures on various types of education. Professor Becker of Columbia calculated, for example, (*American Economic Review*, May 1960) that the rate of return of investment in College education at about 10% per annum was not very different from the rate of return on investments in tangible assets in the private corporate business sector.

The "Becker" method, in brief, was to aggregate the salaries earned over a person's working life in various occupations and to obtain their present value by discounting them at the ruling interest rate. He then compared this present value with the costs of the education necessary for the job including (and this is important) as part of the costs of

education the foregone earnings lost during the training period.

So far as I know no studies of this type have been made in other countries. In most of the African countries, however, with which I am familiar I am sure that high returns on investment in education—particularly on investment in education at the university level—would be shown if such calculations were made because the cost of earnings foregone would be very low whereas the incomes received by university graduates are very high.

There is also scope in the field of social spending for the application of the cost/benefit type of approach and calculations which have been so successfully pioneered by the international agencies in assessing the productivity and worthwhileness of investment in tangible assets. This approach consists of carefully and systematically setting down all the costs of a particular project or service and also all the advantages likely to follow from such a project or service. Both sides of the equations being, of course, finally expressed in monetary terms.

A good example of how a simplified form of cost benefit-analysis can be applied in the field of social expenditures was reproduced in the December 1959 issue of Ecafe's *Economic Bulletin for Asia and the Far East.* The example demonstrates how systematic analysis might show the economic returns of social expenditures on a malaria eradication scheme.

By adding together the total economic costs of malaria in a region (such as the effects of the premature deaths and retirements of workers, absence from work due to illness, and reduced efficiency whilst at work) and comparing this with the cost of a programme to get rid of the disease, it becomes possible to compute whether such a programme is economic or not.

Clearly, there are immense statistical and methodological problems in doing such a set of calculations ; perhaps the most difficult being to decide the extent to which, in considering the benefits of such a programme, one will concentrate on the indirect benefits as well as on the direct benefits. But comparisons and results can be obtained.

From the point of view of helping governments make up their minds whether or not to embark on particular schemes of social expenditures two suggestions are made in this context. First, that attempts should be made to set out as clearly as possible in quantitative and financial terms the economic costs and the economic benefits of a particular project. And the second is that fairly detailed assessments should be made of the economic costs and benefits of similar schemes of social expenditures that have been carried out elsewhere. These will be particularly valuable as it should be possible to get much firmer data on projects that have already been undertaken.

## Estimate of Needs

A fourth way to get guidance as to the appropriate needs particularly in the education and training sphere is to project forwards the requirements of the economy with respect to certain types of personnel during the next fifteen or so years. This is in essence a rather specialised form of dynamic input-output programming. Having built up a broad picture of the expected state of the economy in the future and of its general composition, estimates can be made (on certain productivity assumptions) of the manpower needs and requirements for such a level of output. Such estimates could in fact be done for each of the next 15-20 years and the resulting figures would be a measure of the requirements from the educational and training establishments.

When such calculations have been done, the required output from the training establishments may suggest that the original economic programme was too large or too small relatively to what can be done in the field of education and training.

It is always a good idea to plan educational advance on the generous side for after all it is always possible for people with higher qualifications to take lower quality jobs. They will usually —though not always—be more productive in such jobs than people with lower qualifications. However, since this kind of adaptation takes time (and is not easy for the individual) and much social disturbance is produced if the output of the specific educated group substantially exceeds the demand at current prices, the excess should probably not be too great.

In order to ensure that there is no waste of scarce resources and personnel there may well need to be a certain degree of coercion exercised in the training process. In East Africa, for example, most of the young men graduating from school with scientific qualifications tend to wish to study medicine and not enter agricultural or veterinary courses. Obviously, there is from a human point of view an almost inexhaustible need at the present time for doctors in African conditions and yet there is also a very great economic need for trained agricultural and veterinary officers. In such conditions there is clearly a case for limiting the number of students who can enter medical schools so as to "persuade" students to take up agriculture and other less popular fields.

Output requirements in particular subjects also reflect back throughout the whole educational structure. If one requires a large number of graduates with scientific training then this means in

most countries that there is need for a scientific bias to education in the final years at the secondary school level. This in turn may mean, if the output of such people is to increase, that there must be much larger numbers of science teachers in the schools. This emphasises the need for planning.

It is also desirable to make detailed forecasts of the manpower requirements of particular policy decisions relating to broad social objectives. If a decision is under consideration concerning the introduction of general primary education, or concerning the need to establish hospital accommodation for all maternity cases over a period of years, it is vital that before the decision is made its full implications in terms of trained staff should be known. Moreover, the costs of training the staffs and setting up any new training centres that may be required should be regarded as part of the costs of the proposed new service. It is these total costs that should be compared with the value of the benefits likely to flow from the new service and with the benefits that might follow an equivalent expenditure in other directions.

## Problems of Finance

Many underdeveloped countries particularly those in which foreign trade is a relatively low proportion of gross national product find it difficult to raise much more than about 10-15% of total incomes for government use. In such countries special consideration needs to be given to the case for leaving education and medical care to the responsibility of the individual citizen rather than the State. There are, of course, a good number of political and social arguments that can be used in favour of such a course of action. My point here, however, is that the more difficult the raising of revenue the more this alternative needs to be considered.*

The revenue situation also emphasises the need to have very much in view the increased recurrent implications of any capital expenditure and the extent of the increase in revenue resulting from the effects of this capital and recurrent expenditure on the national income. The tighter the budgetary position the more it is necessary to give emphasis to expenditures which will directly increase the money national product and thus the level of taxation proceeds. An important public finance principle which countries with relatively weak taxation structures should try to observe is that a high proportion of the recurrent spending necessitated by new capital expenditures (and, indeed, by changes in policy generally) should be self-financed to a substantial degree i.e. that it should be met through a "feed back" type of effect —out of increases in government revenue due to the higher level of incomes brought about by the expenditure.

## 10. CONCLUDING REMARKS

There are really only two major points in this paper. First, that what is really important with respect to economic development is the creation in a country of the capacity to create wealth rather than the creation of wealth in the form of tangible assets itself: that this capacity depends in the last resort upon the quality of the people of the country, and that in turn this can be influenced if not determined by expenditure—particularly public expenditure on education, training, medical and public health services, and other social services—though by no means all such expenditures are productive in this sense.

To translate this principle into action involves governments taking a number of important decisions. There is first the general question of how much a country can afford to devote to social expenditures. In this context we have to divide social expenditures into that part which we regard as "human investment" and which has a definite effect on the future level of output and that part which does not. The productive part raises a smaller number of issues than the unproductive part, for, as we have seen, it is possible in principle to apply to it a fairly standardised approach so as to calculate a rate of return, thus enabling comparisons to be made with expenditures in other productive directions. The problem here is almost this: How, with given resources available for investment, should such resources be allocated—in particular with reference to the division between social and other investments —so as to contribute best to economic growth?

With the "unproductive" part, comparisons have to be made with other "consumption" expenditures in the public sector and in the private sector. For before the government decides that the community should have a certain level of (unproductive) social services—of public consumption goods—it should attempt to assess the relative advantages to the community of public consumption goods as compared to the private consumer goods that the people would purchase if the level of taxation and government spending was lower. For the resources going in public (unproductive) spending might equally

*In the Paper there is considerable emphasis on the need for *government* action and money in the spheres of education and health and little discussion of private expenditures or of ways in which taxation concessions or public finance transfer arrangements might help such expenditures. Though it is thought that this emphasis was quite appropriate for the occasion for which the Paper was designed it is clearly by no means so appropriate in the context of Ireland where private expenditures in these fields are large.

well be utilised in enabling people to eat more, or buy more clothing or buy bicycles or motor cars.

The second point made in the paper is that expenditures on social development need to be planned with at least the same care that is given to the planning of a large new dam and its associated hydro-electric installation and irrigation canals etc., or the building of a new major port or railway line, or the construction of a massive steel plant. Comparable sums of money are involved. Risks of wasting resources are as great, and as much care in making projections and having "forward looks" and seeing where a new project fits into the economy as a whole is required. If a country wishes to get value for the resources it puts into social development and get a reasonably appropriate allocation of resources into this sphere there is a good case for the establishment of a research team or unit concerned with cost/benefit analysis, with estimating present and future requirements of skilled manpower, with considering the relative advantages of public and private consumption expenditures and with considering the social barriers to economic, advance and the ways to remove them ; otherwise a great deal of scarce resources may be wasted.

# Supplement

The Beirut Conference Paper[1] was concerned with matters of general importance and interest and it is believed that the arguments in it and the broad conclusions reached are just as relevant with respect to Ireland as to the countries which sent delegates to the Conference. In this Note all it is desired to do is to comment quite briefly on two of the matters discussed which are considered to be of particular interest in the Irish context.

## FIXED INVESTMENT

One of the main objects of the Paper was to suggest to the Conference that in considering and planning economic development there was a danger —contrary to much current thinking and advice —in emphasising too much the importance of capital formation in fixed assets; and in the Paper a number of different arguments relating to this matter were deployed. Against the background of recent Irish experience there is need to consider two somewhat conflicting points.

During the last 10 years or so Gross Fixed Capital Formation has been lower with respect to the Gross National Product in Ireland than in most other European countries *and* so has the increase in her Gross National Product. Some statistics are set out in Table 1. Comparing the Irish position with the experience of the O.E.E.C. countries as a whole it can be seen that during the years 1948-1960 inclusive the rate of investment in Ireland was only 15·3% of Gross National Product compared with the average for all the O.E.E.C. countries of 18·3%, and her real Gross National Product went up by only 22% during this 12 year period as compared with the average O.E.E.C. increase of about 80%. Obviously there are many reasons for the relatively low increase in the Irish real Gross National Product besides the low level of investment but it seems quite possible that a higher level of investment might have produced a bigger increase in income and, therefore, that the overall rate of investment in fixed assets may have been too low rather than too high during the period,[2] and the columns of Tables 2 and 3 indicate that in recent years there has been no substantial increase as compared with the position earlier in the decade.

The second point with respect to Ireland's capital expenditures rather reinforces the view expressed in the Paper. Though the level of fixed capital formation was relatively low—which would, perhaps, tend to make one expect it would be fairly productive—it would seem on the whole not to have had a particularly striking impact on the level of output. Ireland had in fact the highest gross marginal capital output ratio of the 18 O.E.E.C. countries for the period 1948-1960. Columns 6 and 7 of Table 1 set out some statistics with respect to a number of European countries. For the O.E.E.C. countries as a whole there was a gross marginal capital output ratio of 3·6 with respect to fixed capital formation; the corresponding figure for Ireland was 8·9 suggesting that on average over twice as much capital was needed in Ireland to produce a given increase in output.[3]

It is not easy to explain why Ireland should have a

[1]Hereafter referred to as " the Paper ".

[2]This view must, however, be read in conjunction with the points made in the remaining paragraphs of this section.

[3]See the Notes to Table 1 for information as to how the marginal capital output ratios were calculated and for some reasons why they should be treated with caution. It is in no sense suggested that a figure of 8·9 is the sort of figure to have in mind when considering the likely impact of capital formation on the economy in the future. As is pointed out later in this Note it is probable that the stock of capital was under utilised in 1960 which has the effect of making the marginal capital output ratio seem particularly large. It should also be noted that the method of calculation which was on a gross basis greatly exaggerates the size of the ratio. On the assumption that depreciation constitutes 50% of gross investment the net capital output ratios for Ireland and the O.E.E.C. countries as a whole using the same data and methods as are used for Table 1 come out at 5·7 and 2·9 respectively. Using the official Irish data for the period 1953–1961 (which is set out in Note 2 to Table 3) and taking the change in net output as between 1953/4 and 1960/61 and relating this to the net fixed investment of the period 1953/4–1959/60 (assumed to be half the gross investment) produces a net marginal capital output ratio of 3·5. (Doing the same sort of calculation for the O.E.E.C. countries as a whole for the period 1953/4 to 1959/60 produces a ratio of 1·7.) Given the changes in the composition of Irish Capital Formation which have taken place in recent years (which are discussed later in the Note) it would probably not be unreasonable to take for planning purposes an overall net marginal capital output ratio of somewhere between 3 and 4. From our immediate point of view, however, it is considered that the figures deployed in Table 1 are useful: they are drawn up in the same way and on a consistent basis for the various countries and thus are useful for comparative purposes and, second, they do suggest fairly clearly in the case of Ireland that capital formation *alone* does not lead to economic growth. It should also be noted that whenever comparisons are made between Ireland and the O.E.E.C. countries for a reasonably long period of time either on a gross or a net basis the Irish figure comes out very substantially higher and it is the relative position and not the absolute position with which we are here concerned.

TABLE 1: SOME OUTPUT AND INVESTMENT COMPARISONS

| | Percentage Increase in Real Gross National Product | | | | Marginal Capital/Output Relationships 1948—1960 | | Gross Fixed Capital Formation 1948—1960 | | | | | | | Agriculture Forestry and Fishing as % of GDP in 1960 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1948—1960 | | 1953—1960 | | Fixed Capital | Total Capital | Total as % of GNP | Residential Construction | | Other Construction | | Machinery etc. | | |
| | Total | Per Head | Total | Per Head | | | | As % of GNP | As % of Total | As % of GNP | As % of Total | As % of GNP | As % of Total | |
| Italy .. .. .. .. | 101 | 87 | 49 | 44 | 3·3 | 3·4 | 20·0 | 4·7 | 23·4 | 6·3 | 31·5 | 9·0 | 45·0 | 17% |
| Denmark.. .. .. .. | 57 | 45 | 29 | 23 | 4·1 | 4·5 | 16·4 | 2·8 | 17·3 | 4·6 | 28·3 | 8·9 | 54·4 | 21% |
| Ireland .. .. .. .. | 22 | 29 | 6 | 10 | 8·9 | 9·3 | 15·3 | 2·9 | 19·0 | 6·5 | 42·2 | 5·9 | 38·8 | 26% |
| Sweden .. .. .. .. | 55 | 41 | 30 | 24 | 5·5 | 5·7 | 20·2 | 5·0 | 24·7 | 7·8 | 38·5 | 7·5 | 36·8 | N.A. |
| U.K. .. .. .. .. | 39 | 33 | 22 | 18 | 5·1 | 5·4 | 14·7 | 3·0 | 20·1 | 4·1 | 27·8 | 7·6 | 52·0 | 4% |
| Belgium .. .. .. | 42 | 33 | 21 | 16 | 5·2 | 5·4 | 16·0 | 4·4 | 27·3 | 4·3 | 26·7 | 7·4 | 46·0 | 6% |
| Greece .. .. .. .. | 117 | 93 | 50 | 41 | 2·6 | 2·9 | 16·9 | 5·1 | 30·5 | 5·2 | 31·0 | 6·5 | 38·4 | 33% |
| Netherlands .. .. .. | 82 | 55 | 42 | 30 | 4·3 | 4·7 | 22·3 | 4·4 | 19·5 | 6·9 | 30·9 | 11·1 | 49·6 | 10% |
| E.E.C. .. .. .. .. | 110 | 89 | 45 | 36 | 3·1 | 3·4 | 19·5 | 4·5 | 22·9 | 5·6 | 28·8 | 9·4 | 48·4 | N.A. |
| O.E.E.C. .. .. .. | 80 | 63 | 37 | 29 | 3·6 | 3·6 | 18·3 | 4·1 | 22·2 | 5·4 | 29·8 | 8·8 | 48·1 | N.A. |

*Notes to Table 1*

1. *Source : O.E.E.C. Statistical Bulletin* especially No. 4 and No. 5 of 1961. Gross National Product is taken at Market Prices.

2. The estimates of the marginal capital/output relationship have been derived by adding together annual real Gross Capital Formation for each of the years 1948/1959 inclusive and dividing this total by the difference in real terms between the 1960 and 1948 levels of GNP. Many quite fundamental objections can be made to this type of calculation e.g. that it :—

(*a*) ignores depreciation,
(*b*) pays no attention to the extent to which the level of national expenditure in the two years taken for the income or output comparisons is sufficient to utilise fully the stock of capital,
(*c*) conceals too much by ignoring the different relationships existing from one sector to another.
(*d*) considers Gross National Product rather than Gross Domestic Product,

and the figures should only be taken as suggesting in a very broad way the relevant orders of magnitude.

3. The above method of making a rough estimate of Marginal Capital/Output ratios is used in the 1959 *Economic Survey of Europe* (See App. B P 14.) The method is also used and justified by Angus Maddison of the O.E.E.C. Secretariat in : Economic Growth in Western Europe, 1870–1957, *Banca Nazionale Del Lavoro, March* 1959.

4. E.E.C. refers to the combined totals of the common market countries e.g. Belgium, Luxemburg, France, Germany, Italy and the Netherlands.

5. O.E.E.C. refers to the combined totals of the members of O.E.E.C. except Spain, i.e. the E.E.C. countries plus Austria, Denmark, Greece, Iceland, Ireland, Norway, Portugal, Sweden, Switzerland, Turkey and the U.K.
On September 30th 1961 O.E.E.C. was succeeded by O.E.C.D.; Canada and the U.S.A. joining as full members the eighteen European countries that had been members of O.E.E.C.

6. *See* Note 4 to Table 2.

relatively high marginal capital output ratio. Part of the explanation almost certainly lies in the composition of Irish investment expenditure. Comparing the Irish position with that of the O.E.E.C. countries as a whole the main difference in composition is the relatively high expenditure in Ireland under the heading "Other Construction" and the relatively low expenditure under "Machinery and Equipment". It might be thought that this is primarily due to the fact that the Irish industrial sector is much smaller and the agricultural sector much larger than in the O.E.E.C. countries and in part this is probably true. It is interesting, however, to note that Denmark which is not markedly less agricultural than Ireland—some 21% of her 1960 Gross Domestic Product came from the agriculture, forestry and fishing sector as compared, with Ireland's 26%—managed to invest some 8·9% of her Gross National Product over the years 1948-1960 in machinery and equipment, constituting some 54% of her total investment expenditures, compared with the 5·9% of GNP and 39% of total investment achieved in Ireland. There is certainly a suggestion in the figures that Irish investment in "other construction"—i.e. expenditures in such fields as road construction, land rehabilitation, and on post office and other public building—may have been a little excessive from a production and productivity point of view. Such expenditures though very often most desirable do not have an immediate and substantial effect on the level of output and thus tend to make the capital output ratio rather large. In such circumstances the benefits of saving and investment in capital assets do not materialise in the form of a higher level of output and standard of living for a considerable number of years—if at all.

In recent years it has of course become appreciated that the composition of investment in the 10 years or so after the war had included too much "unproductive" investment and one of the central themes of the *Programme for Economic Expansion*[4] was that more effort was necessary in the sphere of "productive" investment. There is some evidence of a change in the aggregate figures set out in Table 2 notably the decline in the share of investment resources going into construction (especially housing) and the increased emphasis on machinery but not, perhaps, as much as might have been expected.[5] However, in an essentially free enterprise society the government has only limited powers to cntrol and alter the level of investment and *The Programme for Economic Expansion* was concerned primarily with that part of investment which came under the direct influence of the government. Table 4 below sets out the changes that have occurred in the composition of the Public Capital Programme in recent years and it shows a considerable shift in the desired direction. Particularly noticeable is the decline in the share of public funds devoted to building and construction from 40% to 25% of the total matched by a corresponding increase in public support for industry.

Another possible explanation of the high capital output ratio is the possibility that a good deal of capital is not being used to capacity. This could arise for two rather different reasons.

In the first place it could happen because entrepreneurs wrongly guessed the level of demand for their products and it seems possible that this may have occurred during the latter half of the period we are considering.

During the years 1948-1955 real Gross National Product—as is shown in Table 3—increased each year. Output remained constant till about 1957 when it declined, the 1955 level of output not being achieved again until 1960. The relatively low level of investment from 1957 to 1959 inclusive is clearly both an effect and a cause of the low level of output. The point it is desired to stress here, however, is that if the 1955 stock of capital was adequate to produce the 1955 level of output then a good part of the gross capital formation from 1956 to 1959 must have gone in building up the capital stock to a point where it would have been able to cope with a considerably larger level of output than that achieved in 1960.[6] It is appreciated that by no means all the gross capital formation can be regarded as adding to the effective capital stock. Real depreciation is occurring all the time and the scrapping of out of date capital. Moreover, as the composition of output changes new capital is needed in the growing sectors and there is often no corres-

[4] *Programme for Economic Expansion*, Pr. 4798, Dublin 1958.

[5] Table 2 shows that the level of gross investment in machinery and equipment in 1960 was running at some 13% above that of 1957. A breakdown of fixed capital formation for 1961 is not yet available but the trade statistics suggest that investment in plant and machinery continues to increase; imports of machinery and electrical equipment for example showing an increase over the previous year.

[6] It is indeed almost certain that the high growth rate of recent years has been much facilitated by the general adequacy of the stock of capital. Since 1959 a good deal of the "excess" capital formation of the middle 1950's must have been brought into productive use. An effect of this has been to suggest that capital output ratios during the last three years have been very favourable. In fact the high growth rate has only been possible —given the resources devoted to investment—because of the existence in 1959 of excess capacity. A difficult situation will arise in the near future when this abnormal position has been corrected for then it will be necessary to have a higher rate of capital formation than has been needed in recent years to maintain the present rate of growth. During the last three years GNP in real terms has gone up by about 4·5% per year. Gross Investment as a % of GNP has been about 14%. It would be unrealistic to assume a gross marginal capital output ratio of less than 5 (see Footnote 3). This implies an investment ratio of about 22·5% of GNP if a 4·5% growth rate is to be achieved—or an increase in the existing rate of over 50%.

TABLE 2: GROSS INVESTMENT SPENDING: FIXED ASSETS

| | Total | | | BREAKDOWN | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Dwellings | | | Roads | | | Other Buildings etc. | | | Transport Equipment | | | Machinery : Ag. and other | | |
| | Amount £m | % of GNP | In Real terms 1953=100 | %of GNP | % of Total | In Real terms 1953=100 | % of GNP | % of Total | In Real terms 1953=100 | % of GNP | % of Total | In Real terms 1953=100 | % of GNP | % of Total | In Real terms 1953=100 | % of GNP | % of Total | In Real terms 1953=100 |
| 1953 | 79·5 | 15·1 | 100 | 3·1 | 20 | 100 | 1·0 | 7 | 100 | 5·3 | 35 | 100 | 1·5 | 10 | 100 | 4·3 | 28 | 100 |
| 1954 | 84·5 | 16·0 | 108 | 2·8 | 17 | 93 | 0·9 | 6 | 101 | 5·8 | 36 | 113 | 2·0 | 12 | 141 | 4·3 | 27 | 101 |
| 1955 | 90·4 | 16·4 | 113 | 2·9 | 18 | 97 | 0·9 | 5 | 98 | 6·4 | 39 | 127 | 1·9 | 12 | 136 | 4·3 | 26 | 99 |
| 1956 | 89·5 | 15·9 | 105 | 3·0 | 19 | 97 | 0·8 | 5 | 82 | 6·2 | 39 | 117 | 2·4 | 15 | 164 | 3·5 | 22 | 80 |
| 1957 | 78·0 | 13·4 | 89 | 2·0 | 15 | 64 | 0·7 | 5 | 72 | 5·3 | 40 | 100 | 2·0 | 15 | 138 | 3·3 | 25 | 75 |
| 1958 | 78·0 | 13·0 | 87 | 1·6 | 12 | 49 | 0·7 | 5 | 76 | 4·5 | 35 | 86 | 2·3 | 18 | 164 | 3·7 | 29 | 86 |
| 1959 | 80·9 | 12·7 | 91 | 1·6 | 13 | 57 | 0·7 | 5 | 80 | 4·5 | 35 | 93 | 2·2 | 17 | 158 | 3·7 | 29 | 90 |
| 1960 | 87 | 13·1 | 96 | 1·8 | 14 | 67 | 0·7 | 5 | 78 | 4·5 | 34 | 97 | 1·9 | 15 | 143 | 4·1 | 31 | 102 |
| 1961 | 102 | 14·5 | 109 | | | | | | | | | | | | | | | |

*Notes on Table 2*

1. *Source : National Income and Expenditure,* 1960 and for 1961 *Economic Statistics,* 1962.

2. Expenditure on "other buildings" includes expenditure on land reclamation and rehabilitation.

3. The totals in the Table include investment spending on fixed assets only. Movements of stocks for the period 1953—60 were as follows (£m in 1953 prices): 6·0; —3·5; 5·2; —1·0; —0·3; 2·4; 10·3; —1·0. Taking stock changes into account the index with respect to total investment moved as follows: 100; 96; 110; 96; 81; 83; 96; 88.

4. The statistics for Ireland in Table 1 are not necessarily on exactly the same basis as those set out in this Table as in order to make the various national statistics consistent the O.E.E.C. secretariat may have had to make various adjustments to the original Irish data.

5. It is estimated that about 51% of the 1961 level of investment was in the form of "Dwellings, Roads and Other Buildings"; about 17% in transport Equipment; and about 32% in Machinery.

TABLE 3: OUTPUT AND INVESTMENT: IRELAND AND O.E.E.C. COUNTRIES

| | Ireland | | | O.E.E.C. Countries | | |
|---|---|---|---|---|---|---|
| | Real GNP 1953=100 | Gross Fixed Investment as % of GNP | Real Gross Fixed Investment 1953=100 | Real GNP 1953=100 | Gross Fixed Investment as % of GNP | Real Gross Fixed Investment 1953=100 |
| 1948 .. | 87 | 11·4% | 57 | 76 | N.A. | 72 |
| 1949 .. | 91 | 14·0% | 76 | 81 | 16·0% | 79 |
| 1950 .. | 92 | 16·5% | 90 | 88 | 16·2% | 86 |
| 1951 .. | 94 | 18·5% | 102 | 92 | 16·6% | 90 |
| 1952 .. | 98 | 16·8% | 99 | 95 | 16·8% | 92 |
| 1953 .. | 100 | 15·3% | 100 | 100 | 17·1% | 100 |
| 1954 .. | 102 | 16·3% | 108 | 105 | 17·7% | 110 |
| 1955 .. | 103 | 16·7% | 113 | 111 | 18·6% | 123 |
| 1956 .. | 101 | 16·3% | 105 | 116 | 18·9% | 130 |
| 1957 .. | 103 | 13·7% | 88 | 121 | 19·3% | 137 |
| 1958 .. | 99 | 13·9% | 91 | 124 | 19·1% | 141 |
| 1959 .. | 102 | 13·9% | 95 | 130 | 19·5% | 151 |
| 1960 .. | 106 | 14·5% | 102 | 137 | 20·2% | 165 |

*Notes on Table 3*

1. *Source :* As in Table 1

2. The statistics in the Table relating to Ireland (derived from O.E.C.D. sources) do not tally exactly with those in Table 2 (derived from official Irish sources). The Table below presents the information corresponding to Cols. 3 and 4 for the period 1953–61 using the official Irish sources :—

| Year | Real G.N.P. 1953 prices | | Real Gross Fixed Investment 1953 prices | |
|---|---|---|---|---|
| | £m | 1953=100 | £m | 1953=100 |
| 1953 .. | 526 | 100 | 79 | 100 |
| 1954 .. | 532 | 101 | 85 | 108 |
| 1955 .. | 542 | 103 | 89 | 113 |
| 1956 .. | 534 | 102 | 83 | 105 |
| 1957 .. | 541 | 103 | 70 | 89 |
| 1958 .. | 519 | 99 | 69 | 87 |
| 1959 .. | 543 | 103 | 72 | 91 |
| 1960 .. | 569 | 108 | 76 | 96 |
| 1961 .. | 595 | 113 | 86 | 109 |

TABLE 4: PUBLIC CAPITAL PROGRAMME 1956-7-8 and 1961-2-3

| | Aggregate of 1956/57 and 1957/58 | | | Aggregate of 1961/2 and 1962/3 | | |
|---|---|---|---|---|---|---|
| | Amount £m | % of Total | % of GNP | Amount £m | % of Total | % of GNP |
| Building and Construction | | | | | | |
| Housing .. .. .. .. | 22·5 | 26 | | 19·9 | 16 | |
| Schools .. .. .. .. | 2·9 | 3 | | 3·7 | 3 | |
| Hospitals .. .. .. .. | 2·6 | 3 | | 0·5 | * | |
| Sanitary etc. .. .. .. .. | 6·4 | 7 | | 7·0 | 6 | |
| Total .. .. | 34·4 | 40 | 3·2 | 31·0 | 25 | 1·7 |
| Agriculture etc. | | | | | | |
| Agriculture .. .. .. .. | 8·7 | 10 | | 27·5 | 22 | |
| Agricultural credit .. .. .. | 0·7 | 1 | | 2·6 | 2 | |
| Forestry .. .. .. .. | 2·1 | 2 | | 3·1 | 3 | |
| Fisheries .. .. .. .. | 0·4 | 1 | | 0·4 | * | |
| Total .. .. | 11·9 | 14 | 1·3 | 33·6 | 27 | 1·8 |
| Fuel and Power .. .. .. | 20·0 | 23 | | 18·0 | 14 | |
| Telephones .. .. .. .. | 2·8 | 3 | | 5·9 | 5 | |
| Transport .. .. .. .. | 14·6 | 17 | | 9·4 | 8 | |
| Industry .. .. .. .. .. | | | | 8·3 | 7 | |
| Industrial credit .. .. .. | 0·3 | * | | 8·8 | 7 | |
| Other .. .. .. .. .. | 2·8 | 3 | | 8·9 | 7 | |
| Total .. .. | 86·9 | 100 | 8·1 | 124·1 | 100 | 8·5 |

*less than 1%

*Notes on Table 4*

*Sources:* Capital Expenditure from 1961 and 1962 *Financial Statements.* G.N.P. estimates for 1956 and 1957 taken from *National Income and Expenditure,* 1960 and for 1961 from *Economic Statistics,* Pr. 6509. For 1962 an ERI forecast of £748m has been used.

ponding reduction in the demand for capital in the sectors which are declining or remaining unchanged. Nevertheless the order of magnitudes are such as to suggest that even if full allowance is made for these factors the capital stock in 1960 was probably more than adequate for the level of output achieved.

It is also possible that surplus capacity tends to arise in Ireland because of the size of the market. In a number of industries the minimum economic size of plant may be bigger than the market really justifies but the presence of tariff protection and the expectation of growth may persuade businessmen to install such plant even though it will be excessive in relation to existing demand.

A third possible explanation of the high capital output ratio may be the quality of the co-operating factors of production. If Irish entrepreneurs were not particularly good at organising their businesses, in assessing markets, in maintaining good labour relations and getting the best out of the working force, or not particularly cost conscious then it would, of course, be likely that capital would be wasted and be unproductive. Similarly, if the labour force was not well trained, educated, healthy, experienced, hardworking and enthusiastic it is doubtful if increases in the stock of capital would have very startling effects on the level of output. In the Paper it was suggested that the capacity to create wealth resides primarily in the people of a country and it is believed that this is so with respect to Ireland. And though it is true that in part people may be "improved" (from an economic point of view) by education, medical care, and training it is equally true that some of the qualities most important with respect to economic development such as enthusiasm, ruthlessness, self-confidence and optimism, and the qualities we particularly mentioned in the Paper i.e. "enterprise, drive, perseverance, diligence, and inventiveness" are not easily taught or obtained and created by the spending of money on social development; and yet without a population with such characteristics it is unlikely that large sums of money spent on the acquisition of capital assets will produce a high rate of economic growth.[7]

## PLANNING SOCIAL EXPENDITURE

In the Paper it was suggested that "human investment" —particularly expenditure on education —was an important element in economic develop-

[7]One of the arguments for encouraging foreign investment in Ireland is the belief that this will lead to an injection of business leadership, managerial ability, drive, knowledge, and technical skill and thus supply some of the essential ingredients needed for a rapidly growing economy; the lack of which being a major reason for the under utilisation of Irish labour and capital.

ment. Attention was concentrated upon the expenditure by governments on social development. Now in the case of Ireland any such statistics would give an inadequate picture of the amount of resources being devoted to such activities for a considerable amount of money is spent by the citizen directly on education and medical care and also indirectly through contributions to voluntary organisations of various kinds. Unfortunately, little material exists concerning these private expenditures[8] and in this Note we shall make reference only to the expenditures of Public Authorities.

Tables 5(*a*) and 5(*b*) set out some statistics concerning Government spending on social services during the past few years : on the whole they speak for themselves but it is desired to draw attention to one or two points. The first relates to the relative constancy of the share of social service current expenditure with respect to total current expenditure and the Gross National Product and to the composition of such expenditures, though there has been a slight increase in the relative importance of expenditure on Health. The second point is that during the period covered by the Table there has been a decline in the share of government capital expenditure going to the social services. This follows the adoption of the policy in *Programme of Economic Expansion* we noted above. Particularly important has been the decline in public capital expenditure on housing. This was reflected in Table 2 and it shows up clearly in Table 4. Because of the relative size of current expenditures to capital expenditures the overall ratio of social service expenditure to total government expenditure has remained roughly constant ; though in comparison with the Gross National Product there has been a decline.[9]

A main theme of the Paper was the need for careful research and thought as a background to the consideration of what is the appropriate allocation of money to the various social services. Little such work has been done in Ireland, and until it is done it would be wrong to offer an opinion as to the present adequacy or inadequacy of public spending on the provision of social services. All that is perhaps worth doing at this stage is to make a few comments in the spirit of the "pure empiricism"

[8]It would be a most useful research project to produce estimates of such expenditures.

[9]It is interesting to note that roughly the same proportion of the Gross National Product is spent by the various Public Authorities on the social services as is devoted to Gross Fixed Capital Formation.

TABLE 5(*a*) : GOVERNMENT EXPENDITURE 1953/54–1960/61

| | Current Expenditure | | | | Capital Expenditure | | | | Total Expenditure | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total £m | Social Service Expenditure | | | Total £m | Social Service Expenditure | | | Total | | Social Service Expenditure | | |
| | | Amount £m | % of Current Spending | % of GNP | | Amount £m | % of Capital Expenditure | % of GNP | £m | % of GNP | £m | % of Total | % of GNP |
| 1953/4 | 122 | 59 | 48% | 11·1% | 49 | 17 | 34% | 3·1% | 171 | 32% | 75 | 44% | 14·3% |
| 1954/5 | 127 | 65 | 51% | 11·6% | 49 | 15 | 30% | 2·8% | 176 | 33% | 79 | 45% | 15·0% |
| 1955/6 | 134 | 65 | 48% | 11·7% | 44 | 13 | 30% | 2·4% | 177 | 32% | 78 | 44% | 14·2% |
| 1956/7 | 142 | 71 | 50% | 12·6% | 53 | 13 | 25% | 2·3% | 195 | 35% | 84 | 43% | 15·0% |
| 1957/8 | 145 | 74 | 51% | 12·6% | 41 | 8 | 20% | 1·4% | 186 | 32% | 83 | 44% | 14·2% |
| 1958/9 | 147 | 75 | 51% | 12·6% | 38 | 6 | 17% | 1·1% | 185 | 31% | 82 | 44% | 13·6% |
| 1959/60 | 154 | 78 | 50% | 12·2% | 43 | 7 | 15% | 1·0% | 197 | 31% | 84 | 43% | 13·3% |
| 1960/61 | 168 | | | | 50 | | | | 217 | 33% | | | |

TABLE 5(*b*) : SOCIAL SERVICE EXPENDITURE, 1953/4–1960/61

| | Current Account | | | | | | | | Capital Expenditure | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Education | | Health | | Social Welfare | | Housing | | Gross Fixed Investment | | Transfers Grants etc. | |
| | £m | % of GNP | £m | % of GNP | £m | % of GNP | £m | % of GNP | £m | % of GNP | £m | % of GNP |
| 1953/4 | 13 | 2·5% | 11 | 2·1% | 31 | 5·9% | 3 | 0·6% | 11·2 | 2·1 | 5·4 | 1·0 |
| 1954/5 | 14 | 2·6% | 12 | 2·3% | 32 | 6·0% | 4 | 0·7% | 9·9 | 1·9 | 4·8 | 0·9 |
| 1955/6 | 14 | 2·5% | 14 | 2·5% | 33 | 6·0% | 4 | 0·7% | 9·2 | 1·7 | 4·2 | 0·8 |
| 1956/7 | 15 | 2·6% | 16 | 2·8% | 36 | 6·4% | 4 | 0·7% | 9·5 | 1·7 | 3·6 | 0·6 |
| 1957/8 | 15 | 2·6% | 16 | 2·7% | 39 | 6·6% | 4 | 0·7% | 5·9 | 1·0 | 2·5 | 0·4 |
| 1958/9 | 16 | 2·7% | 16 | 2·7% | 39 | 6·5% | 4 | 0·7% | 4·5 | 0·7 | 1·9 | 0·3 |
| 1959/60 | 17 | 2·7% | 17 | 2·7% | 39 | 6·2% | 5 | 0·7% | 4·0 | 0·6 | 2·6 | 0·4 |
| 1960/61 | | | 18 | 2·7% | 41 | 6·1% | 5 | 0·7% | | | 3·0 | 0·5 |

section of the Paper. Table 5(*c*) sets out some figures from the article referred to in the Paper (para. 79) by Professor Lewis. Putting alongside the figures for Ireland from Tables 5(*a*) and 5(*b*) it would seem that with respect to Gross National Product the overall spending by Public Authorities does not seem unreasonable—though a few differences in composition are suggestive. There is an indication for example that expenditure on education may be a little low and on housing perhaps a little high.

A similar impression with respect to education is suggested by statistics compiled from the 1961 *World Social Report* (which are included in the Notes to Table 5), and from Table 6 which is derived from the recently published 1962 Unesco *World Education Survey*. This latter table is interesting both in showing the relatively small amounts

TABLE 5(*c*): SOCIAL SERVICE EXPENDITURES: LEWIS AND MARTIN. % OF G.N.P.: 1953/4

| | Education | Health | Housing | Social Insurance | Total |
|---|---|---|---|---|---|
| U.S. .. | 2·4 | 0·9 | 0·2 | 3·5 | 7·0 |
| U.K. .. | 3·5 | 3·3 | 0·7 | 5·8 | 13·3 |
| France | 2·0 | 1·6 | 0·1 | 3·5 | 7·2 |
| Italy .. | 3·0 | 2·1 | — | 4·3 | 9·4 |
| Sweden | 4·3 | 2·6 | 0·1 | 5·6 | 12·6 |

*Notes on Tables 5(a), 5(b) and 5(c)*

1. The Tables include the expenditures of the Central Government, the Local Authorities and the Social Insurance Fund.
2. *Sources:* Tables 5(*a*) and 5(*b*).
   - A. Gross National Product, Current Expenditure and Capital Expenditure from *National Income and Expenditure*, 1960. Tables 1 and A14.
   - B. Education (Current Account) from Table 206 of the 1961 *Statistical Abstract* and corresponding table from earlier *Abstracts* for years before 1956/7.
   - C. Health (Current Account) from Table 185 of the 1961 *Statistical Abstract* and corresponding tables from earlier *Abstracts* for years before 1957/8.
   - D. Social Welfare (Current Account) from Table A17 of *National Income and Expenditure*, 1960. This item includes Social Insurance and Assistance Payments, childrens allowances, widows and orphans pensions etc.
   - E. Housing (Current Account) which is taken as the deficit (subsidy) on Local Authority Housing Accounts from Table A13 of *National Income and Expenditure*, 1960.
   - F. Gross Fixed Investment Expenditure (Public Investment in spheres of Housing, Health, Public Assistance and Vocational Education) from *National Income and Expenditure*, Table A18. Capital formation in Sanitary Services is excluded.
   - G. Grants etc. represents Capital Grant to households for housing purposes and Grants to Universities and to the Hospitals Trust Fund. See *National Income and Expenditure*, 1960, Table A17. Grants paid to Hospitals and Institutions under the direction of the Minister of Health from Hospitals Trust Board funds are not included. In 1959/60 these payments amounted to £1·20m and in 1958/9 to £1·46m (Table 192 of 1961 *Statistical Abstract.*) The fact that substantial capital funds have been available for hospital development through the Trust Board has been a major factor in bringing about the high standard of hospital provision in the State: it is interesting, for example, to note that in England and Wales in 1959 the ratio of people to hospital beds was 90 : 1; in Ireland the corresponding ratio was 50 : 1.
3. Current Expenditures on Social Services in 5(*a*) is the sum of B.C.D.E. above i.e. the sum of the figures set out in Table 5(*b*).
   Capital expenditure in 5(*a*) is the sum of F. and G. above i.e. the sum of the figures set out in Table 5(*b*).
4. Table 5(*c*) is derived from the statistics published in W. A. Lewis and A. Martin ("Patterns of Public Revenue and Expenditure", *The Manchester School*, September, 1956). Social Insurance includes all civil and military pensions, public assistance and social security benefits. So far as is possible only current expenditures are included.
   The following statistics with reference to 9 of the 41 countries covered in the analysis of Public Expenditures for Social Purposes in the 1961 *World Social Report* relating to 1958 are perhaps worth noticing.

EXPENDITURE AS % OF G.N.P.

| | Education | All Social Purposes |
|---|---|---|
| Portugal .. .. .. | 1·3 | 3·4 |
| Belgium .. .. .. | 2·6 | 5·6 |
| Germany .. .. .. | 3·3 | 11·7 |
| Italy .. .. .. .. | 2·6 | 5·2 |
| Netherlands .. .. .. | 3·1 | 7·6 |
| France .. .. .. | 2·2 | 8·0 |
| Norway .. .. .. | 3·2 | 8·7 |
| Sweden .. .. .. | 4·6 | 15·1 |
| U.K. .. .. .. .. | 4·1 | 15·4 |

Details of sources and of various qualifications to the figures (which in the broad relate to current expenditures) may be found in the Notes to Table 3 on p. 175 of the *Report*.

of money (in $U.S.) spent on education in Ireland as compared to the other European countries which are listed[10] and—which is more important—the fact that Ireland seems to be educating a relatively small percentage of the important 15-19 age group. For a country that is wishing to progress rapidly from an economic point of view and is not particularly well endowed with raw materials it is probably most important to ensure that the population is well educated and trained.[11]

Comparisons of the above type are interesting and stimulating but it must be repeated that they do not of themselves provide the basis for conclusions with respect to the allocation of government moneys. This sort of work and the other approaches referred to in Section IX of the Paper are, however, a necessary preliminary for the taking of rational decisions in this field.

It is believed that this sort of research and investigation is particularly important in Ireland as due to the way the various social services are organised there may be considerable scope for an improved allocation of Public Funds, and it is thought that the establishment and work of a Social Development Research and Planning Unit might serve to bring about such an improvement. What is in mind is this. It is considered that the obtaining of an appropriate or correct allocation is difficult because of the considerable number of authorities involved. In the case of health, for example, Local Authorities are the chosen instrument through which State support is channelled and to a very substantial extent the initiative as regards the level and composition of such expenditures rests with them. In the spheres of education, too, though considerable sums of public money are involved initiative as regards the level of expenditure and its allocation does not in the last analysis rest with the Department of Education; Universities, Vocational Education Committees, School Governors, Local Authorities and Religious and other Voluntary organisations tend to have the powers of initiative and leadership. A similar division exists with respect to Housing.

[10]The percentage of National Income devoted to education is not particularly low in Ireland in comparison with other European countries: yet because of her low National Income per head the amount of money available is relatively small. This would not matter too much if the cost of the various inputs needed to provide educational services—including the salaries of teachers—were correspondingly low for then a relatively small amount of money (in, say $U.S.) would enable a good quantity of real resources to be employed. This does not tend to be the situation: the supply of teachers *is* influenced by the level of salaries in Great Britain and in Northern Ireland and the cost of educational pre-requisites also tends to approach the U.K. level. In this instance the Irish situation has something in common with the Africa dilemma discussed in the Paper (see Para. 6, etc.).

[11]It is, of course, appreciated (see para. 74–77 of the Paper) that if a country has a high rate of emigration much expenditure on education and training may be wasted from an economic point of view. On the other hand emigration may be due in part to lack of economic growth which in turn may be caused by the lack of an appropriate flow of educated and trained personnel.

TABLE 6.: EXPENDITURE ETC. ON EDUCATION, ABOUT 1958

| | Public Expenditure on Education as % of National Income | Expenditure per head of population in $ U.S. | % of Age Group 15–19 being educated |
|---|---|---|---|
| Italy .. .. .. | 3·0 | 12·9 | 39 |
| Denmark .. .. | 3·9 | 33·8 | 82 |
| Ireland .. .. | 3·4 | 15·7 | 36 |
| Sweden .. .. | 3·1 | 40·7 | 42 |
| U.K. .. .. .. | 4·0 | 36·4 | 88 |
| Belgium .. .. | 5·2 | 46·4 | N.A. |
| Greece .. .. | 1·6 | 9·3 | N.A. |
| Netherlands .. .. | 5·1 | 37·5 | 87 |
| Norway .. .. | 4·5 | 41·2 | 50 |

*Notes on Table 6*

1. *Source: World Survey of Education*, Vol. III, UNESCO, 1961 especially Tables 17 and 11. In making international comparisons of this type it is, of course, most difficult to be sure that one is comparing like with like and the figures must be taken only as indicating the broad orders of magnitude. The translation of National currencies into $ U.S. has been done by using the official I.M.F. exchange rates.

2. The U.K. figures in cols. 3 and 4 are with respect to England and Wales. The corresponding figures for Scotland are 53·2 and 69 and for Northern Ireland 33·6 and 75.

3. The figures in col. 4 relate to General, Technical/Vocational and Teacher training courses except for U.K. (England, Wales and Scotland) which do not include Teacher Training.

This division of power and responsibility, and general decentralisation, though it has very many advantages has disadvantages when it comes to pursuing a rational and consistent policy with respect to the allocation of public funds for social development and with integrating social development with economic development. It is, of course, not being suggested that the advantages from this point of view of centralised control outweigh the advantages of the existing system. Moreover the power of Ministers arising from the influence they can exert on the provision of finance is in practice considerably greater than their formal position would suggest.[12] What is being suggested however is that the present organisation of the social services does make planning more difficult and makes it more likely that social development will not get its appropriate share of the available resources and that these resources themselves may not be used in the most effective and productive manner. This in turn could have unfortunate effects both from a welfare point of view and also from the point of view of economic development. One of the main functions of the Research and Development Unit would be to supply objective data[13] which would provide a proper basis for co-ordinated planning and the allocation of public funds. It is believed that the reports and recommendations of such a central and impartial body would reduce the possible dangers of having so many decision makers and pressure groups and thus help to maintain the real advantages that flow from a division of powers.

[12]Under existing arrangements the Department of Finance exercises a general supervision over government spending and priorities are of course co-ordinated at Government level. The Government is also well aware of some of the inadequacies of the present situation. In his recent budget speech, for example, the Minister for Finance referred to the fact that a Select Committee of Dáil Eireann is examining various aspects of the Health Services and the Minister for Education has recently announced that there is to be a survey of educational needs conducted under O.E.C.D. auspices.

[13]Details of the type of work such a Unit might do are given in Sections IX and X of the Paper.

## THE ECONOMIC RESEARCH INSTITUTE

**Publication Series :**

1. *The Ownership of Personal Property in Ireland*
   Edward Nevin

2. *Short Term Economic Forecasting and its Application in Ireland*
   Alfred Kuehn

3. *The Irish Tariff and The E.E.C.: A Factual Survey*
   Edward Nevin

4. *Demand Relationships for Ireland*
   C. E. V. Leser

5. *Local Government Finance in Ireland : A Preliminary Survey*
   David Walker

6. *Prospects of the Irish Economy in* 1962
   Alfred Kuehn

7. *The Irish Woollen and Worsted Industry,* 1946-59 *: A Study in Statistical Method*
   R. C. Geary

8. *The Allocation of Public Funds for Social Development*
   David Walker

**Reprint Series :**

1. *Commentary on "Europe's Future in Figures"*
   R. C. Geary