REGIONAL SOCIAL ACCOUNTS FOR THE UNITED KINGDOM[1]

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Estimates of gross domestic product have been produced by various writers or agencies for Scotland, Wales, and Northern Ireland, and for Wales there are estimates of expenditure also; but only a very tentative attempt has hitherto been made at estimates for the English regions, mainly because the data present difficulties. In the present investigation, in which the estimates in the Bluebook on National Income and Expenditure are partitioned between regions, item by item, a production method was first explored, but this was replaced by use of Inland Revenue data on employment and self-employment income, and production and miscellaneous sources on profits etc. Estimates of expenditure raise particular difficulties in regard to private capital formation and, for different reasons, some parts of public current expenditure.

The estimates have been used to throw light on interregional variations in income produced per head and earnings per head, and their relation to activity rates and industrial structure. The flows of property income, and of public transfers of purchasing-power and benefits between regions are also explored, along with regional current balances and evidence bearing on differences in pressure of demand. Finally, the scope for the development of regional social accounting in the United Kingdom is discussed.

When we were asked to undertake the preparation of this paper, it was suggested that it might consist of four parts; the status of regional accounting in the United Kingdom, the conceptual and empirical problems to be resolved, the uses of regional accounts, and a conclusion. The first of these sections has caused us relatively few sleepless nights; the status of regional accounting in the United Kingdom can be summarised in one word—"neglected". It has, however, been less neglected in some regions than in others, the degree of neglect being roughly proportional to the paucity of the available sources, and both of these having an inverse connection with the degree of administrative independence and the degree of political self-consciousness of the region.

Thus, for Northern Ireland we have N. Cuthbert's estimate of total civilian income published in 1951[2], Carter and Robson's work on the same subject published in 1953[3], and that of C. F. Carter published in 1959[4], followed by the publication from 1968 of official estimates of gross domestic product in the Northern Ireland Statistical Digest.

For Scotland, there are no official estimates, but we have A. D. Campbell's pioneer work published in 1954 and 1955, followed by McCrone's estimates of

[1]The work described here is part of a project at the National Institute of Economic and Social Research sponsored by the Department of Economic Affairs. The details of the principal estimates made are to be published by the NIESR in *Occasional Papers on Regional Economics*, No. 1 (provisional title).

[2]N. Cuthbert: Total Civilian Income in Northern Ireland, Journal of the Statistical and Social Inquiry Society for Ireland, 104th. Session.

[3]C. F. Carter and Mary Robson: A comparison of the National Incomes and Social Accounts of Northern Ireland, the Irish Republic, and the United Kingdom: Journal of the Statistical and Social Inquiry Society of Ireland, 108th. Session.

[4]C. F. Carter: Estimates of the Gross Domestic Product of Northern Ireland, 1950–1956; J.S.S.I.S.I., 112th. Session.

a decade later.[5] For Wales, we have estimates of both gross domestic product and expenditure by the Welsh Economic Research Group under Edward Nevin, published in 1956 and 1957.[6]

For the English regions, there is nothing known to us except the bold and exploratory attempt at a complete set of regional accounts by Phyllis Deane, published in J. R. N. Stone's contribution to a survey of regional planning techniques.[7]

When, therefore, first one and then both of us became involved in an attempt at the National Institute of Economic and Social Research to survey and analyse United Kingdom regional problems and policy on a fairly comprehensive scale, the absence of any useful basis of regional social accounts presented itself as both a grave handicap and a challenge. The reasons why we have devoted a good deal of time to meeting this challenge will fall to be discussed later. First, it may be best to consider the technical problems of preparing useful estimates from the available data, dealing with certain accompanying conceptual problems as they arise.

Problems of Estimation—G.D.P.

The reasons why estimates of gross domestic product have been produced for Northern Ireland, Scotland, and Wales, but not as reliably for the English regions are, as we have already remarked, partly a matter of national self-consciousness and motivation, but the basic technical reason lies in the availability for those three parts of the U.K. of separate Census of Production data, more frequent and detailed than those for the English regions, and, in the cases of Northern Ireland and Scotland, of detailed annual Inland Revenue returns partly sub-divided by schedule and industry. McCrone used the Census of Production as his basic material, so far as it would go; Carter and Robson and Nevin also used an industry-by-industry approach, while Campbell and Cuthbert used something more like the approach through total factor incomes.

In our estimates, we experimented first with something like a production method, taking, in effect, the United Kingdom estimates of gross domestic product sub-divided by industry as in Table 17 of the National Income Bluebook and seeking reasonable bases for distributing each industry total between the regions. For the manufacturing industries, the Census of Production provides an excellent basis in a census year; for other years some method of extrapolation from the last census is necessary, and we did not find any method better than one based upon changes in regional shares of employment in each industry. For non-manufacturing industries, a variety of methods had to be used.

Agricultural production was first partitioned between regions, product by product, on the basis of livestock numbers and of crop acreages weighted by

[5] A. D. Campbell: "Income" in A. K. Cairncross (ed.) The Scottish Economy, 1954, and "Changes in Scottish Incomes, 1924–1949", Economic Journal, 1955

Gavin McCrone: Scotland's Economic Progress, 1951–1960, 1965.

[6] The Social Accounts of the Welsh Economy, 1948–1952 and 1948–1956: Welsh Economic Studies Nos. 1 and 2, 1956 and 1957.

[7] J. R. N. Stone: Social Accounts at the Regional Level; A Survey, in Isard and Cumberland (eds.) "Regional Economic Planning"; OEEC, 1961.

yields. (In later estimates, allowance was made, working from *Farm Incomes, 1965* and *Output and Utilisation of Farm Produce in the U.K.*, for the varying extents to which cereals produced in a region are fed to livestock, and to which livestock are fed on grass or non-purchased cereals as opposed to purchased feedingstuffs.) For coal-mining, gas, and electricity, the statistics of the relevant nationalised industries enable net product to be divided between regions with reasonable confidence, limited chiefly by the adjustments that have to be introduced to adapt the published statistics to standard regional boundaries. For construction, where the great bulk of the labour-force is male, some guide to the regional distribution of the wage-bill can be obtained by weighting the distribution of the labour force by the relevant average weekly earnings, and one then hopes that the wage-bill forms roughly the same proportion of net output in all regions. Income from ownership of dwellings can be partitioned reasonably well on the basis of Schedule "A" assessments for owner-occupied dwellings and the Family Expenditure Survey for rented ones. Income from retail distribution can be divided in proportion to turnover as given by the Census of Distribution.

Some of these devices, however, are already pretty flimsy, and one has not yet covered two-thirds of the gross domestic product. Beyond this point, one is driven further and further in the direction of assuming that net output per head is the same in all regions, or that it is higher in the South-East than elsewhere to an extent of which "London Weighting" provides a measure, or that it varies between regions in proportion to some index of regional personal incomes from employment as a whole. This is hardly satisfactory. We did, however as a preliminary exercise, carry out a calculation of this sort, purporting to relate to the year 1959–1960 (chosen because it coincided with the Inland Revenue Survey of Personal Incomes, and was not too far from the 1958 Census of Production, nor from the 1961 Censuses of Population and Distribution). The results were obtained by dividing out the various industry products in the Bluebook Table 17 on the principles that have just been briefly indicated, and a check, of a kind, was provided by comparing the resulting industry products and total gross domestic products for Northern Ireland, Scotland, and Wales with the corresponding estimates by the Northern Ireland Cabinet Office, McCrone and Nevin. The degree of correspondence obtained was not entirely discouraging as regards the whole gross domestic product, though it suggested that little reliance could be placed upon the regional figures for single industries outside manufacturing, coal, gas and electricity.

On further consideration, it seemed that an income method would do better for estimating regional gross domestic products, and we used such a method to make estimates for the years 1961 and 1964. In the first place, the Inland Revenue Surveys of Personal Incomes provide regional totals of wages and salaries in cash that are fairly easy to adjust to Bluebook definitions, with a high degree of reliability. These cover two-thirds of gross domestic product for the U.K. as a whole, and, apart from some difficulty which increasingly arises from the centralization of firms' records, they relate to the region in which the income is produced. Income from non-agricultural self-employment is rather more complicated, but can also be allocated from Survey data, the region of assessment again coinciding with the region of work in the overwhelming majority of cases. Secondly, gross trading profits of manufacturing companies can be allocated to the region of production by making use of the Census of Production figures of net output *minus* wages and salaries and making national adjustments, industry by industry, for the purchase of inputs from outside the manufacturing sector. One objection to this procedure is that, like the Census of Production itself, it ignores (or rather mislocates) the contribution to production of clerical and head office staffs not located in or near the firm's manufacturing establishments—particularly, in this case, those in London. We made no adjustment for this. A comparison of the numbers employed in the manufacturing establishments covered by the Census of Production with statistics of total employment in manufacturing industry suggests that the regional bias introduced by allocating profits according to Census of Production data is insignificant, except in regard to the South-Eastern Region. On the assumption that the *per capita* contributions made to profits by operatives and by clerical workers are equal, the result of an adjustment would be to raise G.D.P. per head of total population in the South-East by about one per cent in relation to G.D.P. per head in the rest of the country.

Income from self-employment in agriculture (which is greatly underestimated in the Inland Revenue Survey, partly because farmers represent themselves as paying wages to their wives), can be calculated by the method already referred to—distributing gross outputs by product according to crop and livestock statistics, and making allowances for regional variations in the differences between gross and net outputs. Agricultural rent can be distributed between regions on the basis of Agricultural Land Service surveys and Ministry of Agriculture data. Business rent paid can be assumed, rather unsatisfactorily, to be proportional to rateable value of all non-domestic buildings. Rent and imputed rent of dwellings in our estimate for 1961 was distributed by the method mentioned already—Schedule "A" and the Family Expenditure Survey; for 1964 we used numbers of dwellings weighted by average rateable value per dwelling as our basis.

This leaves us with the gross surpluses of public corporations and the gross profits of companies outside the Census of Production industries. The gross surpluses of the N.C.B. and the gas, water, and electricity industries can be fairly well apportioned from their accounts—just as their total net products can. Transport and communications present graver problems, both conceptual and statistical. In so far as the gross surplus is intended to cover plant and equipment overheads, it should perhaps be regarded as generated in the regions where the equipment is housed. In the estimates for 1964, it was possible to apply this criterion to about half the transport and communications surplus. The criterion leaves one with further problems where the equipment is highly mobile, as with railway rolling stock. For the time being, we took the cowardly course of distributing the surplus of the railways and some smaller undertakings in proportion to the relevant employment.

The real problems, however, arise in regard to the profits of non-manufacturing, privately-owned companies. Four-fifths of them arise from distribution, transport and other services, and construction. For retailing, about a third of the total, we have the turnover of non-independent establishments from the

Census of Distribution, (all of which can reasonably be assumed to relate to companies) and some indication of the distribution of independent establishments not already taken into account through earnings of self-employed persons can be got by comparing the distribution of total independent establishments with that of the relevant self-employed. Finally we come to the residue—wholesale distribution, private transport, and construction—for which it is hard to see any better device than distributing the gross profit in proportion to numbers occupied in each industry as given in the Census of Population. Fortunately, we are dealing here with only about 2½ per cent of G.D.P.—for all the rest we are, at any rate, not starting with an assumption about one of the main things we ultimately want to learn about—average income per head.

The regional gross domestic products calculated in this way for 1961 check well against independent estimates for Wales, Scotland, and Northern Ireland. That for Wales falls 1.1 per cent below Nevin's figure for the same year, that for Scotland 3½ per cent above McCrone's figure for 1960. The figure for employment and self-employment income in Northern Ireland is almost identical with the official one—there is no official G.D.P. figure for that year. Since we have not used any sources or methods for these particular regions different from those we have used for the English regions, we may hope that our estimates for the latter are of a similar order of reliability to the estimates hitherto published for, at least, Wales and Scotland.

Problems of Estimation—Expenditure

Estimates of expenditure by regions are bound to rest largely upon the Family Expenditure Survey, which is the only substantial source relating to consumers' expenditure—nearly two-thirds of the expenditure total. As a source, it has weaknesses. The figures most nearly relevant to 1961 are those for expenditure (by some 3,000 households each year) in the three years 1961–1963. The sample, over the three years, is however, only of a few hundred households in the smaller regions, and the standard errors of regional expenditure averages are therefore appreciable—several per cent in some cases. One can make the best of the material by applying it, for each head of expenditure, to the inter-regional distribution of the United Kingdom totals from the Bluebook, which are corrected for certain known deficiencies of the Family Expenditure Survey—most notably the heavy under-reporting of expenditure on alcoholic drink and tobacco, on which customs and excise figures provide a check.

The regional distribution of public authorities' current expenditure presents at least one difficulty of principle, namely, the attribution to regions of expenditure on defence production and research. Where is the equipment purchased with this expenditure "consumed"? The convention adopted was that it is consumed where it is produced, and the total in question was therefore distributed in proportion to regional employment on defence contracts. Apart from this, there are no great difficulties. The services of the armed forces are distributed according to the Census data of numbers in the regions; those serving overseas are excluded, as their product (pay in cash and kind) was excluded in this calculation from regional gross domestic products. Central government administrative services were also distributed according to numbers for 1961, but for 1964 we used the distribution of the relevant wages and salaries recorded by the 1965–1966 Inland Revenue Survey. Reasonable bases exist in National Health Service and local authority statistics for distributing the great bulk of social service expenditure.

Gross domestic fixed capital formation presents much greater difficulties—at least on the statistical side, and particularly for 1961. Public expenditure of this kind should not raise great problems, and, indeed, from 1964–1965 onwards regional public expenditures on new buildings and works are published. For 1961, a more piecemeal approach is necessary. On the distribution of road expenditure, information was kindly supplied by the Ministry of Transport. On residential building, housing starts and completions and regional indices of average values were used. For works and buildings connected with health and education, official sources were adequate, but plant and machinery in these services had to be assumed to be distributed in the same proportions. For the nationalized industries, a reasonable amount of information is, in general, available.

The private sector, however, (before 1964, when sample information about orders received by contractors becomes available) is harder to cope with. For manufacturing industry, (apart from iron and steel, for which there is direct information) we have the industrial development certificate figures. Comparison of these, for more recent years, with orders received by contractors, however, shows a strong bias—i.d.c. building is a much smaller proportion of all industrial building in the regions where certificates are harder to get. We could think of nothing better than to apply corrections for this bias (derived from years since 1964) to the 1961 i.d.c. figures. Manufacturing plant and machinery is harder still—one of the two darkest areas encountered in this exercise. We divided the Bluebook totals of replacement in each industry between regions in proportion to the relevant employment; new additions we divided for each industry in proportion to our estimates of new building. Distribution and other services constitute the other area of great darkness. There we distributed replacement in proportion to turnover and net investment in proportion to change in turnover. Expenditure on road vehicles can be allocated by reference to registration statistics. Ships, railway rolling stock and aircraft, however, present the conceptual difficulty we have noted before in connection with inter-regionally mobile equipment. We assumed that aircraft and railway rolling stock were 'used' in the various regions in proportion to railway and airline employment respectively, and that ships could be allocated to regions in proportion to use of their ports by British shipping.

For 1964, things are better, because we have the sample statistics of orders received by contractors, which cover the whole of building and construction reasonably well. There is a big improvement—too late for the present estimates—in regard to manufacturing plant and machinery from 1966–1967, when the Investment Grant statistics begin. As a check on our rather patchy estimates of regional expenditure for 1961, we have only a comparison of our Welsh figures with those of Nevin. The two are within one per cent of each other. We think our regional expenditure totals are probably reliable within about 6 per cent.

The Uses of Regional Accounts

This brings us to the reasons why one makes estimates of this kind. Perhaps we should speak for ourselves. As we have remarked already, we embarked upon these estimates as part of a research project on British regional problems and policy, in which we had very wide terms of reference—virtually to write the best book we could about British regional economics in three and a half years. The first thing we wanted to know from our estimates was how much incomes differ between regions, and the most immediate reasons why they differ. Of course, we already know a good deal about inter-regional income differences without constructing accounts. We know about differences in family income (and the extent to which they are connected with differences in average family composition) from the Family Expenditure Survey, though the margins of error for the smaller regions are considerable. We know a great deal about personal income differences from the Inland Revenue Survey, though this is complicated by the use of "tax units" (unmarried taxpayers or married couples) rather than persons as the units of reckoning. Both of these sources, however, tell us about incomes received, not about incomes produced in the regions. The difference is considerable. On a calculation that assumes dividends proportional to profits, the South-Eastern and South-Western regions receive net transfers of occupational pensions and similar payments and of property income from the rest of the country (or the outside world) to the amount of some £20 to £25 per head of total population. All the other regions, except Scotland (which breaks even) and Northern Ireland (which has a smaller net receipt) make a net payment of between £16 and £21 a head, or some four or five per cent of gross domestic product. The transfer of occupational pensions and property incomes is, of course, not the only cause of discrepancy between regional product and pre-tax personal incomes received in the region; there are inter-regional differences in per capita receipts of personal grants from public authorities, but they are relatively small—they seem to have been about £8 a year higher in Wales, where they were highest, than in the West Midlands where they were lowest. Over and above this, of course, the gross domestic product of a region includes undistributed profit, which does not enter into personal incomes at all.

Having, then got our estimates of gross domestic product by region (as opposed to gross regional product, or regional personal income), the first use that suggests itself is the analysis of inter-regional *per capita* differences. Gross domestic product per head of total population in 1961 was about 11 per cent above the national average in the South-East (including East Anglia, where it was presumably a good deal lower than this) 8 per cent above in the Midlands, near to the average in the East and West Ridings, the North-West, and the North Midlands, 10–14 per cent below in the North, Scotland, and Wales, and 36 per cent below in Northern Ireland. A little of the differences (a sixth of Northern Ireland's deficiency in particular) was due to variations in the proportion of the population that was of working age; these variations showed some positive correlation with income. A good deal more of it was due to variations in the proportion of the population of working age that was working; this proportion was 18 per cent higher in the South-East than in Northern Ireland, to quote the extreme cases. Making a rough allowance for part-time workers by counting them as fractions of full-time, the productivity per unit of the labour force in work seems to have been 5½ per cent above the national average in the South-East, nearly as high as this in the North Midlands, within two per cent of the average in the North Region, the East and West Ridings, the West Midlands, and Wales, about 4 per cent below in the North-West and South-West, 9 per cent below in Scotland, and 23 below in Northern Ireland.

This range of productivity differences per person in work is much smaller than that occupied by regional products per head of total population; also, the relative positions of regions are somewhat different. In particular, the effects of the low female activity rates in Wales and the North and the high one in the North-West become apparent; Welsh G.D.P. per head of total population is two percentage points below, that of the Northern Region one point below, and that of the North West three points above what they would have been with the national average levels of female activity rate.

The next question one is likely to ask is how far the differences in product per person in work are the result of differences in industrial structure. An attempt was made to provide a complete analysis of regional income by industry and between employment and other income, as is done for the United Kingdom in Table 17 of the Bluebook. Since, however, the foundation of the estimates in single industries outside manufacturing, coal-mining, agriculture, and construction was dubious, being more than a little contaminated in many cases by the use of numbers occupied in the industry in question as a basis of inter-regional distribution, the extent of useful analysis in this direction is limited. Capital-intensiveness is clearly one of the chief variables affecting net output per head, and it varies both between and within industries. An analysis of variance between net outputs per head by region and industrial order in the manufacturing industries showed that industry is a highly significant variable, region only marginally so, though (unweighted) average net outputs in certain regions do, in fact, deviate significantly from the mean. In particular, outputs in London and the South-East are significantly high, a fact that has been confirmed in a separate investigation.

With earnings, the story is different. There, data are subject to similar limitations, though we have, in addition, the Department of Employment and Productivity statistics relating to male manual workers. Average earnings by region for all full-time employees in the five groups agriculture, coal-mining, manufacturing, construction, and the rest show a good deal of regional variation —the South-East is above average in all groups, Scotland, the North-West, the East and West Ridings are low—as, of course, is Northern Ireland except that coal-mining is not represented there. Welsh earnings are generally low except in manufacturing (where the labour-force is more largely male than in most regions), the West Midlands stands high except in coal-mining; the South-West markedly low except in agriculture. Differences between the five industry-groups are more striking; coal-mining is always top, agriculture always bottom despite the fact that both these industries are overwhelmingly male employing. The inter-regional variation in the big industry groups (manufacturing and "other") however, prevents structure, in this very broad sense, from dominating differences in the overall averages of earnings. It may be added that, so far as male manual earnings in "manufacturing and certain other industries" are concerned, an analysis at minimum list heading level shows that the parts of inter-regional differences attributable to deviations from the national pattern of industrial structure are relatively small. Wales is quite substantially favoured by its structure, the Midlands also, though somewhat less so; Northern Ireland has a markedly unfavourable structure. Elsewhere, there seems to be little structural effect on average earnings in these industries as a whole.

So much for a first glance at the uses of the accounts (and some related data) for revealing income differences and then explaining them in a very simple sense. A second topic on which they should throw light is inter-regional transfers of income. Something has already been said about the portion of this which is due to what might be called the extra-regionality of property ownership and (non-state) pension entitlements—broadly, the midlands and north of England transferred to the south in 1961 some £450 million. In addition to this we have the transfers brought about by public authorities. It is possible to estimate the regional incidence of current taxation from the same sources that have been used for the estimates of product and expenditure. Inland Revenue data on income tax and surtax paid by residents in Wales and the English regions are not available before 1964–1965, and our main estimate of public sector expenditure and receipts by region has been made for the year 1964, for which we have also made estimates of regional product and expenditure as a whole. The evidence is, however, that there was very little change between 1961 and 1964 in the regional distribution of tax and surtax. The incidence of taxes on corporate income can be estimated by distributing the revenue from each industry between regions in proportion to our estimate of gross profits. Taxes on expenditure, local rates, and national insurance and health contributions present no special problems.

The result of such a calculation, for 1964, is that, whereas public revenue from taxes was about £188 per head of the total U.K. population, it was some £226 a head in South-Eastern England and only £118 in Northern Ireland; of the new standard regions, only the South-East and the West Midlands appear to have paid more than the national average per head. Apart from Northern Ireland, the regions with the smallest per capita payments were the Northern region and Wales, both paying £156. All the other English regions and Scotland fell within a fairly narrow range between £166 and £178 a head.

The other side of the picture—payments received from public authorities—presents greater difficulties. Some of it is obscure; the main point is that we do not know the regional distribution of receipts from public debt interest and we have omitted this from our calculations.

Apart from difficulties with data, however, there are important distinctions of principle to be made if one is to be clear about the meaning of the results obtained. For instance, public expenditure (considered alongside revenue) can be looked at as altering either the inter-regional distribution of effective demand, or the inter-regional distribution of welfare—money income *plus* publicly-provided free benefits. Of these, the transfer of effective demand is, at first sight, the simpler. Against the total public revenues from current taxation in each region one can set the total public expenditure in the region—current and capital expenditure on goods and services, already estimated as part of total regional expenditure, *plus* grants and subsidies and (ideally) debt interest which we have omitted. Some of the items in question present great practical difficulty; we have, for instance, distributed the subsidy to British Rail in proportion to the numbers of employees, which certainly under-estimates the shares of the more peripheral regions—a more systematic allocation of losses would present great difficulties. Fortunately the agricultural production grants were available by Ministry of Agriculture regions, the price guarantee assistance was readily distributed for each main commodity, and housing subsidies were obtainable in local authority detail from the Ministry of Housing and Local Government.

When grants, subsidies, and public domestic expenditure on goods and services are combined, they amount (for 1964) to £191 per head of the total U.K. population, or £3 more than current tax revenue. For South-East England, however, they were £20 less than the corresponding revenue figure, and for the West Midlands £31 less, whereas for Scotland, Wales and Northern Ireland they *exceeded* revenue by £32, £51 and £62 respectively. The English region to which there was the largest net *per capita* transfer, thus calculated, was the South West (£57), chiefly because of the relatively large military and central government administrative payments made there. The Northern region received a net transfer of £16 a head, chiefly because of its low per capita tax payments; Yorkshire and Humberside was near to the national average position, the East Midlands received a net payment of about £11, but the North-West, with lower gross per capita receipts (especially in capital formation) than most other regions, paid current taxation in excess of receipts by about £14 a head.

There thus seems to be a considerable tendency for public authorities to transfer purchasing power to the peripheral regions of the country. The interpretation of these estimates, however, requires caution; much of the expenditure treated here as being "in" a particular region no doubt consists of payments made in other regions, or abroad, for inputs into the region in question. To track these would, of course, be a major task.

It is easier to interpret the expenditure by public authorities that may be regarded as conferring mainly local benefits on the various regions—that is to say, the total public expenditure in the regions excluding that on military defence and central government administration[8]. For the country as a whole, such expenditure was in 1964 about £34 a head less than current tax payments; for South-East England and the West Midlands it was £72 less and £59 less respectively, but for Wales, Scotland, and Northern Ireland it exceeded tax payments, by about £27, £7, and £38 a head respectively. There cannot be much doubt about the substantial nature of the transfer of benefits from England to the other parts of the United Kingdom. It should be noted, however, that a good deal of the benefit to, especially, Scotland and Wales, calculated here for the year 1964, consisted of public capital formation, which shows a considerable year to year variation.

A further use of regional accounts in which we have been interested is to throw light on regional current balances. The difference between a region's gross domestic product and its expenditure (or absorption of goods and services) is,

[8]We are still omitting debt interest for lack of information about its regional destinations.

of course, its net exports of goods and services. The figures in question in estimates such as ours are obviously subject to wide margins or error, but in looking at the matter three times over—in preliminary estimates for 1959–1960 and more careful estimates for 1961 and 1964—one becomes aware of a consistent pattern to which some significance can be attached, and which receives some confirmation from consideration of some of the means by which the relevant net flows of goods and services are financed—the inter-regional income payments and net transactions with the public sector which have just been discussed.

Broadly, Yorkshire and Humberside (or its predecessor, the East and West Ridings), the two midland regions, and the North-West seem to have consistent net export balances ranging from £20 to £50 per head of their respective total populations, or something like £600 million altogether. South-East England breaks even, and the Northern region is probably not far out of balance, taking one year with another; on the other hand the South-West and Northern Ireland have net import balances of the order of £70–£80 a head, and Wales and Scotland smaller ones. The South-West finances its import balance by inflows of funds under the headings of both property income and net receipts through public channels; Northern Ireland from receipts mainly under the public head. Wales, with a net outflow of property income partly balancing the inflow of public funds, presents the most striking case of a substantial inflow of non-governmental capital being required to explain part of the heavy net inflow of goods and services. The nearly zero net balance of South-Eastern England seems to be consistent with its net inflow of property income etc. nearly balanced by a net outflow of funds through public channels. It must, of course, be remembered that data on the receipt by persons of public debt interest would somewhat modify this picture.

The net exports of a region can be looked at as part of its non-consumption expenditure, the total of the parts of its expenditure that may, in a simple Keynesian analysis, be treated as autonomous, as opposed to consumption which is treated as a function of disposable income. This non-consumption expenditure—comprising government expenditure on goods and services and private capital formation besides net exports—is readily calculated as the difference between our estimates of G.D.P. and consumption; both among the more reliable of our statistics. It is interesting to note that, in both the 1961 and the 1964 estimates, the per capita non-consumption expenditure is strikingly lower in Northern Ireland, Scotland, Wales, the Northern region and the South West than elsewhere. In the first four of these cases, low non-consumption expenditure is associated with high unemployment; in the South-West it is not, and the fact is presumably to be explained by the lower propensity to save in a region where a substantial proportion of personal income comes from outside, so that local consumption is high in relation to domestic product. The low level of per capita non-consumption expenditure in the regions of high unemployment is, at all events, interesting, and leads one to ask which of the components of this expenditure are low in particular regions. In Northern Ireland, it is entirely the large import balance that is responsible; in Wales it is responsible for the greater part of the shortfall, in Scotland for rather over half of it, private investment and public current expenditure also being rather low. In the Northern region it was public expenditure, both capital and current, that was low. It is clearly wrong to interpret these data in a mechanical way. Many considerations besides the present one bear upon the desirability of, for instance, capital expenditure in a region. The analysis does, however, open the way for some considerations of regional demand deficiency that might well be useful.

A final use for regional accounts that we have considered is as a starting-point for input-output models of regional economies. Nevin[9] used his Welsh accounts in this way, applying national coefficients to Welsh industrial outputs and deriving flows between Welsh industries and industries outside Wales mainly as residuals. We have not very high confidence in this method for general application, nor do we think that the industry products derivable for English regions, outside the Census industries, are sufficiently reliable to be used as starting-points in anything but a very rough calculation. Colleagues in the National Institute of Economic and Social Research are attempting to supplement the regional accounts with estimates of inter-regional trade derived from road and rail traffic census data, and these estimates may be of some use to anyone attempting to follow in Nevin's footsteps. They are, however, useful in this connection only as a check on whatever is calculated, assumed, or discovered about inter-regional flows of goods, since they contain no information on, for instance, the industrial destinations (as opposed to the regional destinations) of particular flows.

CONCLUSION

The main points that emerge, then (apart from the particular numerical results we have just summarised) are as follows. The principal reason for the neglect of regional accounting in the United Kingdom in the past has been the lack of statistical data. Regional estimates of G.D.P. by the production method are still not possible, but from about 1964 one can produce reasonably reliable estimates of total regional G.D.P. (by adding together factor incomes) and total regional expenditure to show the major regional economic differences in the United Kingdom. Even for 1964, parts of the estimates are based on rather shaky data. The weakest point is the regional distribution of manufacturing investment in plant and machinery though even allowing for a fairly large error in this, the basic conclusions probably stand. From 1966–1967 this particular weakness is remedied by the Board of Trade investment grant statistics; another development that will improve accuracy for later years is the four-fold increase from 1967 in the sample size of the Family Expenditure Survey on which we based estimates of consumers' expenditure. It is unlikely that the broad pattern of regional differences we have described is significantly affected by data problems since it emerges in much the same shape in the detailed estimates for 1961 and 1964 and to a large extent, in our preliminary estimates for 1959–1960, despite differences in the sources and methods used. It is encouraging, too, that the methods we have used for all regions produce results for Scotland, Wales and

[9]Nevin, Roe, and Round: The Structure of the Welsh Economy; Welsh Economic Studies, No. 4: 1966.

Northern Ireland that agree pretty well with independent estimates for those parts of the United Kingdom.

In the future, regional G.D.P. estimates may rely on rather different sources from those we used. Development of Inland Revenue statistics as the basis of regional accounts seems at first sight to be desirable because of the availability of data, although there are problems arising from the present over-burdened system of tax administration through which they are derived. We used the quinquennial Inland Revenue Surveys to estimate total income from employment and non-agricultural self-employment in each region. Since 1965–1966, the Surveys by region have been produced annually with a much smaller sample. But when comparison is made between the number of tax cases in employment and independent statistics of employment and other regional economic indicators, it is apparent that the Surveys, for 1965–1966 and 1966–1967 at least, do not reliably reflect the numbers in employment in the regions. The main source of error is probably the recent tendency towards the centralisation of employers' records for tax purposes. If this tendency continues, it may become better to rely on an expansion of the new earnings survey carried out by the Department of Employment and Productivity than to work with Inland Revenue sources. The development of Inland Revenue statistics, e.g. to produce regional figures of employment income by industry, would encounter difficulty also from the fact that their industrial classification is that of the firm, whereas the DEP Survey conforms to the national accounts classification, being based on the establishment.

We gather that regional estimates of net output, on which our estimates of trading profits of companies are largely based, will in future be derived from annual surveys by the new Business Statistics Office (BSO), which are to replace the quinquennial Censuses of Production carried out by the Board of Trade. It is to be hoped that the BSO will make provision for more detailed regional statistics of production than have hitherto been available. Ultimately this source may provide the basis for regional estimates of G.D.P. by the production method.

The future of regional accounting in the United Kingdom clearly depends to a large extent on its official adoption. If it were officially planned to produce estimates of total regional expenditure and regional G.D.P., many regional statistics at present either not collected, unpublished, or compiled on an incorrect regional basis would become available at little extra cost; for example, income and expenditure of the central government, local authorities and public corporations. A framework would be established for the future development of regional statistics relating to the private sector to which all existing regional data and new statistical series could be adapted as they became available.

Whether this is worth while depends on the future scope and purposes of regional policy. We have given some examples of the information that regional accounts can yield. Their primary function would be to help in assessing the magnitude of regional problems in the United Kingdom and whether or not they are being eliminated by policy. They may also provide an important part of the basis for regional macro-economic planning. If these objectives are judged to be important, then official regional accounts will be called for, and their production should present no insuperable problems.