Estimates of the distribution of personal incomes for the United Kingdom 1973/74

Introduction

This article gives estimates of the distribution of income before and after tax for the United Kingdom for the income tax year 1973/74. It is the second article in the present series; the first, published in *Economic Trends*, No. 262, August 1975, gave the corresponding estimates for 1972/73* along with a detailed description of the underlying sources and methods. There have been no major changes in these sources and methods for the purpose of deriving the present results. Thus this article does not repeat the discussion of methodology but summarises the salient features and describes the minor changes which have been made. The distributions of incomes both before and after tax are given in Table 1. Some comparisons with those for 1972/73 are given in Table D. The figures in Table 1 will be published, possibly with minor revisions, also in the National Income and Expenditure Blue Book for 1976 and in *Social Trends* No. 7.

Methodology

This special exercise to produce the estimates in Table 1 is necessary because of the limitations of existing data sources in giving a comprehensive picture of the distribution of income. The most reliable data sources for such a picture are, first, the Inland Revenue Survey of Personal Incomes (SPI), which covers a sample of over 120,000 tax-units or 0·4 per cent in 1973/74, and, secondly, the personal interview Family Expenditure Survey (FES), which covers about 6,850 responding households or 8,700 tax-units in 1973/74. There are other data sources but they are unsuitable; for example, the Department of Employment's New Earnings Survey is restricted to earnings of employees, not income as defined below, for only one pay-period. None of these sources were designed primarily to provide a comprehensive measure of the distribution of income and so each in isolation is deficient in some way for this purpose.

The Survey of Personal Incomes does not cover the whole income-receiving population or all forms of income. Though stronger than other sources in its coverage of the upper tail of the distribution, it is incomplete at the lower end. Many with incomes below the effective tax-exemption limit are excluded. Incomes such as non-taxable social security benefits are also excluded.

Unlike the SPI, the Family Expenditure Survey includes a range of non-taxable benefits, but its coverage of very high incomes is very low. On its own, the existing sample is too small to serve as a reliable basis for an estimate of the distribution of income for the United Kingdom.

The present technique, which was described in detail in the first article, seeks to combine the strengths of those two Surveys. It uses the SPI as the basis, estimates the deficiencies in its coverage, as shown in Tables B and C, and augments it in individual ranges as far as practicable by means of certain relationships estimated from the FES. Specifically, the FES data are arranged to show the two-way distribution of tax-units classified by their range of income subject to tax and by their total income (including non-taxable incomes, mainly social security benefits and income below the tax-limit, etc).

This broad approach is the same for both years 1972/73 and 1973/74. However, for 1973/74 there have been some changes in detail. More reliable and extensive control information on social security benefits, for example on the numbers of recipients of particular benefits, was made available by the Department of Health and Social Security; this information was used to reveal defects in the FES response and to make allowances for them. Again, the processing of the FES data was greatly improved and a wider range of tabulations was obtained. The present estimate of the pensioner control number takes account of the deaths to pensioners during the year. There have been some improvements in the procedure for grossing up the results of the SPI. The significance of the discontinuity which these changes have introduced in the series is being assessed where possible and the results will be published in due course.

There are still a number of limitations that should be remembered when drawing conclusions from Table 1. The results reflect many of the features of the underlying Surveys, such as the definition of the income-receiver as the tax-unit and not as the individual or the household; this definition leads to some double-counting of those whose marital status changes during the year. Also, despite some efforts, it has not been possible on available data to make good the relatively small part of the deficiency in the Income Survey coverage of the income of earning wives which had not already been corrected by the Inland Revenue. Another important limitation, particularly in times of inflation and changing pay differentials, is that the results do not give an up-to-date picture of the distribution. Again, the overall distributions in Table 1 are a mixture of several distinct distributions, for example, the earnings distrib-

*Other publications in which the 1972/73 estimates appeared were the National Income and Expenditure Blue Book for 1975, *Social Trends* No. 6 and *Report No. 1* by the Royal Commission on the Distribution of Income and Wealth.

ution and that for investment income, the distributions for large and small households, for the economically active and inactive populations, for different occupations and so on. Each constituent distribution is probably subject to different economic and social influences and would display a different average, dispersion and trend over time. Efforts are continuing to disaggregate the overall distributions and to gauge the effect of, if not overcome, some of the other limitations.

Income-definition and coverage

The choice of definition of income for the Table 1 estimates was dictated almost entirely by the available statistics, with regard for some consistency with the treatment of income, savings and expenditure in the national accounts. Specifically, income in these tables covers:

i receipts which are subject to income tax and are identified in the SPI;

plus ii taxable pensions and employment income that are missed from the SPI because they are not of sufficient size to be taxed;

plus iii non-taxable social security benefits and other current grants from public authorities;

plus iv some items of income in kind, (xiv and xv of Table B).

The extent to which the coverage of the SPI and the Table 1 definitions of pre-tax income falls short of the national accounts control total can be derived as follows :-

		£ million
SPI coverage		46,631
Additions of taxable income to SPI		
Employment income	140	
Pensions, etc.	2,917	3,057
Additions of non-taxable income to SPI		2,531
Total, Table 1 coverage		52,219
Household component of the Blue Book personal sector		63,515
Deficiency in Table 1 coverage		11,296

Thus, £11,296 million or about 17·8 per cent of the household component of the national accounts personal sector income is not allocated to ranges. The particular items not so allocated are mostly those which are excluded from the SPI because they are deductible or do not rank for tax. The arguments for including them in the distribution depend on the particular purposes to be served and on the possibility of reliable imputation. Whatever the arguments, there is considerable interest in knowing the effect of these items on the spread of the distribution and hence on measures of inequality. This effect has not yet been reliably estimated for any of the items and indeed for a number of them it may be impossible to do so. However the full list of items with amounts is given below:

Estimated amounts not allocated to ranges in Table 1

TABLE A

	£ million
Income from employment :	
Employees' superannuation contributions	650
Employers' national insurance contributions	2,172
Income in kind (part)	199
Other differences between Income Survey and Blue Book	286
	3,307
Income from self-employment :	
Retirement annuity relief	65
Farming	220
Capital allowances	625
Reference period adjustment[1]	1,728
Allowable interest paid by the self-employed	186
Other differences between Income Survey and Blue Book	547
	3,371
Investment Income	90
Charges	2,329
Imputed rent of owner-occupied dwellings	197
Undistributed income of private trusts	– 186
Allowable interest paid by the self-employed	330
Untaxed interest and other untaxed investment income	87
Other differences between Income Survey and Blue Book	2,847
Current grants from public authorities (part)	247
Current grants from private non-profit-making bodies (part)	217
Benefits from superannuation and life assurance funds[2]	1,307
Total unallocated	11,296

[1] Most of these items are self-explanatory. However the 'Reference period adjustment' needs some clarification: the 1973/74 SPI relates to income in 1973/74, except for self-employment income, which relates roughly to 1972. The reference period adjustment is a timing difference between the Income Survey and the Blue Book period of 1973/74.

[2] For example, lump sums payable on retirement or death, marriage gratuities and refunds.

Non-taxable income

It is stated above that a total of £2,531 million non-taxable income has been added to the SPI. The allocation to individual ranges is shown in column 3 of Table 2; The details of this income are :

Non-taxable income, 1973/4

TABLE B

		£ million	Percentage of total
Type of benefit			
i	Supplementary benefits	714	28·2
ii	Sickness/industrial injury benefits	352	13·9
iii	NI disablement/War disability pension	197	7·8
iv	Unemployment benefit	182	7·2
v	Invalidity pension and allowances	294	11·6
vi	Rent rebate and allowances	178	7·0
vii	Maternity benefit	44	1·7
viii	Death grant	14	0·6
ix	Local authority allowances for foster children	9	0·4
x	Other state benefits	69	2·7
xi	Pensioners' Christmas lump sum payments	82	3·2
xii	Family income supplement	14	0·6
xiii	Scholarship	172	6·8
xiv	Luncheon vouchers and free meals	115	4·6
xv	Concessionary coal and coke	21	0·8
xvi	Redundancy pay	61	2·4
xvii	Benefits from friendly societies, etc.	13	0·5
	Total	2,531	100·0

Employment income

A total of £140 million employment income, estimated from the New Earnings Survey and from the Family Expenditure Survey, has been added to the SPI. As this is income below the weekly deduction card limit, £11·50 per week in 1973/74, it has all been allocated to the under-£595 range. This total amount consists of a large number of small payments to part-time and part-year earners such as full-time students, some recipients of supplementary benefits and some pensioners; it excludes the earnings of juveniles, who do not hold national insurance cards. In the first article, it was stated that the total number of different payees involved during the year could only be estimated by certain highly questionable assumptions. Thus, the corresponding allocation for numbers was made as a residual. This approach is repeated.

One particular exclusion from the amount of £140 million allocated to the distribution is an estimated £135 million earnings of about 500 thousand wives, who would be part-time and part-year employees. The individual earnings are below the weekly deduction card limit. However, when they are combined with the husband's income to form the income of tax-units, they would fall at various levels in the distribution, mostly above the tax threshold. The result would be a slight general upward shift in the distribution. It is clearly desirable to incorporate these wives' earnings in the distribution to obtain a more accurate estimate. But this would be hazardous until there is information on the duration of employment of wives or their total earnings in the year in relation to their husband's income.

Allocation for missing tax-units from the SPI

The basic unit of analysis in this article is the tax-unit, which is defined as a married couple or as a single person over 16 who is not still at school, and including minors with investment income above the effective tax threshold. For some purposes, the use of alternative units such as households† would be much more meaningful and would yield a distribution with a different average and spread. For example, although about 80 per cent of households contain only one tax-unit, the rest contain two or more tax-units so that on average households would have higher incomes than tax-units. The total number of tax-units in the population is estimated as follows :-

1973/74 Control number of tax-units

TABLE C

	Thousands
Total population at 6.4.74	56,047
less Population 16 and under at 6.4.74	−14,128
less Married women at 6.4.74	−14,118
Marriages 6.4.73 to 5.4.74	+ 448
All deaths in population over 16, 6.4.73 to 5.4.74	+ 642
less Deaths to married women 6.4.73 to 5.4.74	− 93
Gross emigration of population over 16, 6.4.73 to 5.4.74	+ 195
less Gross emigration of married women 6.4.73 to 5.4.74	− 58
Minors with investment income over the limit	+ 13
less Pupils over 16 still at school	− 825
Total	28,123
SPI coverage	22,931
Difference (See Column 7, Table 2)	5,192

Compared with the control for 1972/73, there was a reduction of 228 thousand tax-units in 1973/74, which was due chiefly to the raising of the school-leaving age. The SPI coverage is 237 thousand tax-units fewer in 1973/74 than in the previous year. Thus, the total addition to the SPI of about 5,200 thousand, mainly pensioners, remains virtually the same in the two years.

Briefly the method of distributing the total addition to individual ranges of taxable income was described in the previous article. The allocation of the pensioners sub-category and their pensions relies on the FES distributions of pensions for married couples and for single persons, and it takes account of their different tax-exemption limits of £1,000 and £700 respectively. The non-pensioner residual was added to the under-£595 range of taxable income. The final allocations to ranges of total (taxable and non-taxable) income are shown in column 7, and the corresponding amounts in column 2 of Table 2.

†For an example, see the article 'Effects of taxes and benefits on household income 1974' in *Economic Trends*, No.268, February 1976.

Results

The final results, including the distributions of pre-tax income by post-tax range and of post-tax income by pre-tax range, are given in Table 1. This article does not aim to provide a commentary on the results but certain features may be worth noting.

The figures in columns 4 and 8 of Table 2 indicate the effect of non-taxable social security cash benefits and income below the tax limit on the distribution of income. In particular, the effect is a shift of well over one-quarter of the tax-units from the under -£595 range to higher levels. Again, in the distribution of pre-tax income by pre-tax range, £825 million or 4 per cent of the taxable income under £2,000 was transferred to higher ranges.

The following table, Table D, shows the percentage shares by given quantile groups derived from Table 1 in this article and in the first article on the 1972/73 distributions. For example, the table shows that in 1973/74 the top 10 per cent (or first decile group) of income recipients had 26·8 per cent of total income before tax, and that the next decile group received 15·6 per cent. Because of the changes mentioned in the Methodology section above, only large differences between the distributions can be accepted as significant. But Table D shows, not surprisingly, that in general changes in the distribution between 1972/73 and 1973/74 were very slight.

Percentage shares of income, before and after tax, received by given quantile groups in 1972/73 and 1973/74

TABLE D

	Percentage			
	Before tax		After tax	
Quantile group	1972/1973	1973/1974	1972/1973	1973/1974
Top 1 per cent	6·4	6·5	4·4	4·5
2 - 5 " "	10·8	10·6	9·8	9·8
6 - 10 " "	9·7	9·7	9·4	9·3
Top 10 per cent	26·9	26·8	23·6	23·6
11 - 20 " "	15·8	15·6	15·8	15·5
21 - 30 " "	13·1	13·0	13·2	13·2
31 - 40 " "	11·0	11·2	11·2	11·2
41 - 50 " "	9·2	9·3	9·5	9·5
51 - 60 " "	7·5	7·5	8·0	7·8
61 - 70 " "	5·9	5·8	6·5	6·4
71 - 80 " "	4·8	4·7	5·5	5·4
81 - 90 " "	5·9	3·5	6·9	4·1
91 - 100 " "		2·6		3·2
Median £	1,338	1,550	1,187	1,348
Mean £	1,614	1,857	1,382	1,571

Central Statistical Office

APPENDIX

Distribution of personal incomes before and after tax - 1973/74

TABLE 1

Lower limit of range £	Thousands: Number of tax-units	£ million: Income before tax	Taxes on income	Income after tax
Income before tax				
Under 595	3,579	1,800	2	1,798
595 –	2,091	1,486	12	1,474
750 –	3,408	3,027	105	2,922
1,000 –	2,420	2,723	206	2,517
1,250 –	2,068	2,838	312	2,526
1,500 –	2,184	3,546	440	3,106
1,750 –	2,036	3,814	523	3,291
2,000 –	3,800	8,509	1,234	7,275
2,500 –	2,764	7,534	1,178	6,356
3,000 –	2,415	8,209	1,437	6,772
4,000 –	699	3,102	637	2,465
5,000 –	234	1,279	296	983
6,000 –	204	1,409	370	1,039
8,000 –	85	760	239	521
10,000 –	49	530	194	336
12,000 –	38	505	210	295
15,000 –	27	456	214	242
20,000 and over	22	692	438	254
Total	28,123	52,219	8,047	44,172
Income not included in classification by ranges		11,296		
Total income of households, including pensions and other benefits from life assurance and superannuation schemes		63,515		
Income after tax				
Under 595	3,589	1,808	5	1,803
595 –	2,364	1,697	23	1,674
750 –	3,964	3,700	201	3,499
1,000 –	2,981	3,738	387	3,351
1,250 –	2,657	4,200	558	3,642
1,500 –	2,524	4,762	661	4,101
1,750 –	2,417	5,267	743	4,524
2,000 –	3,755	9,858	1,488	8,370
2,500 –	2,035	6,630	1,091	5,539
3,000 –	1,229	5,201	1,020	4,181
4,000 –	288	1,688	408	1,280
5,000 –	133	1,029	303	726
6,000 –	125	1,344	486	858
8,000 –	41	667	304	365
10,000 –	13	295	156	137
12,000 –	5	177	105	72
15,000 –	2	90	58	32
20,000 and over	1	68	50	18
Total	28,123	52,219	8,047	44,172

Build-up of final results included in Table I

TABLE 2

Lower limit of range £	£ million: SPI income	Adjustments for missing taxable income[1]	Non-taxable income	Shift of taxable income between ranges	Total	Thousands: SPI numbers	Adjustments for missing numbers	Shift comparable to Column 4	Total
	1	2	3	4	5	6	7	8	9
	Pre-tax income by pre-tax range								
Under 595	724	1,149	452	−525	1,800	2,099	2,865	−1,375	3,579
595–	710	547	302	− 73	1,486	1,053	823	215	2,091
750–	1,712	1,075	347	−107	3,027	1,958	1,250	200	3,408
1,000–	2,249	286	239	− 51	2,723	2,000	254	166	2,420
1,250–	2,695	–	199	− 56	2,838	1,964	–	104	2,068
1,500–	3,301	–	212	33	3,546	2,031	–	153	2,184
1,750–	3,664	–	196	− 46	3,814	1,954	–	82	2,036
2,000–	8,226	–	212	71	8,509	3,670	–	130	3,800
2,500–	7,094	–	159	281	7,534	2,602	–	162	2,764
3,000–	7,792	–	135	282	8,209	2,299	–	116	2,415
4,000–	2,926	–	46	130	3,102	663	–	36	699
5,000–	1,231	–	10	38	1,279	227	–	7	234
6,000–	1,383	–	20	6	1,409	202	–	2	204
8,000–	741	–	2	17	760	83	–	2	85
10,000–	530	–	–	–	530	49	–	–	49
12,000–	505	–	–	–	505	38	–	–	38
15,000–	456	–	–	–	456	27	–	–	27
20,000 an over	692	–	–	–	692	22	–	–	22
Total	46,631	3,057	2,531	–	52,219	22,931	5,192	–	28,123
	Post-tax income by post-tax range								
Under 595	726	1,149	455	−527	1,805	2,097	2,865	−1,373	3,589
595–	955	547	305	−133	1,674	1,411	823	130	2,364
750–	2,199	1,075	358	−133	3,499	2,523	1,250	191	3,964
1,000–	2,935	286	254	−124	3,351	2,613	254	114	2,981
1,250–	3,395	–	241	6	3,642	2,469	–	188	2,657
1,500–	3,814	–	228	59	4,101	2,353	–	171	2,524
1,750–	4,284	–	199	41	4,524	2,287	–	130	2,417
2,000–	7,899	–	221	250	8,370	3,547	–	208	3,755
2,500–	5,163	–	130	246	5,539	1,903	–	132	2,035
3,000–	3,833	–	98	250	4,181	1,136	–	93	1,229
4,000–	1,229	–	19	32	1,280	278	–	10	288
5,000–	732	–	10	− 16	726	135	–	− 2	133
6,000–	798	–	11	49	858	117	–	8	125
8,000–	363	–	2	–	365	41	–	–	41
10,000–	137	–	–	–	137	13	–	–	13
12,000–	72	–	–	–	72	5	–	–	5
15,000–	32	–	–	–	32	2	–	–	2
20,000 and over	18	–	–	–	18	1	–	–	1
Total	38,584	3,057	2,531	–	44,172	22,931	5,192	–	28,123

[1] These are incomes which have not been of sufficient size to be taxed and which were therefore excluded from Inland Revenue statistics.

APPENDIX

Distribution of personal incomes before and after tax - 1973/74

TABLE 1

Lower limit of range £	Thousands	£ million		
	Number of tax-units	Income before tax	Taxes on income	Income after tax
Income before tax				
Under 595	3,579	1,800	2	1,798
595 –	2,091	1,486	12	1,474
750 –	3,408	3,027	105	2,922
1,000 –	2,420	2,723	206	2,517
1,250 –	2,068	2,838	312	2,526
1,500 –	2,184	3,546	440	3,106
1,750 –	2,036	3,814	523	3,291
2,000 –	3,800	8,509	1,234	7,275
2,500 –	2,764	7,534	1,178	6,356
3,000 –	2,415	8,209	1,437	6,772
4,000 –	699	3,102	637	2,465
5,000 –	234	1,279	296	983
6,000 –	204	1,409	370	1,039
8,000 –	85	760	239	521
10,000 –	49	530	194	336
12,000 –	38	505	210	295
15,000 –	27	456	214	242
20,000 and over	22	692	438	254
Total	28,123	52,219	8,047	44,172
Income not included in classification by ranges		11,296		
Total income of households, including pensions and other benefits from life assurance and superannuation schemes		63,515		
Income after tax				
Under 595	3,589	1,808	5	1,803
595 –	2,364	1,697	23	1,674
750 –	3,964	3,700	201	3,499
1,000 –	2,981	3,738	387	3,351
1,250 –	2,657	4,200	558	3,642
1,500 –	2,524	4,762	661	4,101
1,750 –	2,417	5,267	743	4,524
2,000 –	3,755	9,858	1,488	8,370
2,500 –	2,035	6,630	1,091	5,539
3,000 –	1,229	5,201	1,020	4,181
4,000 –	288	1,688	408	1,280
5,000 –	133	1,029	303	726
6,000 –	125	1,344	486	858
8,000 –	41	667	304	365
10,000 –	13	295	156	137
12,000 –	5	177	105	72
15,000 –	2	90	58	32
20,000 and over	1	68	50	18
Total	28,123	52,219	8,047	44,172

Build-up of final results included in Table I

TABLE 2

Lower limit of range £	£ million					Thousands			
	SPI income	Adjustments for missing taxable income[1]	Non-taxable income	Shift of taxable income between ranges	Total	SPI numbers	Adjustments for missing numbers	Shift comparable to Column 4	Total
	1	2	3	4	5	6	7	8	9
	Pre-tax income by pre-tax range								
Under 595	724	1,149	452	−525	1,800	2,089	2,865	−1,375	3,579
595–	710	547	302	− 73	1,486	1,053	823	215	2,091
750–	1,712	1,075	347	−107	3,027	1,958	1,250	200	3,408
1,000–	2,249	286	239	− 51	2,723	2,000	254	166	2,420
1,250–	2,695	–	199	− 56	2,838	1,964	–	104	2,068
1,500–	3,301	–	212	33	3,546	2,031	–	153	2,184
1,750–	3,664	–	196	− 46	3,814	1,954	–	82	2,036
2,000–	8,226	–	212	71	8,509	3,670	–	130	3,800
2,500–	7,094	–	159	281	7,534	2,602	–	162	2,764
3,000–	7,792	–	135	282	8,209	2,299	–	116	2,415
4,000–	2,926	–	46	130	3,102	663	–	36	699
5,000–	1,231	–	10	38	1,279	227	–	7	234
6,000–	1,383	–	20	6	1,409	202	–	2	204
8,000–	741	–	2	17	760	83	–	2	85
10,000–	530	–	–	–	530	49	–	–	49
12,000–	505	–	–	–	505	38	–	–	38
15,000–	456	–	–	–	456	27	–	–	27
20,000 an over	692	–	–	–	692	22	–	–	22
Total	46,631	3,057	2,531	–	52,219	22,931	5,192	–	28,123
	Post-tax income by post-tax range								
Under 595	726	1,149	455	−527	1,805	2,097	2,865	−1,373	3,589
595–	955	547	305	−133	1,674	1,411	823	130	2,364
750–	2,199	1,075	358	−133	3,499	2,523	1,250	191	3,964
1,000–	2,935	286	254	−124	3,351	2,613	254	114	2,981
1,250–	3,395	–	241	6	3,642	2,469	–	188	2,657
1,500–	3,814	–	228	59	4,101	2,353	–	171	2,524
1,750–	4,284	–	199	41	4,524	2,287	–	130	2,417
2,000–	7,899	–	221	250	8,370	3,547	–	208	3,755
2,500–	5,163	–	130	246	5,539	1,903	–	132	2,035
3,000–	3,833	–	98	250	4,181	1,136	–	93	1,229
4,000–	1,229	–	19	32	1,280	278	–	10	288
5,000–	732	–	10	− 16	726	135	–	− 2	133
6,000–	798	–	11	49	858	117	–	8	125
8,000–	363	–	2	–	365	41	–	–	41
10,000–	137	–	–	–	137	13	–	–	13
12,000–	72	–	–	–	72	5	–	–	5
15,000–	32	–	–	–	32	2	–	–	2
20,000 and over	18	–	–	–	18	1	–	–	1
Total	38,584	3,057	2,531	–	44,172	22,931	5,192	–	28,123

[1] These are incomes which have not been of sufficient size to be taxed and which were therefore excluded from Inland Revenue statistics.