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INCOME REDISTRIBUTION THROUGH TAXATION AND SOCIAL SERVICES: SOME INTERNATIONAL COMPARISONS

by Colin Clark and G. H. Peters

REDISTRIBUTION of income through the levying of taxation and the provision of social services was one of the principal subjects discussed at the 1961 Conference of the International Association for Research in Income and Wealth. The seven papers on this subject which are presented in this volume summarize information on these matters from the U.S.A., the U.K., Germany, Denmark, Norway, and India. In addition, the editors have been granted permission to quote some of the principal results from another study for the United States, just completed and as yet unpublished, prepared by Professor P. K. Newman. It will be seen that Newman's results, which are summarized in an appendix to this Introduction, show the burden of taxation on the lower-middle ranges of income as being much higher than estimated in the paper by Professor Musgrave.

It was decided during the Conference that the editors of the volume of collected papers should attempt to make limited international comparisons of the incidence of taxation in the various countries considered by bringing together in a standard form the information to be found in each of the papers. This has proved to be a virtually impossible task, though a number of interesting features have appeared. It is the purpose of this Introduction to describe the broad aims of the papers and, in the process, to point to the difficulties of making firmly based comparisons.

At the outset a difference of approach may be distinguished. Some of the papers, noticeably those of Musgrave, Newman, and Aukrust, have as their aim the measurement of the tax burden imposed upon different income groups in the countries concerned. The interest is primarily in the effects of the collection of taxes, considerations of the ways in which the money collected is ultimately spent being deferred. Two other papers, those of Nicholson and Bjerke, take account both of tax collection and Government expenditures on the provision of social services of various types. The paper by Göseke is mainly

concerned with the first approach, but moves on, to a limited extent, to cover the second aspect as well. The paper by Mrs. Goldsmith falls into the first group with the qualification that she attempts to measure the incidence of income tax on various socio-economic groups. She considers fewer taxes than do Newman and Musgrave in their studies of the United States, but pursues the effects of the incidence of income taxes to a deeper level.

Professor Rao's paper, being concerned with an underdeveloped economy, falls into a different category. While the developed countries are more concerned with the distribution of the total income the preoccupation of the underdeveloped countries lies in raising incomes. While this difference is by no means clear cut, it does result in Professor Rao's paper standing apart from the others. Its aim is to discover whether the current taxation policy of the Indian Government is having effects favourable to the fostering of economic growth by transferring purchasing power into the hands of the entrepreneural class, who may be expected to use it in a way likely to accelerate development.

The papers of Goldsmith and Rao, then, must be left aside in the discussion which follows. It is also necessary to leave aside Aukrust's note on Norwegian data. The results of this investigation are presented only in differential incidence form and cannot easily be compared with the work contained in the other papers.

In studies of tax incidence at different levels of income a number of decisions must be made at the outset. These may cover the following points:

1. An income 'concept' must be chosen.
2. The types of taxes to be included must be decided upon.
3. A decision must be made as to whether the study is to cover 'persons' or 'family units'.
4. If taxes other than income tax are to be included, problems of 'incidence' will arise and must be settled.
5. If it is decided to study taxation affecting families it might be thought advisable to distinguish them by size groupings.
6. A choice as to the source of data must be made. Here a sample survey may or may not be preferred to the use of 'aggregate' data.

In the work of Musgrave, Nicholson, Bjerke, Newman, and Göseke with which we are concerned different decisions on practically all these points have been made. Nicholson, in his paper, chooses to use a sample survey method to investigate the effects of taxation and of 'welfare' expenditure on family units of different composition. The income concept used is that of family money income (this includes income in kind but not transfer payments received from the State). The direct taxes considered are income tax and surtax plus the national insurance contributions of both employees and employers, the latter being regarded as part of personal income. Indirect taxes covered include customs and excise duties and purchase tax on finished consumable goods, in both cases the incidence being assumed to fall entirely on the consumer, and local rates on the dwelling occupied by the household. (Indirect taxation on intermediate goods, e.g. on motor fuel for commercial vehicles, or rates on business premises, whose effects are diffused but may be expected ultimately to raise the price of consumption goods, are not taken into account: if they were, the total incidence of taxation shown would be distinctly higher.) Using this information, the effects of tax collection, and the incidence of taxes within each family size group, may be assessed. Then, however, Nicholson moves on to consider a wide range of direct and indirect benefits received by families. These include all Government transfer payments as well as the benefit obtained from the National Health Service which operates in Britain, and from State education. In essence the aim is to find 'break even' income points, for each family size, where tax payments are balanced by benefits received.

Göseke, in his study of Germany, proceeds in a quite different way. In the first place, he is concerned only with income tax and insurance contributions, using aggregate rather than sample survey data. His primary concern is with the incidence of these taxes on personal income from various sources (self-employment and private companies, wages, and salaries). At this stage he is not concerned with family units, but rather with individual income receivers. However, he then moves on to consider the effects of taxes on income and of direct transfer payments (other benefits excluded) on household income. There is no consideration of the effects on households of different sizes and compositions, as opposed to households having different incomes,

as in the Nicholson paper. There is, furthermore, an important difference in the choice of income concept used in the separate parts of the study. When considering taxes on incomes from self-employment and private companies the undistributed profits of the latter are included in the income concept. When households are considered only the distributed profits of the latter are regarded as forming a part of income.

Bjerke, in his work on Denmark, has yet another approach. His object is to measure the amount of income redistribution (through personal taxes and transfer payments) on families having incomes above and below Danish 'health insurance' limits. He uses aggregate data including direct income taxes on persons, indirect taxes and insurance contributions in his calculations. Unlike the other writers, he is less concerned with taxes paid and benefits received in a large number of income size groups, considering mainly the effects on the two broad groups above and below the health insurance limit. He does, however, include some supplementary information on direct taxes paid by persons falling into some nineteen income brackets.

These three European papers, then, are very much concerned with taxes on persons. The work of Newman and Musgrave, although they arrive at startlingly different results, is of a somewhat different type. They are concerned with the incidence of a wide range of taxes on family incomes of different sizes, but they do set out to discover the ultimate incidence of all taxes which are paid in the United States. As an example of this difference of approach they attempt to consider the incidence of taxes on companies and corporations, a feature which is entirely neglected in the other three papers. Unlike the other writers, they are also far more preoccupied with the difficulties of choosing an income concept for use as a tax base. Both of them are quick to point out that the degree of progression to be found in a tax system will vary considerably, depending upon the items chosen for inclusion as a part of income. To illustrate this we may consider the income totals appearing in Musgrave's paper. His basic starting-point is family personal income as defined in the Survey of Current Business. (This, it might be mentioned, already includes transfer incomes received on a regular basis.) The deductions from personal income to arrive at money income are more or less self-explanatory. However, the adjusted family income concept includes items which are not usually to be found

as a part of income in any of the European studies. For example, part of the taxes paid by corporations are regarded as falling on shareholders. These are allocated to income brackets as tax payments and equal amounts are allocated in the same way to become a part of income. Retained earnings of corporations are similarly allocated into income brackets as a part of income (see Musgrave, paragraph 37). In a similar way all of employees' contributions to social insurance, plus one half of the employers' contribution, are regarded as part of income. The distinguishing feature of Musgrave's study (and this applies also to Newman) is that taxes on corporations do become integrated into the calculations. Such a feature is not to be found in the other papers except in so far as Göseke is forced to give some consideration to private company profits. The other feature of importance is that the varying concepts of income are used as alternative tax bases.

TABLE I

Musgrave: Income concepts 1958

($ million)

Family personal income			338,000
Less:	Food to Government employees	1,966	
	Imputed rent	7,178	
	Farm home consumption	1,762	
	Imputed interest paid	9,022	19,928
Family money income			318,072
Plus:	Social security contributions	11,056	
	Retained earnings	6,512	
	Corporate profits tax	12,123	
	Realized capital gains	7,442	37,133
Adjusted family money income			355,205
Plus:	Deductions above		19,928
Family income – broad concept			375,133

Source: Musgrave, Table A-3.

Newman's work is in many ways similar to that of Musgrave in general method, though it covers a wider span of years. However, the results obtained are somewhat different. In part this is caused by use of an alternative source of income data. While Musgrave uses the *Survey of Current Business*,[1] Newman uses the University of Michigan *Survey of Consumer Finances*.[2]

[1] U.S. Department of Commerce, *Survey of Current Business*, April 1959, pp. 9–16.

[2] University of Michigan, *1960 Survey of Consumer Finances*, Ann Arbor, 1961.

As a basic distribution he uses the family money income concept of the S.C.F., which differs from personal incomes as defined by the S.C.B. in that it excludes non-cash items (compare Musgrave's conversion of family personal income to family money income) and also excludes income of 'persons' other than 'natural persons' (e.g. trusts, non-profit-making institutions), and excludes the incomes of migratory workers, of the institutional population, of persons living on military reservations and of American residents employed abroad. To 'broaden' the income concept corporate undistributed profits and 60 per cent of profits tax liability are added along with some elements of social security contributions and capital gains. Thus family money income for 1958, the only year which we can compare, becomes \$329,937 million (cf. Musgrave's \$318,072 m.), adjusted family money income, i.e. adding social security contributions, capital gains, etc., becomes \$352,454 million (cf. Musgrave's \$355,205 m.), while broadly defined income is put at \$365,782 million (cf. Musgrave's \$375,133 m.).

The important point to note at this stage is that the families in Musgrave's study are sorted into income classes on the basis of personal incomes, whereas in Newman's work it is money income which lies at the base of the classification. This has quite marked effects on the distribution of income by income classes. Using the 'broadest' concept of income in both studies, the following picture emerges:

TABLE II

Incomes by size groups, broadest concepts: Newman and Musgrave, 1958

Income range in \$	Musgrave		Newman	
	Total income \$ m.	% Distribution	Total income \$ m.	% Distribution
Under 2,000	9,542	2·5	16,033	4·4
2,000–3,999	40,662	10·8	43,076	11·8
4,000–9,999	186,454	49·7	193,934	53·0
Over 10,000	138,452	36·9	112,756	30·8
	375,133	100·0	365,782	100·0

Source: Musgrave – Table A-3. Newman – Appendix tables.

The difference in the results of the two papers can best be seen graphically. To do this it is desirable to plot the percentage of income taken in taxes in each income size group against the

percentage of family units in each income group as in Diagram 1. The base line is marked off in percentage terms, moving from poorer families on the left to richer families on the right. Thus, on Newman's total family income concept, the poorest 17 per cent of families pay just over 41 per cent of their income in taxation. However, one would expect that the percentage of families in each size group of income would change as the income concept changes; for example, in Musgrave's terminology the number of families in the under $2,000 range of income on the basis of personal incomes might be smaller than the number of families in that range on the basis of money income if non-money income is relatively important at this level. Unfortunately we do not have sufficient information to make these adjustments – all that is available is the S.C.B. percentage distribution of families based on personal income and the S.C.F. distribution based on money income. This is shown below.

TABLE III

Distribution of families within income groups

Survey of current business			Survey of Consumer Finances		
Income range $	% of families	Cumulated	Income range	% of families $	Cumulated
Under 2,000	14	14	Under 2,000	17	17
2,000–3,999	22	36	2,000–2,999	11	28
4,000–5,999	25	61	3,000–3,999	11	39
6,000–7,999	17	78	4,000–4,999	12	51
8,000–9,999	9	87	5,000–7,499	25	76
10,000–14,999	8	95	7,500–9,999	13	89
Over 15,000	5	100	Over 10,000	11	100
	100			100	

Source: U.S. Department of Commerce, *Survey of Current Business*, April 1959, p. 11.
Michigan University, *1960 Survey of Consumer Finances*, Table 1–2, p. 11.

Diagram 1 is plotted using the data of Table III, along with information in the Appendix relating to Newman's work, and Musgrave's Table II. The difference in results can be clearly seen. (To avoid undue complication, only Musgrave's broadly defined income results are shown.) Clearly both writers agree that the tax structure is somewhat regressive at low levels of income, while people in the middle ranges of income are comparatively

lightly treated. The Newman results, however, are far more startling than those of Musgrave – the writer himself admits to astonishment. When social security payments are excluded, as in Diagram 2, Musgrave's results point to a proportional system over a wide range with a hint of regressiveness at the lower end of the income range and a steep jump in range beyond 95th percentile of income receivers. Newman's results, on the other hand, still show a V-shaped distribution.

In making international comparisons of the incidence of taxation, one possible approach is to attempt to determine whether persons living in different countries who have roughly identical standards of living pay a greater or lesser proportion of their income in taxation. To do this, however, is particularly difficult, since it involves the use of some form of exchange rate

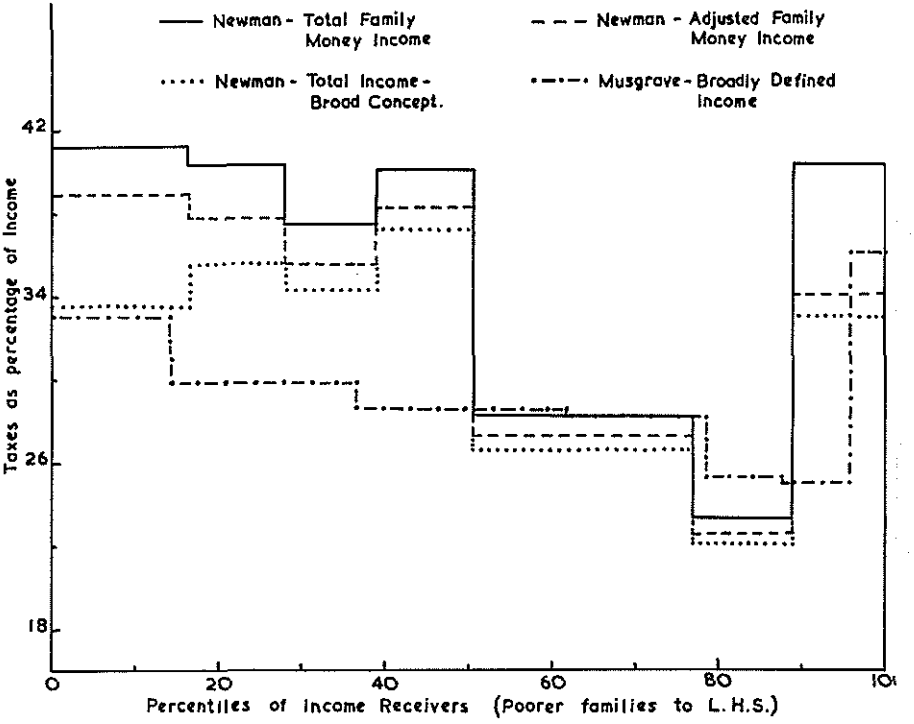

DIAGRAM 1. Musgrave and Newman, 1958: All taxes and social security payments as percentage of varying income base

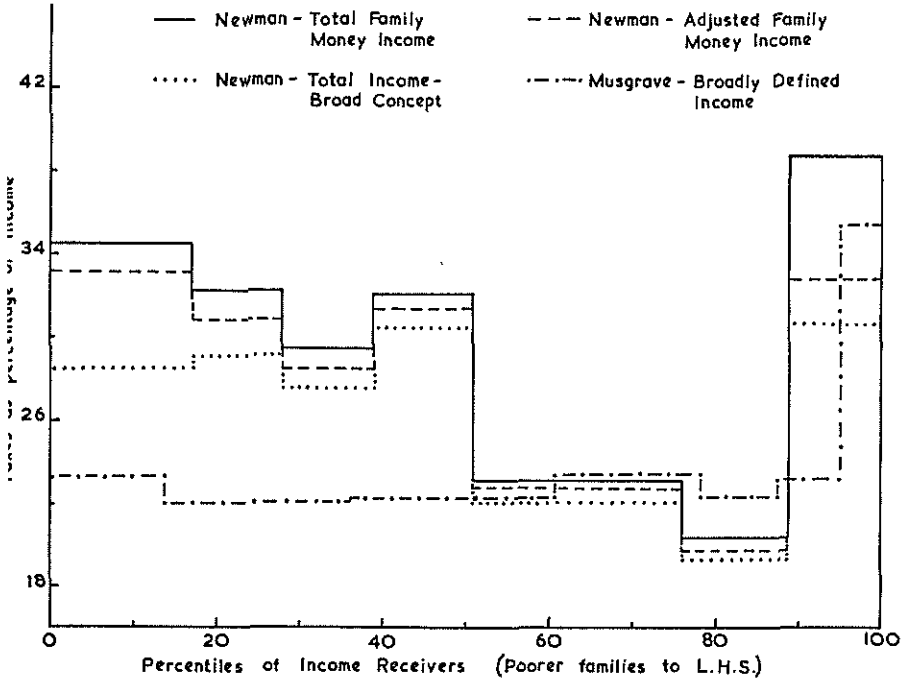

DIAGRAM 2. Musgrave and Newman, 1958: All taxes (less social security payments) as percentage of varying income base

to compare different currencies. It is far easier to avoid this type of operation and to ask the question, 'Do people at the same point in the income distribution in different countries pay different proportions of their incomes in taxation?' In order to do this the use of the technique of plotting introduced above may be extended for the purpose of making international comparisons. It can be applied to information contained in the papers by Musgrave, Newman, Nicholson, Bjerke, and Göseke. However, as mentioned previously, only very limited comparisons are possible.

It will be apparent, of course, that this method is only useful for comparing tax incidence and that it in no way enables comparative studies of the extent of redistribution to be made. For the latter purpose it is customary to plot Lorenz curves showing income distributions before and after taxation, expressing the change in the income distribution in terms of the

Gini coefficient of inequality. This method has not been used, since the preparation of Lorenz curves requires the drawing of a freehand curve through the data, on the face of it a comparatively easy task. The writers' experience, however, has been that, contrary to what might be expected, it is possible in good faith to draw several different freehand curves between any given set of points, and that the differences between them may be sufficient to invalidate the somewhat delicate comparisons between Gini coefficients; at any rate unless some ten or fifteen data, evenly spaced, are available.

The most comprehensive data which we have is that concerning income tax and social security payments. These may be dealt with first, the results being shown in Diagram 3. It must be stressed that the end product is extremely tentative, as will be seen when the derivation of the results is described. The steps employed are as follows.

(1) From the Musgrave paper Table 2 is used. Added together are 'Federal' and 'State and Local' individual income taxes and social security payments (lines 2, 6, 8, 13). It will be noted that the percentages of income so obtained are linked to the broadly defined income concept. When related to the personal income concept the results are:

TABLE IV

Musgrave: Incidence of income taxes and social security payments

Range of incomes in $	Under 2,000	2,000 to 3,999	4,000 to 5,999	6,000 to 7,999	8,000 to 9,999	10,000 to 14,999	15,000 and over
Total personal income $ m.	8,500	37,100	67,400	63,900	44,200	51,900	65,000
Taxes $ m.	1,197	5,497	9,950	9,090	5,432	6,614	14,539
Taxes as percentage of income	14·1	14·8	14·8	14·2	12·3	12·7	22·4
Tax as percentage of broadly defined income	12·5	13·5	13·6	13·5	11·7	12·1	17·4

Source: Musgrave, Tables A-1, A-3, 2.

The general picture which emerges is of a broadly proportional system of taxation with a steep jump towards the upper end of the income range.

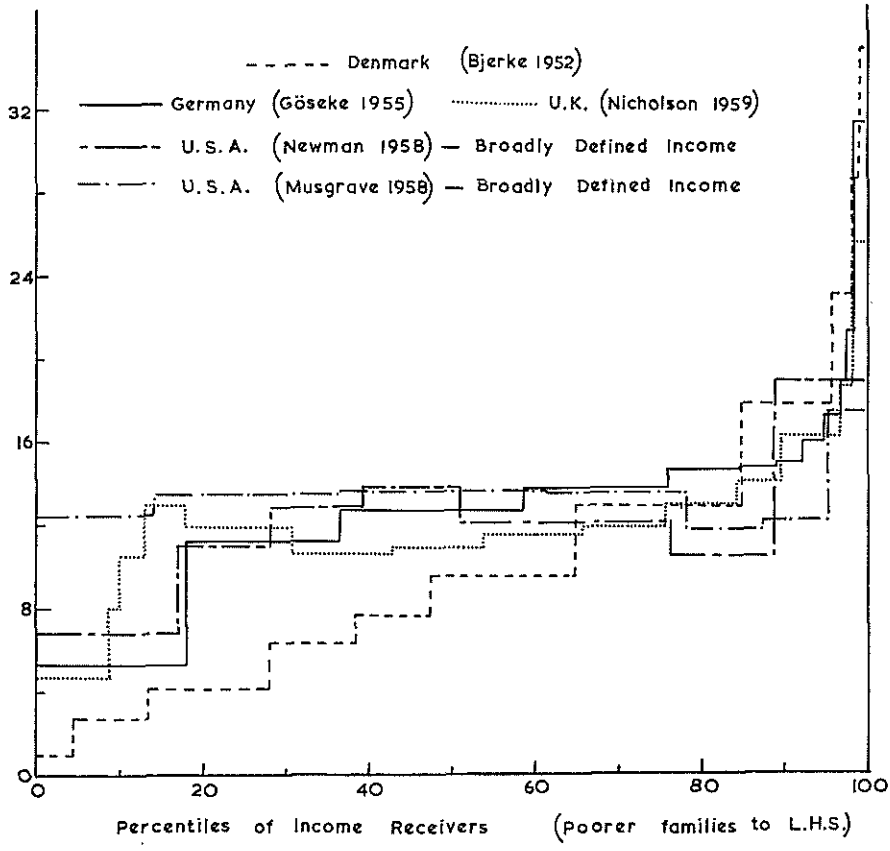

DIAGRAM 3. Income tax and social security payments as percentage of income in various countries

(2) From Newman's paper the use of the broadly defined income concept, the information being derived from the Appendix Table, produces a somewhat different result. There is some progressiveness at the lower end of the income scale covering the poorer 50 per cent of family units, followed by a dip in the percentage paid by the next 40 per cent of family units, with a more marked jump at the upper end than is recorded by Musgrave. This picture is little disturbed if alternative income concepts are used.

(3) As has already been stated, the object of the paper by Nicholson is to study the effects of taxation on family units of

varying composition, using sample survey data. However, it is a fairly simple task to re-tabulate his results in order to make them comparable with the work of Newman and Musgrave. The latter writers were concerned with the incidence of income taxes on families classified by income group alone without there being any explicit consideration of family composition. Consideration of Nicholson's Table Ic (in which he presents data for 1959) shows that he gives the numbers of families of each type falling into each income group. It is therefore possible to eliminate family size characteristics by taking each income range and summing the products of numbers of families and average pre-redistribution income (to obtain total incomes in each income bracket), and summing the products of numbers of families and average taxes paid, the latter being obtained from Table 2c (to obtain total taxes paid in each income bracket). The results of this exercise are shown below. It will also be noted that we can obtain from this procedure the numbers of families in each income bracket which we need for plotting purposes.

TABLE V

Nicholson: 1959, combined results

Income range £	Total income £	Direct taxes £	Direct taxes %	Indirect taxes £	Indirect taxes %	Families no.	Families %
Under 195	19,005	895	4·7	9,970	52·5	208	8·7
195–260	7,167	576	8·0	1,999	27·9	31	1·3
260–346	21,860	2,298	10·5	3,950	18·1	72	3·0
346–463	45,372	5,866	12·9	8,681	14·8	111	4·7
463–616	170,340	20,030	11·8	27,187	16·0	313	13·2
616–712	188,423	20,007	10·6	27,596	14·6	285	11·9
712–822	201,934	22,051	10·9	29,752	14·7	262	11·0
822–949	252,044	28,992	11·5	34,733	13·8	285	12·0
949–1,097	241,587	28,664	11·9	33,597	13·9	237	9·9
1,097–1,266	243,836	31,549	12·9	33,043	13·6	208	8·7
1,266–1,464	172,745	24,249	14·0	22,592	13·1	127	5·3
1,464–1,950	280,098	45,316	16·2	35,121	12·5	171	7·2
1,950–2,600	69,768	13,007	18·6	8,419	12·1	31	1·3
Over 2,600	193,462	49,349	25·5	9,954	5·1	44	1·8

As can be seen from Diagram 3, the result of this exercise is somewhat surprising. While the poorer 20 per cent and the richer 25 per cent of families grouped by income size are subject to progressive taxation, there is a rough proportionality in between these ranges. This aspect of proportionality compares very

strikingly with that revealed by Musgrave's study of the United States, though, as has been mentioned earlier, the Newman results are somewhat different.

(4) Comparisons incorporating German data are difficult to make. As already noted, Göseke presents information relating to taxes on personal and not on family, income within three broad social groups of income receivers – the self-employed, salary earners and wage earners. To incorporate this data, information from Göseke's Table 1. From these we simply add together the numbers of people involved, the total income and and their total direct tax payments (including social insurance contributions for employees). The results plotted on the diagram and shown in the table below cannot, of course, be regarded as comparable with the Newman, Musgrave, and Nicholson data. As would be expected, the personal taxation pattern which is revealed is progressive, and very steeply so within the upper decile of income receivers. There are indications, however, that by 1959 (this data is not shown in the diagram) the system had changed to proportionality for the 70 per cent of income receivers between the poorer 20 per cent and the richer 10 per cent groups. The way in which the pattern would be affected if family units were used rather than income receivers is, of course, impossible to predict.

(5) The Danish data presented in Bjerke's paper on taxation at varying income levels are limited. However, in his Table 13 he does give personal income tax as a percentage of personal income in nineteen income groups for 1952. Again this is not strictly comparable with the other data, since it is concerned

TABLE VI

Göseke: Germany, combined data, 1955 and 1959

Income range DM	1955					1959				
	Total income DM m.	Total tax DM m.	Tax as % of income	Persons		Total income DM m.	Total tax DM m.	Tax as % of income	Persons	
				No. (000)	%				No. (000)	%
Under 2,400	5,371	286	5·3	3,587	18.0	3,488	145	4.2	2,394	11.0
2,400–3,600	11,247	1,260	11.2	3,659	18·4	7,602	938	12·3	2,471	11·3
3,600–4,800	18,702	2,360	12·6	4,417	22·1	14,342	2,009	14·0	3,388	15·6
4,800–6,000	18,719	2,564	13·7	3,486	17·5	22,137	3,178	14·4	4,098	18·8
6,000–7,200	11,510	1,676	14·6	1,765	8·9	23,864	3,497	14·7	3,648	16·8
7,200–8,400	6,765	992	14·7	874	4·4	14,404	2,066	14·3	1,862	8·6
8,400–9,600	5,255	785	14·9	590	3·0	10,427	1,497	14·4	1,170	5·4
9,600–12,000	5,733	910	15·9	537	2·7	11,388	1,696	14·9	1,066	4·9
12,000–15,000	4,702	807	17·2	352	1·8	8,269	1,322	16·0	621	2·9
15,000–18,000	2,631	497	18·9	161	0·8	4,410	747	16·9	270	1·2
18,000–24,000	3,748	794	21·2	180	0·9	5,809	1,139	19·6	294	1·4
Over 24,000	32,317	10,069	31·2	302	1·5	49,273	15,866	32·2	488	2·1

with income receivers rather than with family units. Furthermore, the numbers of individuals in each income range are not quoted in the paper. However, this information can be obtained from previous work by Bjerke (*Income and Wealth*, Series VI, 'Changes in Danish Income Distribution 1939–1952', Appendix Table XXIX), though the number of groups must be cut to thirteen. The results, shown in the table below, when plotted, reveal the existence of a steeply progressive personal income tax structure.

TABLE VII

Bjerke: Norway, personal income tax, 1952

Income range kr.	Income tax payers %	Tax as % of income
0–1,000	4·7	1·0
1,000–2,000	8·6	2·8
2,000–3,000	14·6	4·1
3,000–4,000	10·3	6·3
4,000–5,000	9·1	7·7
5,000–7,000	17·7	9·5
7,000–10,000	19·9	12·8
10,000–15,000	11·1	17·6
15,000–20,000	2·3	22·9
20,000–30,000	1·1	28·6
30,000–50,000	0·4	34·8
50,000–100,000	0·15	40·4
Over 100,000	0·05	46·8

Source: Bjerke, Table 13, and *Income and Wealth*, Series VI.

We may now move on to consider the incidence of indirect taxes. In this field the available data is limited to the United States and to the United Kingdom; the results are presented in Diagram 4. The derivation of the data follows similar lines to those used in the study of income taxes. Thus Musgrave's data is taken directly from his Table 2 (applying to the broadly defined concepts of income), separate calculations being made including and excluding local property taxes. Data from Newman's paper for 1958 only is presented, relating to the broad concept of income and including Federal excise and customs duties, State and local sales taxes and motor vehicle licences. The information obtained from Nicholson's paper has already been tabulated in an earlier table (it might be noted, however, that for plotting purposes the first three groups are merged together). Diagram 4 clearly shows the regressiveness of the structure of indirect taxes in both countries. It is interesting to note, however, that according to Newman there is a very substantial drop in the effective rate of indirect taxes as move-

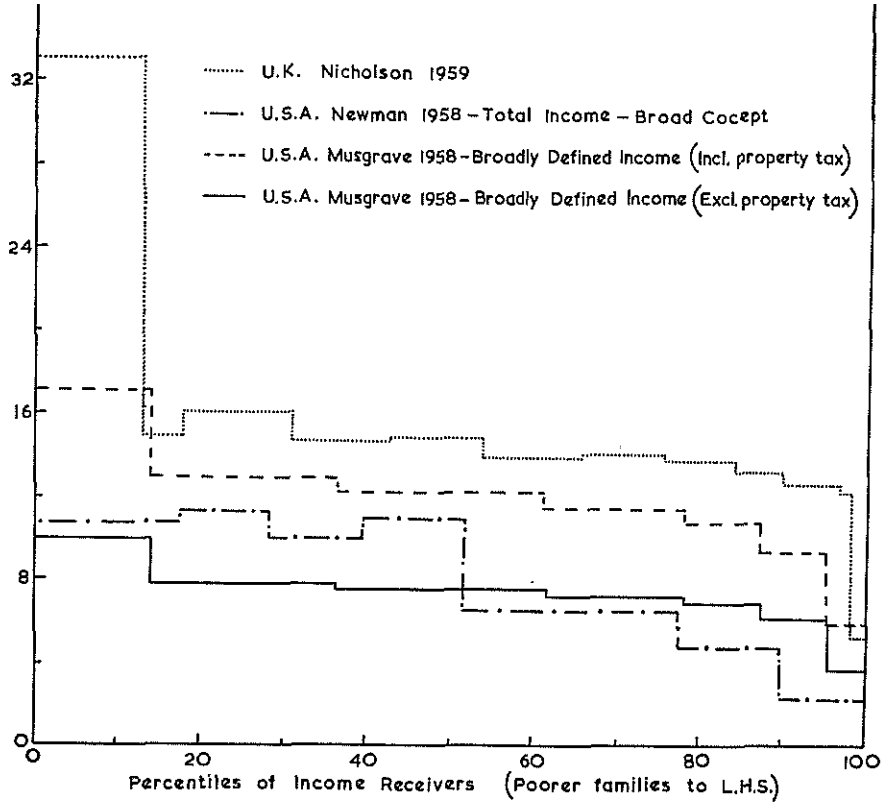

DIAGRAM 4. Indirect taxes as percentage of income in the U.S.A. and the U.K.

ment takes place along the income scale between the second and third quartiles of income receivers. There is also some indication from Newman's work that the indirect tax burden on the lower incomes was rising during the period 1955 to 1959 with the lower quartile paying out an extra 1 per cent of their income in this way. Quite obviously, too, the rates of indirect taxation applied in the United States seem to be substantially lower than those obtaining in the United Kingdom. Furthermore, in point of fact the discrepancy is underrepresented in that a fundamentally different method of approach is used in the American and British papers. Musgrave and Newman attempt to ascribe all indirect taxes to income groups, and would in this way include any indirect taxation which is paid on intermediate

goods. Nicholson, on the other hand, excludes this category of taxation from his results, and is concerned only with indirect taxes paid on final products.

It is unfortunately impossible to make any international comparisons of the benefits received by people in various income groups as the result of Government expenditure. It has already been noted that Newman and Musgrave do not consider this aspect of Government activity at all, while Nicholson, Göseke, and Bjerke, who do consider it, present their results in a widely different form. Göseke, in fact, is only concerned with direct transfer payments to households and does not attempt to value the services, such as education and health, which are rendered by the State. Bjerke does consider such expenditures, but, as has already been noted, he is interested only in two groups of people, those above and below the Danish 'health insurance' limit. However, it may be of interest to point to some of the consequences of the existence of a 'welfare state' as exemplified in Nicholson's results. This is of particular interest to one of the authors of this introduction, who in 1954 published a booklet titled 'Welfare and Taxation'. This caused some stir, since it stated that in Britain the manual workers and their families and dependents were being taxed at an average rate of £49 per person per year, or 25 per cent of their incomes, and receiving in benefits an average of £44. It was argued that if the 'welfare state' were dismantled, so that people had to obtain their social welfare requirements through voluntary organizations, but having at the same time the major part of what they now pay in taxation refunded, they might in the end be better off.[1]

The crude methods of analysis used in 'Welfare and Taxation' now become obsolete in the face of the much more detailed method of analysis adopted by Nicholson. However, before we can compare Nicholson's results with those of 'Welfare and Taxation' his data must be retabulated to some extent. Rather than present the results in terms of family income alone we now present them also in terms of income per head for each person in the family (this is a better measure than family income, though

[1] Naturally proposals for the complete remission of all taxation falling on the poorer sections of the community cannot be entertained. Whatever the arrangements of social services that are made, there will always be certain charges for roads, justice, defence, etc., necessarily falling upon public revenue. Political theorists and political practitioners alike agree that no section of the community should be entirely exempt from meeting a share of such charges, whatever they may think about desirable rates of progression of scales of taxation.

it is not perfect – at the same level of income per head, persons living together in a large family may enjoy certain 'economies of scale in consumption', and are better off than a person living alone on the same income). By dividing up the whole population sampled into percentage groups of varying size (because most people are interested in a finer sub-division of higher incomes) Nicholson's results may be shown in the following form.[1]

TABLE VIII

Nicholson: Income, benefits and taxes per person and per family, 1953 and 1959

	Average income £	Average tax £	Average benefit £	Benefits as % of income	Tax as % of income
		1953			
Distribution of families by income per family					
Top 1%	2,795	1,170	71	2·5	41·9
1 to 5%	1,304	426	94	7·2	32·7
5 to 10%	849	258	40	4·7	30·3
10 to 20%	794	203	142	17·9	25·5
20 to 50%	594	159	120	20·2	26·7
50 to 75%	428	123	98	22·8	28·7
75 to 100%	175	64	121	69·1	36·4
Distribution of persons by income per person					
Top 1%	1,098	453	26	2·4	41·3
1 to 5%	502	162	23	4·6	32·3
5 to 10%	385	123	24	6·2	31·9
10 to 20%	298	88	27	9·0	29·4
20 to 50%	196	53	40	20·5	27·3
50 to 75%	134	33	35	26·3	24·7
75 to 100%	75	24	57	75·3	31·7
		1959			
Distribution of families by income per family					
Top 1%	5,009	1,597	118	2·3	31·9
1 to 5%	2,291	642	126	5·5	28·0
5 to 10%	1,623	484	98	6·0	29·8
10 to 20%	1,289	352	117	9·0	27·3
20 to 50%	956	246	126	13·2	25·7
50 to 75%	667	169	134	20·1	25·3
75 to 100%	314	94	190	60·5	29·9
Distribution of persons by income per person					
Top 1%	1,863	593	37	2·0	31·9
1 to 5%	757	273	33	3·6	29·7
5 to 10%	606	167	27	4·4	27·5
10 to 20%	479	113	31	6·5	23·6
20 to 50%	326	87	42	12·7	26·7
50 to 75%	212	49	50	23·8	22·9
75 to 100%	116	32	76	65·6	27·7

[1] The results of this exercise are naturally somewhat crude. It has been assumed that, for each size of family and income group, all families and persons had an income equal to the average for the group. Had the table been constructed from the basic sample data, the detailed results would no doubt differ from those shown in the table. However, there is no reason to suppose that the general pattern would be different.

The information is graphed in Diagram 5. It should be noted here that we plot only the mid points of the percentile groups, rather than showing the results in histogram form, and that we begin with the richer families and persons to the left-hand side of the diagram rather than to the right-hand side as in earlier charts. The similarity in the shapes of the curves for per person and per family data is striking. Even more surprising, however, is the lack of progression in the taxation system. It will be noted that indirect taxes are included here and this naturally accounts for the regression at the lower end of the income scale. It will also be seen that there has been a marked reduction of progression between 1953 and 1959 towards the upper end of the income scale. The overall picture which emerges is, in fact, very similar to the state of affairs existing in the U.S.A.

It is clear that the tax systems of both countries, while they impose steeply progressive rates of taxation on the highest 5 per cent or so of incomes, are nevertheless seriously regressive in that they both tax the poorest families considerably more severely than those in the middle ranges of income. In the United Kingdom, families with a wide range of income, from nearly the lowest to nearly the highest, constituting, in fact, the great bulk of the population, pay taxes at an almost uniform rate. In the United States taxation is designed to fall most lightly on those in the upper quartile of incomes, just below the highest.

The results shown in Table VIII do furthermore bear out some of the conclusions of 'Welfare and Taxation'. In 1953, for example, the richest 1 per cent of persons were receiving benefits of £26 while the poorer 25 per cent received benefits of £57 on the average. At the same time even the poorer persons were being called upon to pay a substantial amount in taxation, most of it indirect. It should not be forgotten, furthermore, that a quite considerable part of indirect taxation receipts in Britain are obtained from the taxation of intermediate goods, the ultimate incidence of which may rest upon consumers. In addition, it is possible for income and profits taxes falling upon companies (these total £968 m. in Britain in 1953) in certain circumstances to fall ultimately on the consumer.

In conclusion a number of points emerge. It is clear from the study of the papers presented in this volume that taxation is now absorbing a considerable part of income. The effects of taxation policies, and any welfare expenditures which they may finance,

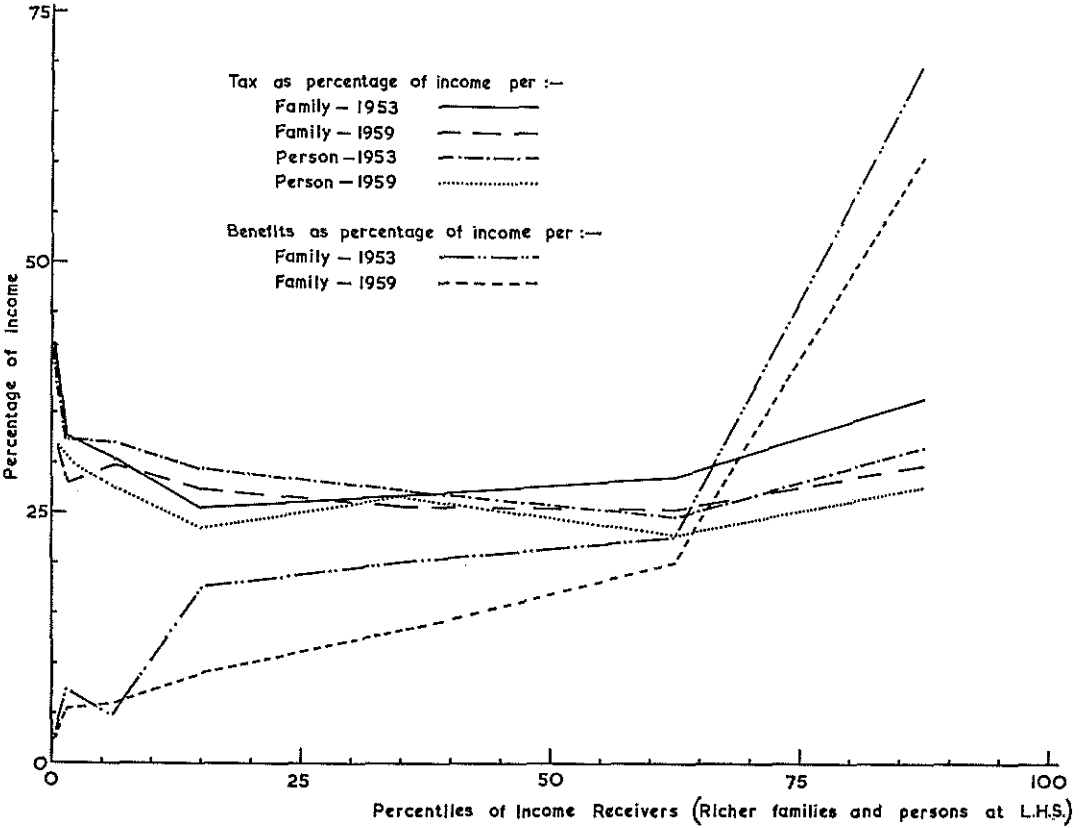

DIAGRAM 5. Incomes, benefits, and taxes as percentages of income in the U.K., 1953 and 1959

involve economists in some of the most difficult calculations which they are asked to perform. The papers which follow are all characterized by a high degree of finesse. However, it will have become apparent from the above discussion that the comparison of the results obtained is a most difficult task. The differences in the choice of methods have already been noted and it is clear that further progress is only likely to be possible if general agreement is reached as to what we wish to measure and as to the methods which are to be used. In the field of research in income and wealth we are already reaping great benefits from the fact that national income definitions are becoming more and more standardized. It seems clear that considerable advances could be made in the study of the effects of taxation policies if we were now to attempt to introduce some standardization into the methods of analysis which are being used.

APPENDIX

SUMMARY OF 'AN EMPIRICAL STUDY OF THE DISTRIBUTION OF THE TAX BURDEN IN THE UNITED STATES, 1955–1959', BY PETER NEWMAN

As was mentioned earlier, permission has been granted for some of the results obtained by Professor Newman to be quoted here. The two tables in this Appendix summarize the full information for 1958 and outline the results for the whole period. Data in Table I has been extensively used earlier, while Table II shows the percentages of broadly defined income within each size group of income, absorbed by Federal taxes, by Federal and State and local taxes, and by all taxes and all insurance contributions, over the whole period from 1955 to 1959,

TABLE I

The tax burden by income class, 1958

($ m. current)

Family money income class ($)	0 to 1,999	2,000 to 2,999	3,000 to 3,999	4,000 to 4,999	5,000 to 7,499	7,500 to 9,999	10,000 and over	Total
(*a*) Total family money income	13,197	16,497	23,096	29,694	89,083	65,987	92,382	329,937
(*b*) Total adjusted family money income	13,784	17,292	23,895	30,405	90,727	67,449	108,915	352,454
(*c*) Total income – broad concept	16,033	18,298	24,778	31,386	93,281	69,267	112,756	365,782
Federal taxes								
1. Personal income tax liability	235	672	1,243	1,848	6,283	4,939	18,379	33,600
2. Estate and gift taxes	0	0	0	0	0	0	1,350	1,350
3. Corporate profits tax accruals	908	1,044	1,246	1,628	2,914	1,840	9,078	18,646
4. Excise taxes	801	1,066	1,181	1,660	2,909	1,637	1,307	10,562
5. Customs Duties	79	78	102	145	232	127	84	847
6. Total Federal taxes	2,023	2,860	3,772	5,281	12,338	8,543	30,198	65,005
7. Federal social insurance contributions	767	1,150	1,610	2,057	3,829	1,660	1,289	12,362
8. Federal taxes and social insurance	2,790	4,010	5,382	7,338	16,167	10,203	31,487	77,367
State and local taxes								
9. Personal income tax liability	10	25	50	81	331	321	1,019	1,837
10. Death and gift taxes	0	0	0	0	0	0	367	367
11. Corporate profits tax accruals	49	56	67	87	155	96	482	989
12. Motor vehicle licences	140	142	178	149	442	236	156	1,442
13. Property taxes	1,352	1,143	1,341	1,894	3,817	2,312	2,214	14,066
14. Sales taxes	720	807	1,013	1,502	2,503	1,327	904	8,774
15. Other taxes	275	286	371	545	888	470	317	3,154
16. Total State and local taxes	2,546	2,459	3,020	4,258	8,136	4,762	5,459	30,629
17. State and local social insurance contributions	96	181	262	321	794	393	423	2,473
18. Total State and local tax plus insurance	2,642	2,640	3,282	4,579	8,930	5,155	5,882	33,102
19. Total Federal and State and local taxes	4,569	5,319	6,792	9,539	20,474	13,305	35,657	95,634
20. Total Federal and State and local taxes and social Insurance contributions	5,432	6,650	8,664	11,917	25,097	15,358	37,369	110,469

TABLE II

The Tax Burden by Income Class, 1955–1959 (summary table)

Family money income class $		0 to 1,999	2,000 to 2,999	3,000 to 3,999	4,000 to 4,999	5,000 to 7,499	7,500 to 9,999	10,000 and over	Total
Total Federal taxes as % of income, broadly defined	*1955*	*14·7*	*17·5*	*16·8*	*18·6*	*15·1*	*14·8*	*26·1*	*19·1*
	1956	14·3	17·3	17·6	18·8	14·9	14·8	24·6	18·9
	1957	13·9	18·0	16·7	18·4	14·3	14·1	26·0	18·8
	1958	12·6	15·6	15·2	16·8	13·2	12·3	26·8	17·8
	1959	15·4	18·3	17·5	18·7	14·2	14·9	23·9	18·8
Total Federal and State and local taxes as % of income broadly defined	1955	28·6	29·3	27·7	31·0	22·8	20·7	30·1	26·6
	1956	29·6	30·2	29·2	31·8	23·1	21·2	29·0	26·7
	1957	29·4	30·9	28·8	31·9	22·8	20·8	30·6	26·9
	1958	28·5	29·1	27·4	30·4	21·9	19·2	31·6	26·1
	1959	30·5	32·8	30·8	33·6	23·7	22·4	28·9	27·2
Total all taxes plus all insurance contributions as % of income broadly defined	1955	33·3	35·1	33·6	36·8	26·4	22·9	30·9	29·8
	1956	34·4	36·7	36·2	38·2	27·2	23·7	30·0	30·0
	1957	34·4	38·6	35·9	39·1	27·3	23·6	31·9	30·5
	1958	33·5	35·6	34·2	37·2	26·5	22·0	33·0	29·9
	1959	37·7	40·7	38·7	41·4	28·9	26·1	30·4	31·3