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PLEASE NOTE:

In this issue the latest developments in the economy article has been moved to pages 117-118.

REGIONAL ACCOUNTS 1990: PART 1

Introduction

This article is the latest in an annual series, which has appeared in *Economic Trends* since November 1976. It presents estimates of total gross domestic product (GDP) in 1989 for the counties of England and Wales, and the regions of Scotland, and also gives provisional estimates of GDP by region for 1990. The tables show total county GDP for 1979, 1981, 1984, 1987 and 1989; total regional GDP from 1980 to 1990; and GDP by region and industry for 1987 to 1990. The article also gives estimates of 1988 and 1989 gross domestic fixed capital formation (GDFCF) for selected industries by region.

Personal income, personal disposable income, household income and consumers' expenditure estimates for 1990 consistent with these GDP estimates will be given in the article *Regional Accounts 1990 part 2* in the April 1992 issue of *Economic Trends*. Estimates for 1989 were published in the April 1991 issue. County estimates of GDFCF by function of government for 1989 will also be published in the April 1992 issue of *Economic Trends*.

Scotland, Wales, Northern Ireland and the regions of England are all different in size, character, industrial structure and economic performance. Table A shows some of the differences in size of the regions. Scotland has the largest area, but has a small population relative to its size; the North West has the smallest area, but the second largest population. The South East like the North West is very densely populated; as it is also large in area its population, at 17 million is nearly three times as large as any

other region. Northern Ireland at the other extreme has a population of only 1½ million. These large variations in the regions' populations are, of course, reflected in the size of regional GDP, and table A shows that this varied in 1990 from £10 billion in Northern Ireland to £169 billion in the South East. The Continental Shelf, which is treated as a separate region in the accounts contributed £7 billion (see technical note 10).

The wide variation in the sizes of the regions makes it difficult to use regional accounts aggregates such as total GDP to compare the regions' economic performance; comparisons are thus usually given in terms of amounts per head of the population. However, it is important to note that the growth in total GDP may be quite different to the growth in GDP per head. This will be the case particularly in regions where the population has increased or decreased. Furthermore the level of GDP per head is determined both by the average level of earnings of the working population and by the proportion of dependants. Northern Ireland households for example have a high proportion of children (25 per cent of the population was aged 14 or under in 1989 compared with 16 to 20 per cent in most counties). This will tend to depress GDP per head and the age structure of the population should be taken into account when comparing GDP per head. It should also be noted that regional comparisons of GDP per head exclude the Continental Shelf region and that UK GDP excluding the Continental Shelf region shows rather different growth over time compared to growth in the whole economy.

Basic Regional Statistics

TABLE A

Region	Area		Population 1990		GDP 1990 ¹	
	'000s sq km	per cent	million	per cent	£ million	per cent of UK ²
United Kingdom ³	242.5	100.0	57.4	100.0	477 747	
North	15.4	6.4	3.1	5.4	22 243	4.7
Yorkshire & Humberside	15.4	6.4	5.0	8.6	37 448	8.0
East Midlands	15.6	6.4	4.0	7.0	32 368	6.9
East Anglia	12.6	5.2	2.1	3.6	17 312	3.7
South East	27.2	11.2	17.5	30.4	169 398	36.0
South West	23.8	9.8	4.7	8.1	36 300	7.7
West Midlands	13.0	5.4	5.2	9.1	39 727	8.4
North West	7.3	3.0	6.4	11.1	47 412	10.1
England	130.4	53.8	47.8	83.3	402 207	85.4
Wales	20.8	8.6	2.9	5.0	20 053	4.3
Scotland	77.2	31.8	5.1	8.9	38 738	8.2
Northern Ireland	14.1	5.8	1.6	2.8	9 821	2.1
Continental Shelf	-	-	-	-	6 767	-
Statistical discrepancy (income adjustment)	-	-	-	-	160	-

1 Provisional.

2 Excluding the Continental Shelf region.

3 The regional estimates of GDP are income-based and are linked to the average estimate of United Kingdom GDP by a statistical discrepancy.

All the items are measured in current prices which means that increases over time reflect price increases as well as real growth. Comparisons of trends in either GDP or GDP per head can be based either on the difference between the current price increases or on movements in the amount relative to the UK average. Both approaches could be misleading if price increases any region were different from the national average.

Gross domestic product by region

There are wide variations in GDP per head of population between the regions of the UK. The highest levels are in the South East, with Greater London significantly higher than the Rest of the South East. Provisional estimates for 1990 are £10,400 and £9,300 respectively. The differential between Greater London and the Rest of the South East is despite the fact that employment income is recorded on a residence basis, so that income of commuters is included in the region where they live, not where they work. The highest GDP per head outside of the South East is in East Anglia, £8,400 in 1990, followed by the East Midlands at £8,100. The lowest level of GDP is in Northern Ireland, at £6,200 per head in 1990, and Wales at £7,000.

Many of the differences in the levels of regions' GDP per head are long-standing, and there are relatively small year to year changes. The provisional estimates for 1990 thus show only small changes over 1989. The figures broadly suggest a continuation of long term trends, except that the South East, and in particular the Rest of the South East, has experienced below average growth, while Yorkshire and Humberside appears to have grown more rapidly. But undue reliance should not be placed on these provisional figures which may be revised substantially as better information becomes available (see technical note 9).

GDP & GDP per head (UK¹ = 100)

TABLE B

Region	GDP (UK = 100)		GDP per head (UK = 100)	
	1980	1990 ²	1980	1990 ²
United Kingdom	100.0	100.0	100.0	100.0
North	5.1	4.7	92.5	88.2
Yorkshire & Humberside	8.1	8.0	93.1	92.2
East Midlands	6.6	6.9	97.0	98.2
East Anglia	3.2	3.7	96.6	102.5
South East	35.0	36.0	116.1	118.3
Greater London	15.6	15.0	128.0	126.9
Rest of South East	19.5	21.0	108.1	112.9
South West	7.2	7.7	92.8	94.9
West Midlands	8.6	8.4	93.2	92.8
North West	11.1	10.1	96.2	90.5
England	85.0	85.4	102.3	102.5
Wales	4.2	4.3	84.2	84.9
Scotland	8.7	8.2	94.4	92.6
Northern Ireland	2.1	2.1	78.3	75.4

¹ Excluding the Continental Shelf region

² Provisional

Over the last ten years there has been significant variation in regions' economic performances. Table B gives regional GDP and GDP per head for 1980 and 1990. The growth in GDP was most rapid in East Anglia followed by the Rest of the South East and the South West. The North West, North and Scotland have grown less strongly, and these regions contributed a lower proportion of UK total GDP in 1990 than ten years earlier. Changes in GDP are to some extent matched by changes in population. So changes in regions' GDP per head are smaller than changes in regions' GDP but show a similar pattern. Growth has again been strongest in East Anglia followed by the Rest of the South East and the South West and weakest in the North and North West. Although the above remarks are based on changes in regional GDP and GDP per head between 1980 and 1990, it should be clear from table 1 that this is only a partial description of the changes in regions' performances over the period. In Scotland for example, GDP per head relative to the UK average rose throughout the early 1980s but has been declining since 1984. On the other hand, Greater London's relative standing worsened at the beginning of the decade then began to recover in 1985 and has kept broadly steady since 1987.

Part of the explanation for the wide variation in regional GDP per head and changes therein lies in the marked differences in the industrial structures of the regions. Very significant but short term factors, such as the fall in the sterling price of oil may affect industries, and therefore regions very differentially. An industrial analysis of GDP is given in Table 3 and was discussed in Economic Trends, November 1988.

Gross domestic product by county

GDP by county measures the value of goods and services produced in a county; it does not measure the income of residents of a county.

There is wide variation between the counties of England and Wales, the regions of Scotland, and Northern Ireland in size and population. Table 4, presents estimates of GDP for these areas for 1979 to 1989 and also gives the population, employment and unemployment rates. The size of the employed population is a major factor in determining a county's GDP. Other factors are average wage levels and profitability, which tend to reflect the counties' industrial structure. These differences are reflected in the size of GDP and GDP per head. In 1989 GDP varied from under £1 billion in the smallest counties and Scottish regions to £75 billion in Greater London. This estimate for Greater London is higher than that given in the regional tables. This is because the county estimates measure GDP on a workplace basis rather than a residence basis, so that the income from employment of commuters is allocated to the county where they work rather than where they live.

In order to compare the economic performance of counties varying so much in size, it is necessary to use an indicator such as GDP per head of population or GDP per person employed. Comparisons of such indices over time should be made with care for reasons explained earlier in this article. The most commonly used measure is GDP per head indexed to UK=100 to enable comparisons

between years. It is important to note that the estimates of GDP per head use resident population as the denominator, which is of questionable relevance to these workplace-based estimates of county GDP for counties where commuting is a significant activity. Thus the productivity of urban areas into which workers commute will tend to be overstated by this indicator, while that of surrounding areas in which they live will be understated.

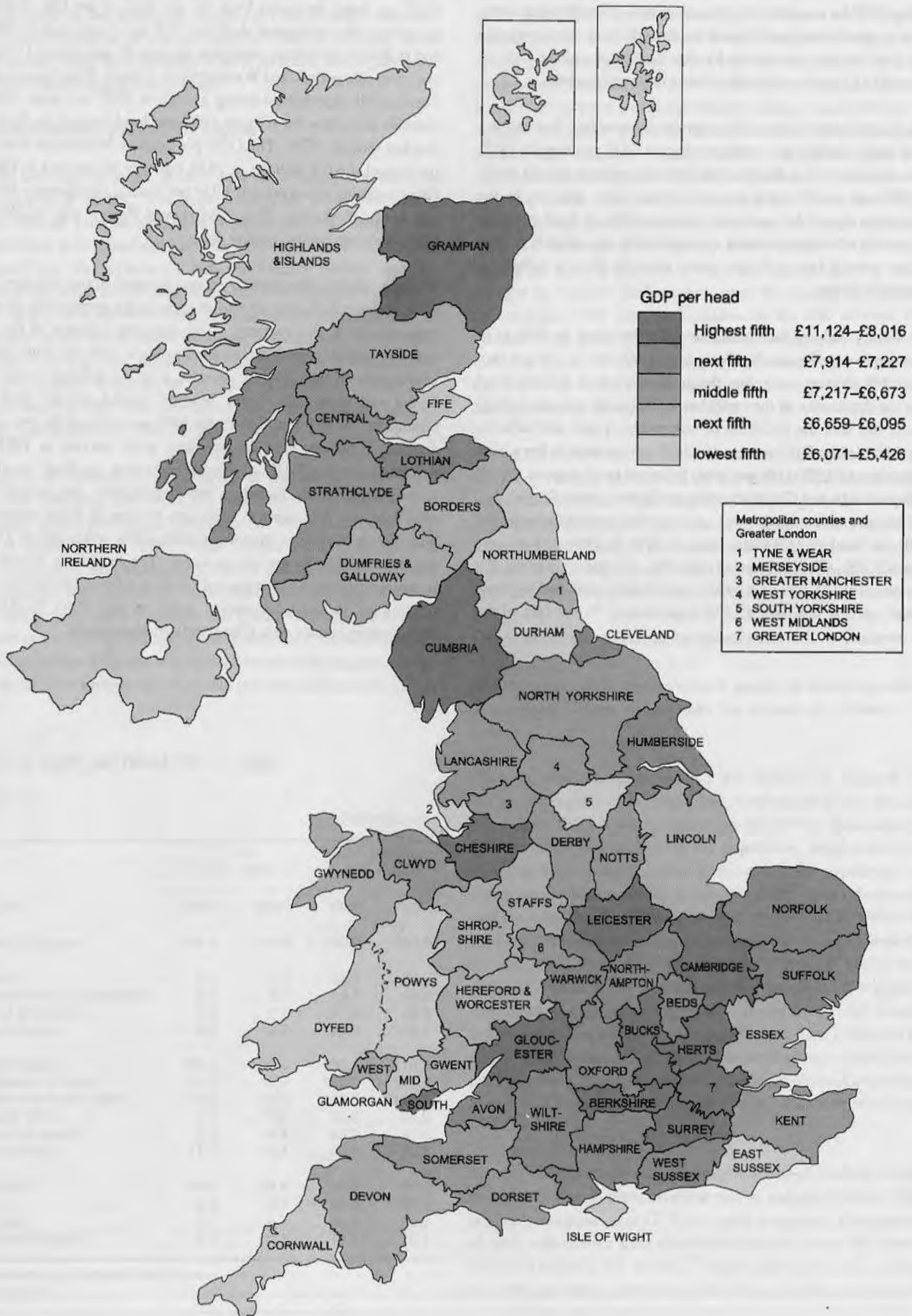
The map on page 88 shows the counties grouped into five equally-sized bands according to their ranking on GDP per head in 1989. The map shows that there is considerable variation in the levels of GDP per head within the counties of most regions. In the South East region for example, average GDP per head is nearly 20 per cent above the national average, but in the counties of East Sussex and the Isle of Wight, it was over 20 per cent below the national average.

The county with by far the highest GDP per head in 1989 as in other years was Greater London. At £11,100 this is 148 per cent of the UK average excluding the continental shelf reflecting not only the dominance of the capital as an industrial and commercial centre, but also the inclusion of commuters wages and salaries. The next highest GDP per head in 1989 is estimated to have been Berkshire at £9,500 (126 per cent) followed by Grampian £9,100 (120 per cent), and Cambridgeshire and Surrey (both £8,400, 112 and 111 per cent respectively). At the other end of the scale the GDP per head of Mid-Glamorgan in 1989 is estimated to have been £5,400 (72 per cent of the UK average excluding the continental shelf), followed by Merseyside, Cornwall, and Northern Ireland each at just over £5,700, representing 76 per cent of the UK average.

Many of the differences between counties' GDP per head are long-standing, but some have seen significant changes in their relative levels. The greatest increase has been in Surrey, where GDP per head increased from 88 per cent of the UK average (excluding the continental shelf) in 1979 to 111 per cent in 1989, and in Buckinghamshire, similarly up from 91 per cent to 111 per cent over this period, and Warwickshire, Clwyd, West Sussex and Cumbria all experienced strong growth in GDP per head. Other counties have now have lower GDP per head relative to the UK average than in 1979. The GDP per head of Merseyside was 93 per cent of the UK average in 1979, but only 76 per cent in 1989. Other counties where relative GDP per head is significantly lower are South Yorkshire, Fife, Dyfed and Powys and the West Midlands metropolitan county area.

Where a county relies heavily on employment in one industry, its GDP is particularly sensitive to changes in the profitability of and employment in that industry. The changing fortunes of the oil industry probably gives the clearest example and can cause large movements in the GDP of counties with oil refineries such as Dyfed and areas with North Seas oil related activity such as Grampian. In addition, figures for 1984 are affected by two very significant factors: first the excellent grain harvest in 1984 is reflected in the GDP of arable counties in East Anglia, Lincolnshire, North Yorkshire and Oxfordshire, and second the effects of the 1984 miners' strike can be seen in many counties, with South Yorkshire showing a particularly sharp fall in GDP per head relative to the UK average. The long term decline of manufacturing (as a percentage of GDP) is reflected in the relative decline of industrial counties such as the West Midlands metropolitan county area, Cleveland and Merseyside.

GDP per head by county



Technical notes

General

1. The regional accounts presented in this article are consistent with the national accounts published in the United Kingdom National Accounts 1990 edition, which also defines the terms used. The methodology employed in producing the regional accounts was originally described in "Regional Accounts" (Studies in Official Statistics No 31) published in 1978 and more recently in the publication "Methods used to compile regional accounts" (Eurostat, 1984). Subsequent changes have been described briefly in Economic Trends at the time they were made.

Accuracy

2. As with the national accounts the estimates, although calculated as reliably as possible, cannot be regarded as accurate to the last digit shown.

3. The regional and county GDP estimates are based partly on sample surveys and the quality of the results therefore varies according to sample size. This means that the results for areas with smaller populations such as the Isle of Wight and the Borders region of Scotland are subject to a greater degree of uncertainty than those for larger areas. A first assessment of the reliability of the regional accounts was published in Economic Trends November 1990. The results are summarised in the following table using four categories of error:

- A + or - less than 3 per cent
- B + or - 3 per cent to 10 per cent
- C + or - 10 per cent to 20 per cent
- D + or - more than 20 per cent

Quality indicators for the regional accounts

Variable	absolute level	percentage share	per head (UK=100)	per head
Gross domestic product by region	A	A	A	A
Gross domestic product by county		A/B		A/B
Household income by region	A/B	A	A/B	A
Household disposable income by region	B	A/B	B	A/B
Household income by county		A/B		A/B
Household disposable income by county		B		B
Consumers' expenditure total	A/B	A/B	A/B	A/B
food drink and tobacco	B	B	B	B
housing	A/B	A/B	A/B	A/B
other	A/B	A/B	A/B	A/B

Revisions

4. All items in the regional accounts are subject to revision when better information becomes available, either from the national accounts for the UK, from regional data sources, or from improvements to regional accounts methodology. Revisions to one year frequently suggest the need for revisions to other years and all regional series apart from the GDFCF series are maintained back to 1971. No comparable data for earlier years are available. Comparable county GDP data for 1977 are also available.

Gross domestic product

5. GDP for the United Kingdom is defined as the total sum of all incomes earned from productive activity in the UK. The definitions of regional and county GDP should thus be the sum of incomes earned from productive activity in the region and county respectively. Thus the income of commuters should be included in the region and county where they work. The county GDP estimates are compiled on this basis as far as possible; however, the regional estimates of GDP are not. Regional GDP includes estimates of income from employment on a residence basis, because this is the basis of the most reliable data source (the 1 per cent sample of Department of Social Security (DSS) records). This has a significant effect on the estimates for Greater London and the Rest of the South East as may be seen by comparing the regional estimates of GDP in Table 1 with the county GDP estimates in Table 4, but is assumed not to introduce any significant distortion for the other regions.

6. In this article GDP is measured as the total of all incomes earned from the production of goods and services at factor cost. Insufficient information is available to estimate GDP using either the production or expenditure approaches.

7. Estimates of GDP by region and county are at factor cost. They measure the income of factors of production and exclude the value of taxes on expenditure such as VAT, but include subsidies. Thus the effect of the 1984 miners' strike on regional and county GDP is restricted to the effect on miners' income from employment; the value of government subsidy to the coal industry is included in profits and thus in GDP.

8. Company profits and trading surpluses of public enterprises can contribute a substantial proportion of a county's GDP, particularly where one or two large establishments are sited in a small county. Profits can fluctuate widely from year to year and this can lead to significant year to year variations in GDP. A case in point is the sensitivity of the GDP of Dyfed to changes in the level of profits at the several oil refineries in the county. However the use of employment indicators for service sector profits will tend to produce a smoother series.

Provisional estimates of GDP

9. The estimates of GDP for 1990 given in this article are based on a less complete set of data than estimates for the earlier years and projections are employed where necessary. These provisional estimates are particularly subject to revision when more data for 1990 becomes available e.g. from the one per cent sample of pay

records by DSS, from the Annual Census of Production, from the Survey of Personal Incomes, from the Agriculture departments and from the national accounts.

Continental Shelf

10. Gross domestic product for the Continental Shelf region consists only of profits and surpluses less stock appreciation, which cannot be allocated to standard regions. It does not include income from employment, which is allocated to the region of residence of the employee; there is no resident population in the Continental Shelf region. Since GDP per head cannot be calculated for the Continental Shelf region, it is excluded from the United Kingdom total in the calculation of the national average used in comparisons of regional GDP per head. Continental Shelf GDP incorporates profits of both UK and foreign contractors.

European Community definition of regional GDP

11. The treatment of the adjustment for financial services (or interest) in the accounts differs from the approach preferred by the Statistical Office of the European Community (Eurostat). In the UK regional accounts the adjustment for financial services is deducted from the GDP of the region providing the service and receiving the interest payment (pro-rata employment in banking, finance and insurance). The treatment preferred by Eurostat is to deduct the interest from the GDP of the region paying the interest. That method is used in the CSO estimates of gross value added prepared according to the European System of Accounts for Eurostat. We assume that the interest paid is proportional to GDP. The effect on regional GDP is to increase the level of GDP in the South East and reduce that of other regions.

12. There are also two other very minor adjustments to the regional distribution of GDP. The GDP of UK embassies is added to the Continental Shelf region or Extra-Region and the GDP of foreign embassies in the UK is deducted from the GDP of the South East. The GDP of UK forces stationed abroad is also included to the Extra-region instead of being allocated to the mainland regions as in the UK regional accounts.

Methodological changes to GDP

13. There have been three significant changes to the estimates this year, which are described in the following notes. They concern the treatment of finance leased assets in the accounts (notes 14-16), the estimation of income from employment by industry (notes 17-19) and the estimation of rent at county level (note 20-23).

14. Finance leases are now recorded on a "user" basis in the national and regional accounts, with the lessees (users) regarded as undertaking capital formation with loans from the lessors (owners). The rental payments to the lessors are regarded as a mixture of loan repayments and finance charges. Previously, such assets were recorded on an "owner" basis, with the lessors regarded as undertaking the capital formation and receiving rent payments from the lessees.

15. This new treatment, which accords with SSAP 21, allocates the assets to the industry using them to generate value added from

productive activity. Assets on operating leases continue to be recorded on an "owner" basis.

16. Most finance lessors are financial companies or institutions classified to SIC division 8 (banking, finance, insurance, business services and leasing). The change has therefore resulted in higher estimates of capital formation by other industries such as manufacturing. The estimates of their trading profits are also increased, whereas division 8 trading profits are more negative. The effect on regional GDP is to decrease the GDP of regions where division 8 is relatively important (e.g. Greater London) and increase the profits of other regions.

17. The estimates of income from employment by region and industry are naturally less accurate than the regional totals and the national industry totals. The types of uncertainty include sampling error, lack of information about part-time earnings and weak assumptions about industrial disputes and sickness.

18. During 1991 we began a long term project to improve the estimates by introducing New Earnings Survey data on female part-time earnings in Great Britain into the accounts for the latest four years and basing our assumptions for earlier years and for Northern Ireland on this data. We also used information about sampling error to identify the least reliable earnings data for both part-time and full-time earnings and introduced smoothing over time for these cells.

19. Further improvements to the estimates for part-timers and to the smoothing process are planned for 1992 based on practical experience of the new method. An improvement to the method of dealing with industrial disputes is also planned. It is hoped to use information about the number of working days lost due to industrial disputes directly in the estimates. There is little likelihood of being able to refine the assumption that there is no regional variation in absence rates due to sickness.

20. The method of estimating rent at county level has been refined to incorporate explicit estimates of public corporation rent, business rent and private rent. Although there is considerable uncertainty about these estimates, it is felt that they remove a possibility of bias in the previous estimates. Previous estimates assumed that these categories of rent varied directly with the sum of owner occupiers imputed rent and local authority rent income.

21. The estimates of rent income of new towns and other public corporations such as Scottish Homes are based almost entirely on rent data or dwelling stock although guesses have had to be included for some of the smaller public corporations with rent income. Rent data was available in the national accounts for the English new towns and public corporations operating in only one county. However disaggregated rent data was not available for Scotland and Wales and the county estimates are based on dwelling stock.

22. Business rent is now estimated using average rateable values as in the regional accounts.

23. Private rent is allocated to counties using the distribution of private rented dwellings recorded in the 1981 Census of Population.

Revisions to GDP

24. Comparison of the income from employment component of county GDP, which is based on employment and earnings statistics, with estimates from the Newcastle National Income Statistics reveal a broad degree of agreement between the two sets of data for nearly all areas. Differences between the two can mainly be explained in terms of conceptual differences. However there are two substantial residual differences between the estimates for the Highlands and Islands and the Grampian region of Scotland. The Newcastle data suggests that the GDP estimates are too high for these areas.

25. A detailed comparison of the data for Highlands and Islands was conducted by the Scottish Office. It suggested that the income estimates previously used in GDP were overstated by about 20%. Consequently a downward adjustment has been made to the estimates in this article. The overstatement appears to have occurred because employment and earnings are not annual averages but point estimates. The earnings data in particular are for April and do not reflect the low earnings in many seasonal summer jobs. The comparison also suggested that the Newcastle data underestimate income, because the address information held by DSS is not up to date. This may be a particular problem in these areas because of the very mobile oil-related population.

26. The self-employment estimates for Greater London and the rest of the South East have been revised to correct a misallocation of income in the Survey of Personal Incomes. Previously some taxpayers in the outer London boroughs had been incorrectly allocated to the rest of the South East. A further adjustment for jobbers income made in the national accounts prior to 1986 has also been introduced into the regional accounts. This has reduced the GDP of Greater London for earlier years and partly offset the other change.

Personal Income, Household Income and Consumers' expenditure

27. Estimates of personal income, personal disposable income, household income and consumers' expenditure in 1989 are not

yet available and will be published in Regional Accounts part 2 in March or April 1992. Estimates of household income by county and consumers' expenditure by region for 1988 were published in Economic Trends, April 1991.

28. There are three main differences between the two concepts at county level. Firstly county GDP includes commuters' incomes in the county where the commuters work rather than in their county of residence. Secondly household income includes pensions and social security benefits and company profits, which do not contribute to GDP. Thirdly county GDP includes profits of companies active in the county, whereas household income included interest, rent and dividends paid to households. These differences were more fully discussed in Economic Trends July 1989.

GDFCF by industry

29. A consequence of the change of treatment of finance leased assets (described in notes 14-16) is that detailed estimates of UK GDFCF by industry including finance leased assets are not available for years up to 1988. Because of this it has not been possible to estimate consistent time series for regional GDFCF. Estimates for 1988 and 1989 now include leased assets and can no longer be compiled excluding leased assets. Before 1988 estimates can only be compiled excluding leased assets. These can be provided on request.

Regional Trends

30. A range of information on the regions of the United Kingdom can be found in Regional Trends 1991, (HMSO) price £23.00 net, together with selected statistics at county level and on districts. The range of topics covered in Regional Trends includes population, health, housing, education, employment and agriculture.

Central Statistical Office

1 Gross domestic product

Factor cost: current prices

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990 ¹
£ million											
United Kingdom	201 017	218 755	238 231	261 083	280 052	306 716	326 182	358 297	397 292	436 180	477 747
North	9 844	10 720	11 468	12 459	12 981	14 258	15 136	16 854	18 464	20 439	22 243
Yorkshire & Humberside	15 603	16 627	18 176	19 775	20 702	23 174	25 702	27 828	30 547	33 704	37 448
East Midlands	12 670	13 696	15 026	16 284	17 460	19 378	21 364	23 602	26 268	29 213	32 368
East Anglia	6 186	6 706	7 520	8 188	9 215	10 098	11 317	12 302	13 938	15 578	17 312
South East	67 155	72 655	77 988	86 269	91 754	101 862	113 350	125 253	141 337	155 484	169 398
Greater London	29 837	32 001	33 801	36 836	38 534	43 043	47 987	52 905	58 759	64 605	70 699
Rest of South East	37 319	40 654	44 188	49 432	53 220	58 819	65 362	72 348	82 578	90 879	98 699
South West	13 770	14 985	16 662	18 304	19 533	21 584	23 991	26 587	29 865	32 834	36 300
West Midlands	16 443	17 265	18 695	20 375	21 807	24 444	26 646	29 363	33 105	36 290	39 727
North West	21 214	22 349	24 274	26 238	27 695	30 359	33 438	36 037	40 110	43 727	47 412
England	162 885	175 003	189 810	207 890	221 148	245 157	270 944	297 827	333 634	367 268	402 207
Wales	8 074	8 639	9 550	10 449	10 807	11 926	13 247	14 998	16 948	18 443	20 053
Scotland	16 682	18 349	20 030	21 874	22 799	25 014	27 208	29 481	32 434	35 482	38 738
Northern Ireland	4 085	4 431	4 868	5 325	5 652	6 306	6 996	7 441	8 243	9 097	9 821
United Kingdom less Continental Shelf	191 726	206 422	224 257	245 538	260 406	288 403	318 394	349 746	391 259	430 290	470 820
Continental Shelf ²	8 516	11 589	13 465	15 792	19 111	18 457	8 471	9 565	6 919	6 524	6 767
Statistical discrepancy (income adjustment)	775	744	509	-247	535	-144	-683	-1 014	-886	-634	160
United Kingdom less Continental Shelf³ = 100%											
United Kingdom	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
North	5.1	5.2	5.1	5.1	5.0	4.9	4.8	4.8	4.7	4.7	4.7
Yorkshire & Humberside	8.1	8.1	8.1	8.1	7.9	8.0	8.1	8.0	7.8	7.8	8.0
East Midlands	6.6	6.6	6.7	6.6	6.7	6.7	6.7	6.7	6.7	6.8	6.9
East Anglia	3.2	3.2	3.4	3.3	3.5	3.5	3.6	3.5	3.6	3.6	3.7
South East	35.0	35.2	34.8	35.1	35.2	35.3	35.6	35.8	36.1	36.1	36.0
Greater London	15.6	15.5	15.1	15.0	14.8	14.9	15.1	15.1	15.0	15.0	15.0
Rest of South East	19.5	19.7	19.7	20.1	20.4	20.4	20.5	20.7	21.1	21.1	21.0
South West	7.2	7.3	7.4	7.5	7.5	7.5	7.5	7.6	7.6	7.6	7.7
West Midlands	8.6	8.4	8.3	8.3	8.4	8.5	8.4	8.4	8.5	8.4	8.4
North West	11.1	10.8	10.8	10.7	10.6	10.5	10.5	10.3	10.3	10.2	10.1
England	85.0	84.8	84.6	84.7	84.9	85.0	85.1	85.2	85.3	85.4	85.4
Wales	4.2	4.2	4.3	4.3	4.2	4.1	4.2	4.3	4.3	4.3	4.3
Scotland	8.7	8.9	8.9	8.9	8.8	8.7	8.5	8.4	8.3	8.2	8.2
Northern Ireland	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1
Per head, £⁴											
United Kingdom	3 569	3 882	4 231	4 633	4 960	5 417	5 746	6 294	6 962	7 621	8 322
United Kingdom less Continental shelf ³	3 404	3 663	3 983	4 358	4 612	5 094	5 609	6 143	6 856	7 518	8 201
North	3 147	3 439	3 691	4 019	4 197	4 620	4 914	5 478	6 012	6 651	7 233
Yorkshire & Humberside	3 169	3 381	3 702	4 028	4 221	4 727	5 246	5 679	6 218	6 822	7 562
East Midlands	3 301	3 555	3 901	4 219	4 507	4 972	5 450	5 987	6 616	7 305	8 054
East Anglia	3 287	3 539	3 934	4 254	4 751	5 140	5 683	6 109	6 851	7 619	8 408
South East	3 952	4 271	4 586	5 062	5 362	5 925	6 565	7 233	8 149	8 944	9 703
Greater London	4 355	4 702	4 995	5 453	5 704	6 360	7 083	7 814	8 724	9 562	10 406
Rest of South East	3 680	3 984	4 316	4 806	5 139	5 643	6 231	6 860	7 784	8 551	9 256
South West	3 158	3 420	3 789	4 137	4 379	4 796	5 281	5 794	6 445	7 057	7 779
West Midlands	3 171	3 329	3 609	3 936	4 213	4 716	5 143	5 649	6 358	6 957	7 611
North West	3 275	3 460	3 774	4 093	4 330	4 754	5 246	5 657	6 303	6 854	7 421
England	3 481	3 738	4 056	4 438	4 710	5 204	5 734	6 282	7 019	7 701	8 408
Wales	2 867	3 071	3 403	3 721	3 850	4 241	4 696	5 288	5 932	6 419	6 960
Scotland	3 212	3 542	3 877	4 247	4 431	4 870	5 313	5 767	6 367	6 970	7 592
Northern Ireland	2 665	2 882	3 165	3 450	3 646	4 048	4 465	4 724	5 223	5 747	6 181
Per head, United Kingdom less Continental Shelf³ = 100											
United Kingdom	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
North	92.5	93.9	92.7	92.2	91.0	90.7	87.6	89.2	87.7	88.5	88.2
Yorkshire & Humberside	93.1	92.3	92.9	92.4	91.5	92.8	93.5	92.4	90.7	90.7	92.2
East Midlands	97.0	97.0	97.9	96.8	97.7	97.6	97.2	97.5	96.5	97.2	98.2
East Anglia	96.6	96.6	98.8	97.6	103.0	100.9	101.3	99.4	99.9	101.3	102.5
South East	116.1	116.6	115.1	116.2	116.2	116.3	117.0	117.7	118.9	119.0	118.3
Greater London	128.0	128.4	125.4	125.1	123.7	124.9	126.3	127.2	127.2	127.2	126.9
Rest of South East	108.1	108.8	108.4	110.3	111.4	110.8	111.1	111.7	113.5	113.7	112.9
South West	92.8	93.4	95.1	94.9	94.9	94.1	94.1	94.3	94.0	93.9	94.9
West Midlands	93.2	90.9	90.6	90.3	91.4	92.6	91.7	92.0	92.7	92.5	92.8
North West	96.2	94.5	94.8	93.9	93.9	93.3	93.5	92.1	91.9	91.2	90.5
England	102.3	102.0	101.8	101.8	102.1	102.2	102.2	102.3	102.4	102.4	102.5
Wales	84.2	83.8	85.4	85.4	83.5	83.3	83.7	86.1	86.5	85.4	84.9
Scotland	94.4	96.7	97.3	97.5	96.1	95.6	94.7	93.9	92.9	92.7	92.6
Northern Ireland	78.3	78.7	79.5	79.2	79.0	79.5	79.6	76.9	76.2	76.4	75.4

1 Provisional.

2 Gross domestic product for the Continental Shelf region does not include income from employment, which is allocated to the region of residence of the employee.

average estimate of United Kingdom GDP by a statistical discrepancy. This discrepancy is excluded from the figures for the United Kingdom less Continental Shelf.

4 Estimates of gross domestic product per head cannot be calculated for the

2 Factor incomes in the gross domestic product

Factor cost: current prices

	Income from employment	Income from self- employment	Gross trading profits and surpluses	Less stock appreciation	Rent ¹	Gross domestic product
1987						
United Kingdom	229 532	39 383	56 461	4 709	29 079	358 297 ²
North	11 331	1 387	3 110	272	1 298	16 854
Yorkshire & Humberside	18 331	2 967	4 995	412	1 947	27 828
East Midlands	15 374	2 786	4 141	348	1 648	23 602
East Anglia	7 479	2 051	1 933	164	1 003	12 302
South East	82 710	14 397	17 910	1 443	11 680	125 253
Greater London	35 050	5 092	7 690	558	5 631	52 905
Rest of South East	47 660	9 305	10 220	885	6 049	72 348
South West	17 210	3 860	3 540	358	2 336	26 587
West Midlands	19 234	2 997	5 195	474	2 411	29 363
North West	23 798	3 199	6 596	535	2 978	36 037
England	195 468	33 644	47 420	4 007	25 301	297 827
Wales	9 269	1 658	3 217	207	1 061	14 998
Scotland	19 872	2 999	4 881	407	2 135	29 481
Northern Ireland	4 922	1 082	942	88	582	7 441
Continental Shelf ³	-	-	9 581	16	-	9 565
Statistical discrepancy (income adjustment)	-	-	-	-	-	-1 014
1988						
United Kingdom	255 357	44 835	64 408	6 267	32 926	397 292 ²
North	12 198	1 537	3 638	352	1 442	18 464
Yorkshire & Humberside	19 972	3 312	5 675	544	2 132	30 547
East Midlands	16 887	3 119	4 825	464	1 901	26 268
East Anglia	8 532	2 246	2 257	229	1 132	13 938
South East	93 346	16 453	19 995	1 876	13 419	141 337
Greater London	39 095	5 545	8 327	728	6 519	58 759
Rest of South East	54 251	10 908	11 668	1 149	6 900	82 578
South West	19 156	4 497	4 081	495	2 627	29 865
West Midlands	21 597	3 462	5 959	641	2 727	33 105
North West	26 177	3 702	7 666	685	3 250	40 110
England	217 865	38 329	54 096	5 286	28 630	333 634
Wales	10 235	1 966	3 766	304	1 285	16 948
Scotland	21 853	3 264	5 503	541	2 355	32 434
Northern Ireland	5 404	1 276	1 043	135	656	8 243
Continental Shelf ³	-	-	6 864	-55	-	6 919
Statistical discrepancy (income adjustment)	-	-	-	-	-	-886
1989						
United Kingdom	283 585	51 605	66 230	7 226	36 096	436 180 ²
North	13 490	1 833	3 950	377	1 543	20 439
Yorkshire & Humberside	22 089	3 957	6 004	638	2 291	33 704
East Midlands	18 911	3 746	4 861	524	2 219	29 213
East Anglia	9 634	2 551	2 375	266	1 283	15 578
South East	104 377	18 400	20 330	2 207	14 584	155 484
Greater London	43 828	6 323	8 262	838	7 030	64 605
Rest of South East	60 549	12 077	12 068	1 369	7 554	90 879
South West	21 204	5 311	4 044	570	2 844	32 834
West Midlands	23 816	3 972	6 112	671	3 061	36 290
North West	28 678	4 227	8 098	839	3 563	43 727
England	242 200	43 997	55 774	6 092	31 389	367 268
Wales	11 349	2 330	3 637	311	1 439	18 443
Scotland	24 065	3 822	5 683	666	2 578	35 482
Northern Ireland	5 972	1 456	1 136	157	691	9 097
Continental Shelf ³	-	-	6 590	66	-	6 524
Statistical discrepancy (income adjustment)	-	-	-	-	-	-634
1990 ⁴						
United Kingdom	316 408	57 661	60 353	6 313	42 711	477 747 ²
North	15 090	2 061	3 618	326	1 800	22 243
Yorkshire & Humberside	25 375	4 404	5 573	601	2 696	37 448
East Midlands	21 385	4 176	4 618	455	2 644	32 368
East Anglia	10 954	2 803	2 236	216	1 536	17 312
South East	115 206	20 803	17 748	1 826	17 467	169 398
Greater London	48 482	7 628	6 779	644	8 454	70 699
Rest of South East	66 724	13 175	10 969	1 182	9 013	98 699
South West	24 003	5 465	3 821	470	3 480	36 300
West Midlands	26 701	4 516	5 584	605	3 530	39 727
North West	31 756	4 965	7 395	760	4 056	47 412
England	270 472	49 193	50 592	5 259	37 210	402 207
Wales	12 462	2 554	3 592	341	1 787	20 053
Scotland	26 903	4 328	5 140	581	2 948	38 738
Northern Ireland	6 572	1 586	1 029	132	766	9 821
Continental Shelf ³	-	-	6 845	78	-	6 767
Statistical discrepancy (income adjustment)	-	-	-	-	-	160

¹ Including imputed charges for consumption of non-trading capital.

² See footnote 3 to Table 1.

3 Gross domestic product by industry groups¹ Factor cost: current prices

£ million

	1987	1988	1989	1990 ²	1987	1988	1989	1990 ²
	North				Yorkshire & Humberside			
Agriculture, forestry and fishing	277	297	338	322	554	517	601	600
Energy and water supply	1 105	1 161	1 226	1 315	2 002	1 993	1 969	2 114
Manufacturing	4 839	5 357	5 943	6 171	7 612	8 260	9 139	9 882
Minerals, metals, and chemicals ³	1 698	2 006	2 126	..	1 998	2 188	2 391	..
Metal goods, engineering, vehicles	1 576	1 652	1 917	..	2 340	2 625	3 132	..
Other manufacturing industries	1 565	1 699	1 900	..	3 274	3 447	3 615	..
Construction	1 187	1 385	1 644	1 825	1 841	2 226	2 598	2 959
Distribution, hotels and catering; repairs	2 082	2 294	2 561	2 935	4 131	4 773	5 297	5 964
Transport and communication	1 073	1 143	1 310	1 483	1 874	2 019	2 218	2 501
Financial & business services, etc ⁴	1 780	1 870	2 255	2 433	3 096	3 217	4 019	4 659
Ownership of dwellings	911	992	1 059	1 282	1 407	1 498	1 602	1 931
Public administration and defence ⁵	1 067	1 152	1 204	1 372	1 700	1 905	1 975	2 170
Education and health services	1 897	2 101	2 326	2 498	2 928	3 258	3 590	3 944
Other services	1 178	1 299	1 302	1 374	1 728	2 019	2 182	2 339
Adjustment for financial services	-541	-588	-728	-766	-1 046	-1 138	-1 487	-1 617
Total	16 854	18 463	20 439	22 243	27 828	30 547	33 704	37 448
	East Midlands				East Anglia			
Agriculture, forestry and fishing	697	598	732	787	718	666	764	767
Energy and water supply	1 702	1 789	1 784	1 833	326	357	390	443
Manufacturing	7 360	8 043	8 730	9 371	2 865	3 270	3 562	3 831
Minerals, metals, and chemicals ³	1 201	1 413	1 523	..	420	485	483	..
Metal goods, engineering, vehicles	2 622	2 902	3 233	..	993	1 186	1 359	..
Other manufacturing industries	3 537	3 728	3 974	..	1 453	1 599	1 719	..
Construction	1 565	1 936	2 221	2 461	988	1 178	1 350	1 513
Distribution, hotels and catering; repairs	3 215	3 717	4 243	4 795	1 806	2 121	2 367	2 731
Transport and communication	1 363	1 521	1 694	1 907	1 058	1 171	1 278	1 440
Financial & business services, etc ⁴	2 418	2 759	3 498	3 948	1 596	1 861	2 304	2 473
Ownership of dwellings	1 231	1 410	1 623	2 038	752	831	918	1 142
Public administration and defence ⁵	1 639	1 705	1 827	2 039	861	902	980	1 084
Education and health services	1 936	2 324	2 521	2 782	1 138	1 337	1 477	1 643
Other services	1 217	1 264	1 396	1 501	730	860	1 001	1 077
Adjustment for financial services	-740	-799	-1 055	-1 094	-535	-617	-814	-832
Total	23 602	26 268	29 213	32 368	12 302	13 938	15 578	17 312
	South East				Greater London			
Agriculture, forestry and fishing	984	911	1 006	1 094	49	48	53	59
Energy and water supply	3 419	3 453	3 662	4 252	1 350	1 328	1 424	1 717
Manufacturing	23 202	25 263	27 268	28 642	7 532	8 154	8 852	9 239
Minerals, metals, and chemicals ³	3 870	4 302	4 553	..	989	1 154	1 319	..
Metal goods, engineering, vehicles	10 387	11 365	12 321	..	2 763	3 025	3 178	..
Other manufacturing industries	8 945	9 596	10 395	..	3 780	3 975	4 355	..
Construction	8 368	10 144	11 322	12 567	2 695	3 189	3 550	4 099
Distribution, hotels and catering; repairs	18 181	21 180	23 317	25 081	7 850	8 841	9 541	10 272
Transport and communication	10 925	12 129	13 229	14 315	5 457	6 004	6 361	6 805
Financial & business services, etc ⁴	31 592	36 573	43 262	46 478	16 922	19 199	22 844	24 312
Ownership of dwellings	8 507	9 507	10 150	12 466	3 736	4 185	4 379	5 529
Public administration and defence ⁵	8 480	9 209	9 907	10 975	3 148	3 447	3 769	4 185
Education and health services	10 530	11 675	12 630	13 615	4 944	5 319	5 779	6 228
Other services	9 521	10 879	12 060	12 860	4 733	5 223	5 818	6 184
Adjustment for financial services	-8 459	-9 587	-12 330	-12 948	-5 512	-6 177	-7 765	-7 932
Total	125 253	141 338	155 484	169 396	52 905	58 759	64 605	70 698
	Rest of South East				South West			
Agriculture, forestry and fishing	936	863	954	1 035	674	711	817	768
Energy and water supply	2 069	2 125	2 238	2 535	954	1 006	1 103	1 349
Manufacturing	15 670	17 109	18 417	19 403	5 838	6 462	6 808	7 375
Minerals, metals, and chemicals ³	2 881	3 148	3 234	..	784	865	913	..
Metal goods, engineering, vehicles	7 625	8 340	9 143	..	2 698	3 126	3 225	..
Other manufacturing industries	5 165	5 621	6 040	..	2 356	2 471	2 669	..
Construction	5 673	6 955	7 772	8 468	2 197	2 628	2 999	3 215
Distribution, hotels and catering; repairs	10 331	12 339	13 776	14 808	4 117	4 844	5 460	5 909
Transport and communication	5 468	6 125	6 868	7 509	1 653	1 894	2 003	2 218
Financial & business services, etc ⁴	14 670	17 374	20 418	22 166	4 105	4 669	5 713	6 135
Ownership of dwellings	4 772	5 322	5 772	6 937	1 752	1 930	2 050	2 593
Public administration and defence ⁵	5 332	5 763	6 138	6 790	2 568	2 773	2 989	3 381
Education and health services	5 586	6 357	6 851	7 387	2 484	2 790	3 054	3 451
Other services	4 788	5 656	6 241	6 676	1 701	1 845	2 062	2 216
Adjustment for financial services	-2 947	-3 410	-4 566	-5 016	-1 455	-1 687	-2 225	-2 311
Total	72 348	82 579	90 879	98 699	26 587	29 865	32 834	36 300

See footnotes on next page.

3 Gross domestic product by industry groups¹

Factor cost: current prices
(Cont'd)

£ million

	1987	1988	1989	1990 ²	1987	1988	1989	1990 ²
West Midlands					North West			
Agriculture, forestry and fishing	475	487	527	550	297	310	344	338
Energy and water supply	1 168	1 220	1 179	1 258	1 580	1 548	1 571	1 711
Manufacturing	9 718	10 754	11 697	12 364	10 936	12 327	13 245	13 816
Minerals,metals,and chemicals ³	1 571	1 849	1 981	..	2 499	2 848	2 831	..
Metal goods, engineering, vehicles	5 599	6 122	6 617	..	4 151	4 839	5 603	..
Other manufacturing industries	2 547	2 783	3 100	..	4 286	4 640	4 811	..
Construction	1 869	2 296	2 593	2 919	2 172	2 588	2 917	3 255
Distribution, hotels and catering; repairs	4 066	4 792	5 286	5 846	5 118	5 806	6 293	7 282
Transport and communication	1 664	1 923	2 110	2 276	2 608	2 888	3 127	3 319
Financial & business services,etc ⁴	3 720	4 135	4 946	5 361	4 750	5 162	6 445	6 991
Ownership of dwellings	1 866	2 072	2 304	2 769	2 265	2 405	2 606	3 055
Public administration and defence ⁵	1 620	1 695	1 819	2 012	2 300	2 445	2 459	2 561
Education and health services	2 627	2 989	3 362	3 819	3 444	3 874	4 273	4 697
Other services	1 665	1 951	2 043	2 207	2 197	2 543	2 770	2 871
Adjustment for financial services	-1 095	-1 210	-1 575	-1 653	-1 630	-1 786	-2 322	-2 481
Total	29 363	33 105	36 290	39 727	36 037	40 110	43 727	47 412
England					Wales			
Agriculture, forestry and fishing	4 675	4 497	5 128	5 225	367	387	402	415
Energy and water supply	12 256	12 528	12 884	14 275	1 252	1 100	1 055	1 096
Manufacturing	72 370	79 737	86 393	91 450	4 092	4 935	5 092	5 472
Minerals,metals,and chemicals ³	14 040	15 957	16 801	..	1 617	1 958	1 943	..
Metal goods, engineering, vehicles	30 367	33 817	37 408	..	1 288	1 596	1 730	..
Other manufacturing industries	27 963	29 964	32 184	..	1 186	1 381	1 419	..
Construction	20 188	24 381	27 643	30 713	924	1 082	1 302	1 458
Distribution, hotels and catering; repairs	42 715	49 527	54 824	60 542	1 920	2 209	2 525	2 765
Transport and communication	22 219	24 689	26 968	29 460	882	988	1 118	1 281
Financial & business services,etc ⁴	53 057	60 246	72 444	78 478	1 526	1 652	1 990	2 147
Ownership of dwellings	18 692	20 644	22 312	27 277	717	875	981	1 271
Public administration and defence ⁵	20 235	21 788	23 159	25 594	1 237	1 401	1 416	1 609
Education and health services	26 984	30 349	33 233	36 450	1 656	1 833	2 073	2 129
Other services	19 937	22 661	24 816	26 444	881	982	1 137	1 133
Adjustment for financial services	-15 502	-17 411	-22 536	-23 702	-456	-495	-647	-723
Total	297 827	333 634	367 268	402 207	14 998	16 948	18 443	20 053
Scotland					Northern Ireland			
Agriculture, forestry and fishing	916	887	1 004	1 074	340	379	431	388
Energy and water supply	1 536	1 696	1 705	1 849	292	299	306	347
Manufacturing	6 797	7 415	7 935	8 345	1 330	1 417	1 596	1 728
Minerals,metals,and chemicals ³	1 191	1 350	1 438	..	175	212	249	..
Metal goods, engineering, vehicles	2 486	2 669	3 044	..	314	375	375	..
Other manufacturing industries	3 121	3 395	3 452	..	840	829	972	..
Construction	2 154	2 467	2 758	3 178	503	582	662	735
Distribution, hotels and catering; repairs	3 980	4 526	4 875	5 529	1 003	1 116	1 206	1 314
Transport and communication	2 313	2 581	2 719	2 808	378	427	457	482
Financial & business services,etc ⁴	4 012	4 237	5 075	5 503	791	886	1 052	1 132
Ownership of dwellings	1 233	1 325	1 444	1 699	372	411	417	472
Public administration and defence ⁵	2 427	2 663	2 764	2 924	1 084	1 206	1 283	1 397
Education and health services	3 433	3 824	4 487	5 156	1 063	1 164	1 301	1 408
Other services	2 037	2 319	2 603	2 636	524	612	717	770
Adjustment for financial services	-1 358	-1 506	-1 887	-1 962	-239	-256	-330	-352
Total	29 481	32 434	35 482	38 738	7 441	8 243	9 097	9 821
United Kingdom								
Agriculture, forestry and fishing	6 299	6 149	6 965	7 102				
Energy and water supply	15 336	15 623	15 950	17 567				
Continental shelf	9 565	6 919	6 524	6 767				
Manufacturing	84 589	93 504	101 015	106 995				
Minerals,metals,and chemicals ³	17 023	19 478	20 431	..				
Metal goods, engineering, vehicles	34 456	38 457	42 557	..				
Other manufacturing industries	33 110	35 569	38 027	..				
Construction	23 769	28 512	32 365	36 085				
Distribution, hotels and catering; repairs	49 618	57 378	63 429	70 151				
Transport and communication	25 792	28 684	31 262	34 031				
Financial & business services,etc ⁴	59 386	67 021	80 561	87 260				
Ownership of dwellings	21 013	23 255	25 154	30 719				
Public administration and defence ⁵	24 984	27 058	28 622	31 524				
Education and health services	33 136	37 170	41 094	45 143				
Other services	23 379	26 573	29 274	30 983				
Adjustment for financial services	-17 555	-19 668	-25 401	-26 740				
Statistical discrepancy (income adjustment)	-1 014	-886	-634	160				
United Kingdom	358 297	397 292	436 180	477 747				

	Population ('000s) 1989	Area (sq.km) 1989	Popu- lation per sq.km 1989	Employ- ment ('000s) 1989	Unem- ployment rate (%) 1989	Gross domestic product (£million)				
						1979	1981	1984	1987	1989
United Kingdom ¹	57 236	242 494	236	22 255	7	166 189	206 422	260 406	349 746	430 290
Cleveland	553	583	948	198	12	1 777	2 069	2 522	3 101	4 048
Cumbria	492	6 810	72	198	5	1 323	1 830	2 388	3 467	3 965
Durham	597	2 436	245	191	9	1 447	1 940	2 105	2 798	3 522
Northumberland	304	5 032	60	90	9	658	955	1 155	1 433	1 835
Tyne and Wear	1 128	540	2 089	415	11	3 228	3 927	4 811	6 054	7 070
North	3 073	15 401	200	1 093	10	8 433	10 720	12 981	16 854	20 439
Humberside	856	3 512	244	327	9	2 368	2 733	3 610	5 108	6 376
North Yorkshire	722	8 309	87	259	5	1 758	2 393	3 313	4 207	5 167
South Yorkshire	1 295	1 560	830	447	11	3 721	4 465	5 073	6 529	7 702
West Yorkshire	2 067	2 039	1 014	830	7	5 679	7 036	8 706	11 984	14 458
Yorkshire and Humberside	4 940	15 420	320	1 863	8	13 526	16 627	20 702	27 828	33 704
Derbyshire	929	2 631	353	345	6	2 467	3 038	3 873	5 109	6 326
Leicestershire	892	2 553	349	362	4	2 493	3 262	4 217	5 845	7 193
Lincolnshire	587	5 915	99	193	7	1 457	1 860	2 360	3 011	3 811
Northamptonshire	576	2 367	243	237	3	1 457	1 775	2 523	3 532	4 559
Nottinghamshire	1 015	2 164	469	400	7	2 982	3 762	4 487	6 106	7 324
East Midlands	3 999	15 630	256	1 538	6	10 855	13 696	17 460	23 602	29 213
Cambridgeshire	655	3 409	192	264	4	1 741	2 261	3 299	4 377	5 504
Norfolk	749	5 368	139	268	5	1 849	2 404	3 110	4 225	5 410
Suffolk	641	3 797	169	248	4	1 603	2 040	2 805	3 700	4 665
East Anglia	2 045	12 573	163	780	4	5 194	6 706	9 215	12 302	15 578
Bedfordshire	531	1 235	430	216	3	1 454	1 768	2 395	3 173	4 147
Berkshire	748	1 259	594	332	2	2 381	2 928	3 894	5 542	7 099
Buckinghamshire	634	1 883	337	254	2	1 483	1 919	2 948	4 046	5 278
East Sussex	712	1 795	397	225	5	1 462	1 971	2 553	3 317	4 172
Essex	1 532	3 672	417	502	5	3 962	4 793	5 922	8 029	10 111
Greater London	6 756	1 579	4 279	3 397	5	29 937	37 080	44 986	61 692	75 156
Hampshire	1 546	3 777	409	589	4	4 572	5 812	7 406	9 810	11 849
Hertfordshire	987	1 634	604	387	3	2 975	3 752	4 909	6 549	7 945
Isle of Wight	130	381	342	41	9	261	328	449	608	750
Kent	1 524	3 731	408	528	5	3 794	4 776	5 971	8 224	10 556
Oxfordshire	578	2 608	221	238	2	1 470	1 859	2 644	3 588	4 495
Surrey	1 000	1 679	596	390	..	2 638	3 484	4 712	6 381	8 370
West Sussex	705	1 989	354	280	2	1 674	2 185	2 967	4 296	5 558
South East	17 384	27 222	639	7 379	4	58 061	72 655	91 754	125 253	155 484
Avon	953	1 346	708	402	5	2 774	3 498	4 422	6 094	7 385
Cornwall	464	3 564	130	137	10	926	1 210	1 546	2 083	2 663
Devon	1 030	6 711	153	344	6	2 392	3 134	3 993	5 113	6 439
Dorset	657	2 654	247	217	4	1 526	1 916	2 570	3 633	4 492
Gloucestershire	529	2 643	200	214	4	1 498	1 897	2 449	3 419	4 271
Somerset	461	3 451	134	162	5	1 080	1 447	1 934	2 630	3 248
Wiltshire	558	3 481	160	211	3	1 478	1 903	2 614	3 611	4 341
South West	4 652	23 849	195	1 686	5	11 674	14 985	19 533	26 587	32 834
Hereford & Worcestershire	675	3 927	172	232	4	1 562	1 893	2 547	3 422	4 306
Shropshire	403	3 490	116	141	5	938	1 127	1 542	2 012	2 617
Staffordshire	1 039	2 716	383	382	5	2 579	3 188	4 117	5 580	6 918
Warwickshire	483	1 981	244	188	4	1 111	1 541	1 908	2 840	3 585
West Midlands	2 615	899	2 909	1 111	8	8 544	9 515	11 694	15 509	18 862
West Midlands	5 216	13 013	401	2 054	7	14 732	17 265	21 807	29 363	36 290
Cheshire	959	2 328	412	382	6	2 910	3 648	4 632	6 357	7 684
Greater Manchester	2 582	1 287	2 007	1 018	8	7 761	9 169	11 552	15 327	18 011
Lancashire	1 391	3 063	454	508	7	3 568	4 561	5 669	7 430	9 749
Merseyside	1 448	652	2 221	476	13	4 264	4 971	5 841	6 922	8 283
North West	6 380	7 331	870	2 384	9	18 502	22 349	27 695	36 037	43 727
Clwyd	411	2 428	169	135	7	870	1 038	1 525	2 224	2 865
Dyfed & Powys	469	10 865	43	138	8	1 169	1 368	1 704	2 419	2 745
Gwent	447	1 377	325	153	8	1 078	1 313	1 683	2 325	2 871
Gwynedd	241	3 865	62	74	11	517	662	810	1 135	1 467
Mid Glamorgan	538	1 017	529	163	10	1 217	1 501	1 724	2 393	2 920
South Glamorgan	404	417	969	174	7	1 183	1 480	2 003	2 548	3 247
West Glamorgan	363	817	444	124	8	1 038	1 277	1 359	1 954	2 329
Wales	2 873	20 768	138	963	8	7 073	8 639	10 807	14 998	18 443
Borders	103	4 672	22	36	6	273	342	408	580	650
Central	271	2 631	103	97	10	839	1 040	1 106	1 567	1 925
Dumfries & Galloway	148	6 370	23	50	8	388	518	634	800	964
Fife	345	1 307	264	109	10	972	1 254	1 499	1 781	2 093
Grampian	504	8 704	58	222	5	1 563	2 131	2 989	3 629	4 560
Highlands & Islands	274	30 697	9	17	10	641	850	1 038	1 419	1 623
Lothian	743	1 755	423	321	7	2 281	2 877	3 638	4 745	5 696
Strathclyde	2 311	13 537	171	840	12	6 554	7 998	9 824	12 833	15 422
Tayside	393	7 493	52	146	9	1 062	1 338	1 662	2 126	2 548
Scotland	5 091	77 167	66	1 936	10	14 574	18 349	22 799	29 481	35 482
Northern Ireland	1 583	14 120	112	580	16	3 566	4 431	5 652	7 441	9 097

¹ Excluding the Continental Shelf and the statistical discrepancy of the income based measure.

Gross domestic product by county at factor cost: current prices

(cont'd)

	Gross domestic product per head (£)					Gross domestic product per head (UK=100)				
	1979	1981	1984	1987	1989	1979	1981	1984	1987	1989
United Kingdom ¹	2 955	3 663	4 612	6 143	7 518	100.0	100.0	100.0	100.0	100.0
Cleveland	3 098	3 628	4 483	5 594	7 322	104.8	99.0	97.2	91.1	97.4
Cumbria	2 751	3 803	4 937	7 121	8 065	93.1	103.8	107.0	115.9	107.3
Durham	2 364	3 173	3 488	4 674	5 901	80.0	86.6	75.6	76.1	78.5
Northumberland	2 216	3 189	3 841	4 763	6 043	75.0	87.1	83.3	77.5	80.4
Tyne and Wear	2 767	3 399	4 210	5 330	6 267	93.7	92.8	91.3	86.8	83.4
North	2 694	3 439	4 197	5 478	6 651	91.2	93.9	91.0	89.2	88.5
Humberside	2 762	3 186	4 239	6 034	7 446	93.5	87.0	91.9	98.2	99.1
North Yorkshire	2 600	3 536	4 793	5 961	7 154	88.0	96.5	103.9	97.0	95.2
South Yorkshire	2 828	3 390	3 886	5 040	5 947	95.7	92.5	84.2	82.0	79.1
West Yorkshire	2 741	3 404	4 234	5 839	6 996	92.8	92.9	91.8	95.0	93.1
Yorkshire and Humberside	2 749	3 381	4 221	5 679	6 822	93.0	92.3	91.5	92.4	90.7
Derbyshire	2 712	3 323	4 248	5 561	6 807	91.8	90.7	92.1	90.5	90.5
Leicestershire	2 940	3 798	4 868	6 646	8 065	99.5	103.7	105.5	108.2	107.3
Lincolnshire	2 673	3 364	4 241	5 240	6 495	90.5	91.8	92.0	85.3	86.4
Northamptonshire	2 771	3 333	4 673	6 287	7 914	93.8	91.0	101.3	102.3	105.3
Nottinghamshire	3 012	3 783	4 488	6 058	7 217	101.9	103.3	97.3	98.6	96.0
East Midlands	2 843	3 555	4 507	5 987	7 305	96.2	97.0	97.7	97.5	97.2
Cambridgeshire	3 005	3 824	5 416	6 814	8 402	101.7	104.4	117.4	110.9	111.8
Norfolk	2 673	3 426	4 352	5 739	7 227	90.5	93.5	94.4	93.4	96.1
Suffolk	2 704	3 392	4 556	5 826	7 277	91.5	92.6	98.8	94.8	96.8
East Anglia	2 786	3 539	4 751	6 109	7 619	94.3	96.6	103.0	99.4	101.3
Bedfordshire	2 913	3 465	4 643	6 033	7 808	98.6	94.6	100.7	98.2	103.9
Berkshire	3 492	4 221	5 444	7 483	9 485	118.2	115.2	118.0	121.8	126.2
Buckinghamshire	2 684	3 356	4 958	6 513	8 321	90.8	91.6	107.5	106.0	110.7
East Sussex	2 212	2 962	3 760	4 751	5 861	74.8	80.9	81.5	77.3	78.0
Essex	2 711	3 232	3 957	5 276	6 599	91.7	88.2	85.8	85.9	87.8
Greater London	4 346	5 449	6 659	9 112	11 124	147.1	148.7	144.4	148.3	148.0
Hampshire	3 121	3 905	4 906	6 383	7 664	105.6	106.6	106.4	103.9	101.9
Hertfordshire	3 109	3 889	5 007	6 636	8 046	105.2	106.2	108.6	108.0	107.0
Isle of Wight	2 231	2 782	3 709	4 791	5 747	75.5	75.9	80.4	78.0	76.4
Kent	2 584	3 218	4 003	5 444	6 928	87.5	87.8	86.8	88.6	92.2
Oxfordshire	2 745	3 430	4 756	6 207	7 782	92.9	93.6	103.1	101.0	103.5
Surrey	2 602	3 426	4 644	6 379	8 370	88.1	93.5	100.7	103.8	111.3
West Sussex	2 567	3 279	4 345	6 137	7 886	86.9	89.5	94.2	99.9	104.9
South East	3 425	4 271	5 362	7 233	8 944	115.9	116.6	116.2	117.7	119.0
Avon	3 001	3 765	4 706	6 406	7 751	101.6	102.8	102.0	104.3	103.1
Cornwall	2 191	2 836	3 522	4 598	5 739	74.1	77.4	76.4	74.8	76.3
Devon	2 497	3 245	4 082	5 063	6 252	84.5	88.6	88.5	82.4	83.2
Dorset	2 592	3 201	4 160	5 601	6 839	87.7	87.4	90.2	91.2	91.0
Gloucestershire	2 996	3 750	4 809	6 547	8 065	101.4	102.4	104.3	106.6	107.3
Somerset	2 558	3 359	4 385	5 814	7 047	86.6	91.7	95.1	94.6	93.7
Wiltshire	2 847	3 624	4 876	6 555	7 775	96.4	98.9	105.7	106.7	103.4
South West	2 693	3 420	4 379	5 794	7 057	91.1	93.4	94.9	94.3	93.9
Hereford & Worcestershire	2 493	2 975	3 949	5 145	6 378	84.4	81.2	85.6	83.7	84.8
Shropshire	2 501	2 961	3 991	5 074	6 490	84.6	80.8	86.5	82.6	86.3
Staffordshire	2 555	3 128	4 038	5 431	6 659	86.5	85.4	87.6	88.4	88.6
Warwickshire	2 339	3 230	3 991	5 866	7 421	79.2	88.2	86.5	95.5	98.7
West Midlands	3 171	3 559	4 418	5 910	7 212	107.3	97.2	95.8	96.2	95.9
West Midlands	2 844	3 329	4 213	5 649	6 957	96.3	90.9	91.4	92.0	92.5
Cheshire	3 136	3 912	4 941	6 678	8 016	106.1	106.8	107.1	108.7	106.6
Greater Manchester	2 939	3 501	4 463	5 940	6 975	99.5	95.6	96.8	96.7	92.8
Lancashire	2 573	3 292	4 111	5 379	7 009	87.1	89.9	89.1	87.6	93.2
Merseyside	2 763	3 265	3 919	4 752	5 721	93.5	89.1	85.0	77.3	76.1
North West	2 847	3 460	4 330	5 657	6 854	96.4	94.5	93.9	92.1	91.2
Clwyd	2 226	2 638	3 848	5 521	6 969	75.3	72.0	83.4	89.9	92.7
Dyfed & Powys	2 647	3 080	3 822	5 299	5 848	89.6	84.1	82.9	86.3	77.8
Gwent	2 442	2 972	3 828	5 246	6 424	82.6	81.1	83.0	85.4	85.5
Gwynedd	2 243	2 863	3 480	4 803	6 095	75.9	78.1	75.5	78.2	81.1
Mid Glamorgan	2 246	2 774	3 229	4 476	5 426	76.0	75.7	70.0	72.9	72.2
South Glamorgan	3 028	3 797	5 079	6 377	8 035	102.5	103.7	110.1	103.8	106.9
West Glamorgan	2 783	3 434	3 728	5 378	6 418	94.2	93.7	80.8	87.5	85.4
Wales	2 517	3 071	3 850	5 288	6 419	85.2	83.8	83.5	86.1	85.4
Borders	2 700	3 377	4 032	5 679	6 332	91.4	92.2	87.4	92.4	84.2
Central	3 074	3 802	4 055	5 758	7 094	104.0	103.8	87.9	93.7	94.4
Dumfries and Galloway	2 686	3 564	4 336	5 440	6 529	90.9	97.3	94.0	88.6	86.8
Fife	2 853	3 672	4 350	5 170	6 071	96.5	100.2	94.3	84.1	80.8
Grampian	3 290	4 395	6 010	7 217	9 057	111.3	120.0	130.3	117.5	120.5
Highlands & Islands	2 384	3 127	3 826	5 190	5 923	80.7	85.4	83.0	84.5	78.8
Lothian	3 028	3 839	4 886	6 380	7 667	102.5	104.8	105.9	103.9	102.0
Strathclyde	2 680	3 312	4 139	5 502	6 673	90.7	90.4	89.7	89.6	88.8
Tayside	2 647	3 369	4 215	5 400	6 492	89.6	92.0	91.4	87.9	86.4
Scotland	2 801	3 542	4 431	5 767	6 970	94.8	96.7	96.1	93.9	92.7
Northern Ireland	2 333	2 882	3 645	4 724	5 747	79.0	78.7	79.0	76.9	76.4

5 Gross domestic fixed capital formation by selected industry groups

£ million

	Total of industries shown	Agriculture forestry and fishing	Energy and water supply	Manufacturing	Transport and comm- unication ¹	Dwellings
1988						
United Kingdom	46 766	1 420	6 704	12 281	7 504	18 857
North	2 676	75	735	817	234	814
Yorkshire & Humberside	3 902	122	579	1 268	499	1 434
East Midlands	3 081	110	366	889	418	1 299
East Anglia	1 835	104	131	442	199	960
South East	14 389	144	1 029	3 079	3 499	6 637
South West	3 756	181	360	846	572	1 796
West Midlands	3 760	107	307	1 307	533	1 505
North West	4 346	52	493	1 473	581	1 746
England	37 745	896	4 000	10 121	6 537	16 191
Wales	2 223	119	204	846	235	820
Scotland	3 761	271	525	1 040	554	1 370
Northern Ireland	1 144	134	83	274	178	476
Continental shelf	1 892	-	1 892	-	-	-
1989						
United Kingdom	52 810	1 485	7 960	14 260	9 029	20 076
North	2 974	79	751	903	323	918
Yorkshire & Humberside	4 223	127	567	1 325	610	1 595
East Midlands	3 573	114	443	988	507	1 520
East Anglia	1 944	107	201	497	238	901
South East	15 471	146	1 341	3 486	4 084	6 414
South West	4 389	184	491	861	776	2 076
West Midlands	4 542	111	421	1 610	720	1 681
North West	5 022	54	476	2 021	680	1 791
England	42 139	922	4 692	11 689	7 939	16 896
Wales	2 787	116	288	1 090	283	1 010
Scotland	4 131	290	385	1 198	606	1 651
Northern Ireland	1 237	157	75	286	201	517
Continental shelf	2 518	-	2 518	-	-	-

¹ Excluding sea and air transport

ESTIMATES OF THE DISTRIBUTION OF PERSONAL WEALTH II: MARKETABLE WEALTH AND PENSION RIGHTS OF INDIVIDUALS 1976 TO 1989

I Stewart, Board of Inland Revenue

INTRODUCTION AND SUMMARY

This paper is the second of two papers describing the current methods used by the Inland Revenue to estimate the distribution of personal wealth. The first paper, published in the October 1990 edition of *Economic Trends* (1), described the way in which the distribution of marketable wealth was estimated and also presented a consistent series of estimates for the period 1976 to 1988. This further paper explains the way in which the estimates of wealth are extended to include the value of certain types of non-marketable wealth, mainly the value of accrued occupational and state pension rights. Consistent series of estimates of the distribution of marketable wealth and also personal wealth including pension rights are presented for the years 1976 to 1989.

The estimates in this paper suggest that:

- Over the period 1976 to 1989, there has been little change in the overall distribution of marketable wealth (series C) of individuals as measured by the Gini coefficient, although the share of the top 1 per cent has reduced slightly while that of the upper quartile has increased a little. (Table A).
- Total personal wealth (defined as marketable wealth plus occupational and state pension rights) has increased from around £500 billion in 1976 to around £2600 billion in 1989. Within this total, the percentage share attributable to occupational pensions has increased significantly and the share attributable to state pensions has fallen, with the size of the fall depending on the valuation basis used for state pensions (table G).
- The extension of the definition of wealth to include occupational pension rights (series D) reduces the inequality in distribution of wealth compared with series C. The addition of state pension rights (series E) reduces the inequality further.
- Although there is some indication that marketable wealth plus occupational pension rights (series D) were slightly more equally distributed in the early 1980's than in either the second half of the 1970's or late 1980's, there have been no large changes in the overall distribution of series D wealth (table I).
- The distribution of marketable wealth plus pension rights (series E) has become less equal over the period 1982 to 1989, in part as a result of the diminishing relative importance of wealth in the form of state pension rights (table J). Between 1976 and 1989, the change in distribution of wealth depends on the valuation basis used for state pension rights: on one valuation basis, the distribution of personal wealth in 1989 was less equal than in 1976 whereas on one alternative basis, there is little difference between the distribution of wealth in the two years.

DEFINITIONS OF WEALTH

Much of the Inland Revenue's work on estimating the distribution of personal wealth is based on the general framework of definitions established by the Royal Commission on the Distribution of Income and Wealth (RCDIW) in their Report No.1 (2). These definitions are:

- Series C: marketable wealth which includes all assets for which a value can be immediately realised, net of liabilities
- Series D: marketable wealth plus value of occupational pension rights
- Series E: marketable wealth plus value of occupational and state pension rights.

All three definitions cover the wealth held by all adults in the United Kingdom.

The series C definition of wealth is appropriate where wealth is considered to be a stock of assets which can be realised as cash. On the other hand, if wealth is considered also to include entitlements to a future flow of income, it is appropriate to include wealth in the form of pension rights and the series D and E definitions of wealth are more suitable, although even they are not comprehensive.

The RCDIW included the value of pension rights in their wider definitions of wealth both because of the quantitative importance of wealth of this type and because estimates of the value of these rights could be made. The RCDIW also discussed a number of other types of wealth which could, conceptually, be included in estimates of the distribution of personal wealth. These included the net worth of the company sector, collective wealth of the public sector (eg schools, hospitals and local authority housing), the value of human wealth (eg the value to an individual of the investment in his education and training), contingent rights to forms of income other than the pension rights which are included in series D and E (eg child benefit and income-related benefits) and the value of restricted access to certain assets like subsidised tenancies. The main reason put forward by the RCDIW for excluding these forms of wealth from their estimates of the distribution of wealth was that there were formidable conceptual and practical problems involved in the measurement of the value of such assets and, in some cases, in allocating benefits to individuals. For a fuller explanation of these problems, the reader is referred to paragraphs 222 to 228 of the RCDIW's Report No.1 (2) and paragraphs 34 to 36 of their Report No.5 (3).

For the most part, these problems remain and, with the exception of some work reported in the final section of this article on the effects of including non-marketable tenancy rights in the estimates of the distribution of personal wealth, no attempt has been made by the Inland Revenue to extend estimates of the distribution of

wealth beyond Series E. The resulting definition of personal wealth is therefore somewhat arbitrary since the dividing line between those non-marketable assets which are included in the definition and those which are excluded could be drawn elsewhere, provided sufficiently reliable estimates of the relevant assets were available.

Given the growing importance of personal pensions as a means of making future provision for pensions, consideration is being given to ways in which the value of accrued rights in these new pensions could be estimated and included in estimates of the distribution of personal wealth. The value of endowment assurance investments is already included in the definition of marketable wealth.

DISTRIBUTION OF MARKETABLE WEALTH (Series C)

The methodology used to produce estimates of the distribution of marketable wealth was described in detail in the October 1990 edition of *Economic Trends*(1).

Briefly, the Inland Revenue collects information about the value of estates passing on death and, by applying factors based on inverse mortality rates, derives estimates of the wealth of the living: this is known as the estate multiplier method. This method has a number of limitations but it was considered, by the RCDIW, to be the most appropriate method of estimating the distribution of personal wealth. A number of adjustments have to be made in the course of deriving these estimates: some asset valuations have to be converted to values which are more appropriate to the wealth of the living; as no information is available on holdings of some jointly-owned property which would pass on death to the surviving joint owner, this data has to be imputed using limited data available from other sources; similarly, imputations are required for property held in some trusts and for the holdings of the smallest estates which do not require a grant of representation when passing on death.

Revised estimates of the distribution of marketable wealth for the years 1976 to 1988 were published in the previous article. The percentages of wealth owned by the wealthiest 1, 2, 5, 10, 25 and 50 per cent of the adult population in each year were shown, together with an estimate of the Gini coefficient. The Gini coefficient provides a measure of the degree of inequality in the overall distribution of wealth: as its value increases towards 100 per cent, the degree of inequality increases; as its value reduces towards zero, the degree of inequality reduces. The previously published estimates for 1987 and 1988 were provisional and revised figures for these years, along with a first provisional estimate for 1989, are shown in Table A below.

The latest estimates for 1987 are similar to the provisional figures published last year. The Gini coefficient is unchanged at 66 per cent and there are only small changes in the estimates of the proportion of wealth held by various percentile groups of the population. Provisional estimates for 1988 and 1989 show a Gini coefficient of 67 per cent, one percentage point higher than for 1987. This small change in the Gini coefficient since 1987 is not considered to be statistically significant, particularly as the estimates for these two years are provisional and subject to amendment when more data on deaths in 1988 and 1989 are available. The latest estimates do not, therefore, lead to any change in the conclusion reached last year that, since 1976, there has been little change in the overall distribution of marketable wealth of individuals as measured by the Gini coefficient, although the share of the top 1 per cent has reduced slightly while that of the upper quartile has increased a little.

VALUATION OF ACCRUED PENSION RIGHTS

Membership of an occupational pension scheme entitles an individual to a future flow of income and a lump sum payment on retirement. The value of accrued occupational pension rights can be estimated as the capitalised value of the future flows of income and capital. Similarly, individuals have rights to state pensions

TABLE A
Distribution of Marketable Wealth (Series C)
Adult Population of UK

	Percentages													
Concentration of wealth among adult population	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988 ¹	1989 ¹
Percentage owned by:														
most wealthy														
1 per cent	21	22	20	20	19	18	18	20	18	18	18	18	17	18
2 per cent	27	28	26	26	25	24	24	26	24	24	24	25	24	25
5 per cent	38	39	37	37	36	36	36	37	35	36	36	37	38	38
10 per cent	50	50	49	50	50	50	49	50	48	49	50	51	53	53
25 per cent	71	71	71	72	73	73	72	73	71	73	73	74	76	75
50 per cent	92	92	92	92	91	92	91	91	91	91	90	91	93	94
Distribution of adult population by individual net wealth														
Percentage of population with (£)														
0- 5,000	60.1	57.1	52.3	51.8	48.9	48.8	46.3	44.4	41.0	43.0	40.2	33.2	31.0	31.8
5,001- 15,000	30.2	31.4	31.0	29.8	27.7	25.5	25.0	24.0	22.8	18.9	20.9	26.6	26.5	20.9
15,001- 50,000	8.6	10.1	14.9	16.0	20.2	21.9	24.2	26.2	29.6	30.0	29.1	28.5	27.3	31.0
50,001-100,000	0.8	1.0	1.3	1.6	2.3	2.9	3.3	3.8	4.9	5.6	7.0	7.8	7.9	8.9
100,001 and over	0.4	0.4	0.6	0.7	0.9	1.1	1.2	1.6	1.7	2.6	2.8	3.8	7.3	7.3
Total adult population (thousands)	40,496	40,642	40,824	41,107	41,356	41,868	41,937	42,425	42,765	43,054	43,322	43,433	43,822	44,080
Gini Coefficient (Series C)	66	66	64	65	65	65	64	65	64	65	64	66	67	67

¹provisional

on retirement and the value of accrued state pension rights can also be derived by capitalising expected future income flows. In both cases, the valuations take account of contributions (including notional contributions) made so far and do not include that part of future income which will be funded by contributions yet to be made. The estimates of the value of occupational and state pension rights are provided by the Government Actuary's Department (GAD).

Estimating the present value of future pension entitlements is inevitably subjective and somewhat arbitrary. The discount rates used to capitalise future income flows correspond to the difference between expected interest yields on investment income (including capital appreciation) and expected increases in future pension payments. Both will ultimately depend on how well the economy as a whole performs in the medium to long-term and this is inherently uncertain. The selection of a suitable discount rate therefore entails a certain degree of subjectivity both in respect of future interest yields and future pension payments. Any increase in the discount rate reflecting improved prospects for investment returns which is not accompanied by a rise in pension payments will lead to a reduction in the value of capitalised future pension payments.

Occupational pension rights

The estimates of the value of occupational pension rights which GAD prepare are based on data which are available on the number of individuals in occupational pension schemes, analysed by age and sex, and the amounts of occupational pensions being paid at present and expected to be paid in the future. For each employee in an occupational pension scheme, the discounted value of future pension payments is estimated based on assumptions about the life expectancy of the individual, the probability of withdrawing from the pension scheme voluntarily before retirement and the future relationship between interest yields on investment income and rates of increase in both earnings and pension payments. For individuals currently in receipt of occupational pensions, a similar calculation is required - the main differences are that assumptions about the future path of earnings or voluntary withdrawal from the pension scheme are not required.

There have been a number of changes in availability of data and assumptions over the years.

a. The 1975 and 1976 estimates of the occupational pension rights of employees which GAD provided to the RCDIW, were valued on the assumption that the interest yields on investment income (including capital appreciation) would on average exceed increases in earnings by 1 per cent a year. But in recent years, actuaries have, when valuing pension scheme liabilities, generally assumed a future return on investments at a rather higher rate than this. GAD's estimates for the years 1987 and onwards are therefore based on a discount rate of 1½ per cent a year.

b. Similarly the basis for the valuation of pensions in payment (both currently and in the future) has also changed over the years, although in this case changes have been made more frequently because it has been necessary to take into account both the yield on investments and the established practice of schemes with regard to the cost of living increases.

c. In addition to periodic changes in the assumptions relating to investments, prices and earnings, from time to time it has been possible to review the assumptions made about the nature and extent of the accrued pension benefits, following the surveys of occupational pension schemes by the Government Actuary: the latest survey relates to 1987 (4). This type of adjustment has often been of greater consequence than the effect of changes in the interest yield assumptions, where for instance, if the net yield assumption for 1987 had still been 1 per cent rather than 1½ per cent, the wealth estimate would have been increased by only £30 billion, ie by about 7 per cent.

The European Court of Justice ruled on 17 May 1990 that benefits from occupational pension schemes are pay under Article 119 of the Treaty of Rome and that men and women must receive equal treatment. The implications of this judgement on accrued occupational pension rights are at present unclear and the figures presented in this paper take no account of any changes which may result from this judgement.

Estimates of the value of occupational pension rights and of the series D distribution of wealth have, since 1980, been published in the annual volumes of Inland Revenue Statistics (5). The estimates presented in each of these volumes have reflected the latest estimates available at that time of the value of occupational pension rights provided by GAD, but there was no attempt to make systematic revisions to figures for earlier years to take account of the changes in assumptions described above. The estimated values of pension rights for all years from 1976 have now been reviewed by GAD and discontinuities due to changes in assumptions and underlying data have been removed. In revising the series, GAD have smoothed out the series as if changes in the economic basis and in the use made of data sources had taken place in smaller, annual steps. In making the adjustments, GAD have particularly had regard to the relationships between (i) the accrued rights of those in employment with the wages and salaries of all employees shown in the national accounts and (ii) the value of the pension rights of pensioners as compared with the annual amount of pensions being paid as shown in the surveys of

TABLE B

Estimated value of accrued rights in occupational pension schemes : United Kingdom

Year	Employees' accrued rights in current schemes	Preserved pensions	Current pensioners' rights	fbillion Total value of occupational pension rights
1976	37	-	13	50
1977	49	-	16	65
1978	71	-	19	90
1979	97	-	23	120
1980	122	-	28	150
1981	144	-	36	180
1982	165	-	50	215
1983	182	5	68	255
1984	196	10	89	295
1985	202	15	113	330
1986	205	20	135	360
1987	213	24	163	400
1988	230	30	180	440

Source : Government Actuary's Department

occupational schemes. No alterations have been made to the estimates given to the RCDIW for 1976, nor for the latest year for which figures have previously been published (1987). The estimates provided by GAD for 1976 to 1988, broken down between employees' accrued rights in current schemes, rights in preserved pensions and current pensioners' rights are shown in Table B.

The ratio between employees' pension rights and total wages and salaries (including pay in cash of HM forces) and the ratio between current pensioners' rights and total occupational pensions paid each year are shown in Table C.

TABLE C

Year	Ratio of employees' accrued rights in current schemes to total wages and salaries (including HM forces)	Ratio of current pensioners' rights to annual amounts of occupational pensions paid
1976	0.55	6.3
1977	0.66	6.5
1978	0.84	6.6
1979	0.98	6.6
1980	1.04	6.7
1981	1.15	7.1
1982	1.23	8.2
1983	1.27	9.4
1984	1.28	10.3
1985	1.22	11.3
1986	1.14	11.7
1987	1.09	12.3
1988	1.06	12.0

Source: Pension rights from Table B

Total wages and salaries 1980-1988: table 4.9 of 1991 Blue Book

1976-1979: previous Blue Books

Pensions paid: Government Actuary's Department

The ratios in this table indicate that, over the period 1976 to 1988, the accrued rights of employees in respect of their current employment have risen from being equivalent to about half a year's employment income to over a whole year's income. The proportion of employees in schemes has changed little, but the quality of the benefits provided, particularly in the private sector, has improved. On the other hand, in recent years the prospects for investment returns have improved and, in combination with other factors, this has meant that the pension wealth for employees in the past few years has, if anything, declined relative to annual incomes. Other features, such as the increase in the numbers of

part-time employees and employees not in pension schemes, also affect this comparison. Also relevant is the switch from large enterprises to smaller businesses and from manufacturing to service industries.

Changes in the ratio of wealth represented by the pension rights of pensioners to the annual amount of pensions in payment are also significant. Broadly, this represents the number of years of pension payments which should be held in a funded pension scheme. This is affected by the age of the pensioners, the expected real return on fund assets relative to future pension payments and the amount of any spouse's pension payable on the death of the pensioner. In the 1970s there were relatively few new occupational pensioners and pensions in payment were not generally increased outside the public sector, despite rising inflation. In the 1980s the average age of pensioners fell (mainly due to earlier retirement), pension increases and widow's pensions both became more general and so the value of pensioners' rights increased markedly.

The wealth represented by preserved pensions (ie in respect of a former period of employment) was negligible in the 1970s, but with the new legal requirements it has recently become an important part of occupational pension wealth.

The estimated value of occupational pension rights in each year is analysed by age range and by sex for use in the estimates of the distribution of personal wealth (series D). The breakdown for the latest year for which figures are available from GAD is shown in Table D.

It should be noted that the estimates of the value of accrued occupational pension rights are based on a number of assumptions and on data which is far from ideal. The estimates are therefore fairly tentative.

State pension rights

Estimates of the value of accrued state pension rights have been provided by GAD for all years from 1979 to 1989. (Estimates for 1975 and 1976 had previously been provided to the RCDIW). Separate figures are available for basic state pension (including widow's pension) rights and for rights earned under the State Earnings Related Pension Scheme (SERPS), analysed by age range and sex. Estimates of state pension rights provided by GAD relate to Great Britain only and the figures have been scaled up, within sex and age range cells, to United Kingdom levels for the estimates of distribution of personal wealth.

TABLE D

Numbers of persons with occupational pension rights in 1988, the estimated value of the accrued rights and average accrued rights: United Kingdom

Age Ranges	Numbers: millions			Amounts: £billion			Average £		
	Males			Females			Total		
	Number	Amount	Average	Number	Amount	Average	Number	Amount	Average
Under 24	0.75	1.1	1,500	0.78	0.9	1,200	1.53	2.0	1,300
25-34	2.03	13.4	6,600	1.36	4.7	3,500	3.38	18.1	5,400
35-44	2.77	57.9	20,900	1.36	13.3	9,800	4.14	71.3	17,200
45-54	2.35	82.1	34,900	1.30	26.1	20,100	3.64	108.1	29,700
55-64	2.39	109.6	45,900	1.15	32.8	28,500	3.54	142.4	40,200
65-74	1.55	55.6	35,900	1.01	22.0	21,800	2.56	77.5	30,300
75-84	0.66	13.5	20,500	0.54	6.6	12,200	1.20	20.1	16,800
85 & over	0.10	1.2	12,000	0.15	0.9	6,000	0.25	2.1	8,400
Totals	12.6	334.4	26,500	7.65	107.3	14,000	20.24	441.6	21,800

Source: Government Actuary's Department

The valuation of accrued state pension rights is carried out in a similar way to the valuation of occupational pension rights. Information is available to GAD about the age, sex and marital status breakdown of the population and also about participation in the SERPS scheme. Assumptions are then made about life expectancy and the discount rate to be used to capitalise future pension payments. Using these assumptions, the discounted value of future state pension payments for which contributions have been made, can be estimated.

Due, primarily, to changes in state pension legislation, there have been a number of changes in some of the assumptions used over the years when estimating the value of state pension rights:

a. When the first set of estimates of the value of state pension rights in 1975 and 1976 was produced for RCDIW, a discount rate of 1 per cent was used. This was the expected difference between interest yields on investment income and increases in earnings and corresponded to the expectation that basic state pensions would continue to be uprated in line with earnings. Under the Social Security Act 1980, state pensions are now effectively uprated in line with prices and the estimates of state pension rights for 1981 onwards which have previously been published in Inland Revenue Statistics (5) have been based on a 2½ per cent discount rate: this was the expected difference between interest yields on investment income and general price inflation. The use of a 1 per cent discount rate for years up to 1980 and a 2½ per cent discount rate for later years implicitly assumed that the uprating policy for state pensions would remain unchanged from the policy in the year for which the valuation is being estimated. It is obviously difficult to judge whether such a policy would in practice have been sustained for the lifetime of each adult currently alive. Whatever assumption used is thus inevitably somewhat stylised and arbitrary.

b. GAD's current view of the appropriate discount rate for basic state pensions is now 3 per cent but this rate was not used for any of the wealth estimates published in the 1990 or earlier editions of Inland Revenue Statistics (5).

c. A number of changes were made to SERPS in the Social Security Act 1986. From April 2000 onwards, widows will inherit 50 per cent of their husbands' entitlement instead of 100 per cent. As women live longer than men (on average) and tend to marry men older than themselves, inherited SERPS rights are an important component of the total. Although the change applies only from the year 2000, it reduces the value of rights accrued to date as these represent the discounted value of future payments of pension based on contributions paid to date. In addition, a phased reduction in the accrual rate for SERPS from 25 per cent of average earnings to 20 per cent was introduced for post-1988 accruals and the "best 20 years" rule (whereby the Additional Pension paid was based on an individual's best 20 years of earnings, after they have been revalued) was replaced by the earnings over the whole working life of an individual: these changes did not reduce the value of rights already earned in respect of the main SERPS pension itself since past accruals were preserved at their original level.

There are a number of ways in which these changes in legislation and views about future investment returns and future state pension uprating policy could be taken into account in estimating the value of state pension rights. Two of the main options are considered further here. One option is to assume no future changes to state pension policy: this is referred to here as the "historic valuation". Thus, estimates of state pension rights in 1976 would be based on the legislation as it stood in 1976 and a 1 per cent discount rate, representing revalorisation of state pensions in line with earnings, would be used. A second option is to value the rights in all years taking account of latest information about pension legislation and the latest expectations on investment returns: this is referred to here as the "latest valuation". The rights for 1976 would then reflect actual levels of state pensions from 1976 to the present, future uprating in line with the Social Security Act 1980 and SERPS rights based on the rules in the Social Security Act 1986. Other valuation bases could be adopted to take account of alternative views on future changes in state pension policy but these are not pursued further here.

TABLE E
Estimated value of accrued state pension rights : Great Britain

£billion

Year	Value on latest valuations			Value on historic valuations			Difference between historic and latest valuations		
	Basic Pension	Serps	Total	Basic Pension	Serps	Total	Basic Pension	Serps	Total
1976	138.1	-	138.1	185.9	-	185.9	47.8	-	47.8
1977	145.6	-	145.6	197.8	-	197.8	52.2	-	52.2
1978	164.5	-	164.5	223.6	-	223.6	59.1	-	59.1
1979	189.1	5.6	194.7	256.9	8.9	265.8	67.8	3.3	71.1
1980	228.2	12.3	240.5	310.0	19.4	329.4	81.8	7.1	88.9
1981	263.9	19.5	283.4	283.4	26.5	309.9	19.5	7.0	26.5
1982	288.0	26.8	314.8	309.1	36.3	345.4	21.1	9.5	30.6
1983	320.0	35.0	355.0	343.5	47.4	390.9	23.5	12.4	35.9
1984	346.8	43.8	390.6	373.0	59.5	432.5	26.2	15.7	41.9
1985	365.2	53.5	418.7	392.5	72.9	465.4	27.3	19.4	46.7
1986	391.1	65.7	456.8	420.7	89.2	509.9	29.6	23.5	53.1
1987	421.8	78.8	500.6	421.8	78.8	500.6	0.0	0.0	0.0
1988	440.9	91.7	532.6	440.9	91.7	532.6	0.0	0.0	0.0
1989	468.9	104.3	573.2	468.9	104.3	573.2	0.0	0.0	0.0

Source: 1979-1989 : Government Actuary's Department

1976-1978 : Inland Revenue estimates based on 1979 valuations and changes in single person's basic pension

GAD have provided estimates for all years 1979 to 1989 on both the historic and latest valuation. The historic valuation estimates which are available take account of the change in pension uprating after 1980, the 1986 changes to the widows' inheritance basis for SERPS and changes in views about future investment returns. Estimates for 1976 to 1978 have been derived by deflating the 1979 estimates in line with changes in a single person's basic pension.

The estimated value of state pension rights, with valuations based on both the latest and historic valuations, are shown in table E. These estimates relate to Great Britain only.

For the years 1976 to 1980, the historic valuation gives estimates which are more than one third higher than the latest valuation estimates: all of this difference reflects the lower discount rate of 1 per cent used for these years in the historic valuation corresponding to the assumption of a policy of uprating state pensions in line with earnings in all years compared to the 3 per cent discount rate used in the latest valuation corresponding to price uprating of state pensions and latest views on interest yields. From 1981 to 1986, the historic valuation of basic pension rights is about 7 to 8 per cent higher than the latest valuation reflecting the difference between the 2½ per cent discount rate used for the historic valuation and the 3 per cent discount rate used for the latest valuation: this difference reflects changes in view about future interest yields. The valuation of SERPS rights is over a third higher on the historic valuation mainly due to the reductions in the value of future widows' inherited SERPS rights as a result of the changes in the 1986 Social Security Act.

All of the estimates of state pension rights provided by GAD have been analysed by sex and age range. The detailed breakdown for 1989 is shown in table F.

TABLE F
Distribution of State Pension Rights in 1989 :
Great Britain £billion

Age range	Basic pension rights	SERPS rights	Total rights
MALES			
under 24	2.2	.9	3.1
25-34	9.1	6.2	15.3
35-44	19.8	11.4	31.2
45-54	31.0	14.5	45.5
55-64	53.1	15.9	69.0
65-74	48.7	5.4	54.1
75-84	15.5	.0	15.5
85 & over	1.7	.0	1.7
Total	181.1	54.3	235.4
FEMALES			
under 24	4.0	2.2	6.2
25-34	16.7	9.5	26.2
35-44	34.9	11.1	46.0
45-54	51.8	12.6	64.4
55-64	79.1	13.0	92.1
65-74	64.1	1.6	65.7
75-84	31.1	.0	31.1
85 & over	6.1	.0	6.1
Total	287.8	50.0	337.8
ALL ADULTS			
Total	468.9	104.3	573.2

Source: Government Actuary's Department

Total state pension rights of the adult population of Great Britain are estimated at £573 billion in 1989, of which £235 billion (41 per cent) is attributable to males. SERPS rights are valued at £104 billion in total with just over half of these rights belonging to males. The basic pension rights for females are significantly higher than for males mainly reflecting the younger pension age and the longer life expectancy of women.

Composition of Personal Wealth

Table G provides estimates of total personal wealth, defined to be the sum of marketable wealth, occupational and state pension rights over the period 1976 to 1989, together with the percentage of personal wealth attributable to each of the three constituent types of wealth. The table includes estimates based on both the historic valuation and latest valuation of state pension rights.

TABLE G
Composition of personal wealth

A: With historic valuation of state pension rights

Year	Personal wealth ⁽¹⁾ £ billion	Percentage of personal wealth attributable to:		
		Marketable wealth	Occupational pension rights	State pension rights ⁽²⁾
1976	521	54%	10%	37%
1977	598	55%	11%	34%
1978	698	54%	13%	33%
1979	829	53%	14%	33%
1980	1010	52%	15%	33%
1981	1063	53%	17%	30%
1982	1187	52%	18%	30%
1983	1365	52%	19%	29%
1984	1513	51%	19%	29%
1985	1676	52%	20%	28%
1986	1838	52%	20%	28%
1987	2080	56%	19%	25%
1988	2331	58%	19%	23%
1989	2648	60%	18%	22%

B: With latest valuation of state pension rights

Year	Personal wealth ⁽¹⁾ £ billion	Percentage of personal wealth attributable to:		
		Marketable wealth	Occupational pension rights	State pension rights ⁽³⁾
1976	472	59%	11%	30%
1977	544	61%	12%	27%
1978	637	59%	14%	27%
1979	756	58%	16%	26%
1980	919	57%	16%	27%
1981	1036	55%	17%	28%
1982	1156	53%	19%	28%
1983	1328	53%	19%	27%
1984	1470	53%	20%	27%
1985	1628	53%	20%	26%
1986	1784	54%	20%	26%
1987	2080	56%	19%	25%
1988	2331	58%	19%	23%
1989	2648	60%	18%	22%

(1) Personal wealth is defined to be marketable wealth plus occupational pension rights plus state pension rights

(2) Historic valuation

(3) Latest valuation

Part A of the table indicates that, if state pension rights are valued on a historic valuation:

- the contribution of marketable wealth showed a small decline from the late 1970's to the mid 1980's but, from

1987, there has been substantial growth in the share of personal wealth attributable to marketable wealth

- occupational pension rights grew steadily in importance until the mid 1980's and the share of personal wealth attributed to these rights in 1986 was about double the share in 1976; there has been some modest falling back in the contribution from occupational pension rights from 1987
- state pension rights have declined in relative importance over the period with step changes between 1980 and 1981 and between 1986 and 1987 reflecting the changes in state pension legislation described above.

If state pension rights are valued on a latest valuation as in part B of the table:

- the share of personal wealth attributable to marketable wealth has fallen more sharply between the late 1970's and mid-1980's but, by the late 1980's, the share attributable to marketable wealth has returned to the levels of the late 1970's
- the share attributable to occupational pension rights followed a similar profile as in part A of the table
- the share attributable to state pension rights has fallen more gradually over the period: this fall reflects the real growth in asset prices and earnings, which have boosted the shares attributable to marketable wealth and occupational pension rights respectively.

ALLOCATION OF PENSION RIGHTS

To estimate the series D and E distributions of wealth, it is necessary to add the occupational and state pension rights to marketable wealth for each of the sample of individuals used in constructing the series C estimates. While information is available from GAD on the distribution of pension rights by age and sex, little information is available from any source about the relationship between the levels of marketable wealth and pension rights. It has therefore been necessary to adopt certain stylised assumptions when allocating these pension rights.

Occupational Pension Rights

Estimates of the series D distribution of personal wealth which have previously been published in Inland Revenue Statistics (5) have been based on two methods for the allocation of occupational pension rights within sex and age groups. The first method allocated pension rights evenly within age range and sex groups. The second method reflected the view that there was a correlation between the value of an individual's pension rights and the amount of marketable wealth he or she held: as an extreme assumption, individuals with rights to occupational pensions were assumed to be the wealthiest individuals in terms of marketable wealth within their age group and the higher their marketable wealth, the higher their pension rights. Estimates were published for both of these two extreme assumptions.

A number of changes have now been made to the method of allocation of occupational pension rights. The new allocation attempts to provide a single best approximation to the actual distribution of pension rights rather than providing two extreme figures. This new allocation makes use of the three groupings of

the UK population which are used in deriving the estimates of the distribution of marketable wealth. These are

- identified population: all adults for whom a grant of representation would be obtained on death
- excluded joint property owners: all adults with a jointly owned dwelling for whom a grant of representation would not be obtained on death
- small estate owners: all adults for whom no grant of representation would be obtained on death and who do not have a jointly owned dwelling.

The article on the distribution of marketable wealth in the October 1990 edition of *Economic Trends* (1) provides further details of these groupings, and numbers of people and marketable wealth in each grouping.

It is assumed that the excluded joint property owners group will have occupational pension rights which are on average similar to those of the population as a whole (within age and sex groups).

For the identified population, it seems reasonable to assume higher average accrued pension rights than the population as a whole and that small estate owners will have lower pension rights. As there is clearly a close relationship between earnings and pension rights, the average amounts within each age and sex group for the identified population and small estates have been adjusted so that the ratio of average identified wealth owners' pension rights to average small estate owners' pension rights is equal to the ratio of the upper to lower quartiles of earnings of non-manual workers.

Within the identified wealth owners' group, it has been assumed that, in any given age range, those with more wealth will have higher pension rights although it is not possible to establish the precise nature of the relationship. The identified population is therefore split into two groups: the wealthiest 15 per cent which corresponds broadly to those with more wealth than the excluded joint property owners and the remainder whose wealth is in the same range as the excluded joint property owners. The average occupational pension rights for those in the identified population whose wealth is in the same range as the excluded joint property owners are assumed to be about the same, on average, as the level of pension rights of the joint property owners.

For the wealthier sub-group of the identified population, average pension rights are assumed to be about 33 per cent higher than the rights of the excluded joint property population: this ratio corresponds broadly to the ratio of the upper quartile to median earnings of non-manual workers. Sensitivity analyses on this assumption show that, if the same level of pension rights were allocated throughout the identified population within age range and sex band, the series D Gini coefficient would be reduced by only 0.2 percentage points.

The proportions of the population within age and sex groups are calculated from the numbers supplied by GAD. These proportions are assumed to be appropriate to the excluded joint property owners, but higher proportions are assumed for the identified population and lower proportions for small estates.

The assumption used is that the proportions of the identified population with occupational pension rights is 10 per cent higher than for the population as a whole within age and sex groups. This assumption has been checked for men of working age against General Household Survey tables showing membership of

employer's pension scheme by sex and socio-economic group. Table 7.11 of the 1987 GHS report (6) shows that 62 per cent of male full-time employees aged 16 or over are in occupational pension schemes whereas the proportion for male non-manual full-time employees aged 16 or over is 73 per cent. The incidence for male non-manual employees is therefore around 18 per cent greater than for all male employees. A lower differential of 10 per cent between the incidence of occupational pensions for males of working age in the identified population to that of all males of working age has been used since the identified population will include a significant proportion of non-manual employees and also some manual employees. Checking for the older age groups and women is less straightforward and the same increase in proportions has been adopted for the identified population as a whole. The proportions with pensions for the small estate owners have been reduced accordingly.

There is a certain degree of arbitrariness about some of these assumptions, as there is about some of the assumptions used in constructing the estimates of series C marketable wealth described in last year's article (1). However, the sensitivity analyses above show that the Gini coefficient is fairly robust to these assumptions and, as the assumptions are applied in the same way for each year, any errors in the assumptions are unlikely to have a significant impact on trends in the estimated distribution of wealth.

State Pension Rights

The method of allocation of state pension rights to individuals is unchanged from the method used previously.

The average basic pension rights of males and females are derived from the GAD figures and all males are allocated the average value of rights relevant to their age group. The basic pension rights for females under 60 are divided into the amounts attributable to basic pension and to widows' pension. The division is based on proportions derived by the RCDIW. The proportions used are in table H.

All females in the relevant age group are allocated the average amount of basic pension rights and all married and widowed women are also allocated the average value of rights in widows' pensions. This method of allocation of male and female basic pension rights is, to some extent, an over-simplification since it does not take account of the variation in contribution records due to the lack of this information on the wealth database.

TABLE H
Proportion of Basic Pension Rights for Females
Allocated to Widows' Pension

Age range	Proportion
Under 24	30%
25-34	50%
35-44	40%
45-54	20%
55-64	10%
65-74	-
75-84	-
85 and over	-

SERPS rights are allocated to individuals who do not have occupational pension rights. GAD have suggested that virtually all of those in the younger age groups (up to 54) without occupational pension rights will have SERPS entitlements and that about 95 per cent of those between 55 and 65 and 85 per cent of the 65 to 74 age group with no occupational rights will have rights under SERPS. From information provided by GAD on the incidence of individuals with occupational pension rights and these further assumptions, the average value of SERPS rights can be estimated for each individual in SERPS within each sex and age group. These averages are then allocated to the relevant proportion of people without occupational pensions.

This method of allocation does not take account of the fact that some individuals with occupational pension rights will also have SERPS rights. For example, on changing jobs, an employee may preserve his rights in the occupational pension scheme of the company which he leaves and may join the SERPS scheme if his new employer has no occupational pension scheme. As it has not been possible to separate the SERPS rights between those with and those without occupational pension rights, no attempt has been made to allocate SERPS rights to individuals with occupational pension rights.

DISTRIBUTION OF MARKETABLE WEALTH PLUS OCCUPATIONAL PENSION RIGHTS (SERIES D)

Estimates of the series D distribution of personal wealth for all years 1976 to 1989 are shown in table I.

TABLE I
Distribution of Personal Wealth (Series D)
Adult Population of UK

	Percentages													
Concentration of wealth among adult population	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988 ¹	1989 ¹
Percentage owned by:														
most wealthy														
1 per cent	18	19	17	16	15	14	14	15	14	14	14	14	13	14
2 per cent	24	24	23	21	20	20	19	20	19	19	19	20	19	20
5 per cent	34	34	33	32	31	30	30	31	29	31	30	31	31	32
10 per cent	45	45	45	44	43	42	42	43	42	43	43	44	45	46
25 per cent	67	67	67	67	67	65	65	67	66	67	67	68	69	69
50 per cent	89	89	88	88	87	86	86	88	88	88	88	88	89	90
Gini Coefficient	60	60	59	58	57	56	56	58	57	58	58	60	60	60

¹provisional

From 1976 to 1982, there was a gradual reduction in the Gini coefficient for series D which indicates that the distribution of the series D definition of wealth became slightly more equal. After 1982, the distribution of the series D definition of wealth has tended to become slightly less equal and, in the late 1980's, the overall distribution of this definition of wealth, as measured by the Gini coefficient, is at the same level as in 1976 and 1977. But the differences in the Gini coefficient are small and some of the year-on-year differences may be due to estimation error. The broad conclusion therefore is that, although there is some indication that series D wealth was slightly more equally distributed in the early 1980's than in either the second half of the 1970's or late 1980's, there have been no large changes in the distribution of series D wealth.

The Gini coefficients for series D are typically 6 to 8 percentage points lower than those for series C shown in table A. In other words, marketable wealth plus occupational pension rights are more equally distributed than marketable wealth alone.

DISTRIBUTION OF MARKETABLE WEALTH PLUS OCCUPATIONAL AND STATE PENSION RIGHTS (SERIES E)

Table J shows the estimates of the series E distribution of personal wealth over the period 1976 to 1989. The first part of this table uses state pension rights based on the historic valuation (as described in the section on the valuation of state pension rights) and the second part uses latest valuations.

TABLE J
Distribution of Personal Wealth (Series E) Historic
Adult Population of UK

State pensions valued on historic valuation

Concentration of wealth among adult population		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988 ¹	1989 ¹
Percentage owned by:															
most wealthy	1 per cent	12	13	12	11	10	10	10	11	10	10	10	11	10	11
	2 per cent	16	17	16	15	14	14	14	14	14	15	14	16	15	16
	5 per cent	24	25	24	23	23	23	23	24	23	24	23	25	26	26
	10 per cent	34	34	34	34	33	33	33	33	33	35	34	36	38	38
	25 per cent	54	54	55	55	54	55	55	56	56	57	57	59	60	62
	50 per cent	78	77	78	78	77	78	78	80	80	80	81	81	83	83
Gini coefficient		44	44	44	44	42	44	44	46	46	47	47	50	50	50

Distribution of Personal Wealth (Series E) Latest

Adult Population of UK

State Pensions valued on latest valuation

Concentration of wealth among adult population		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988 ¹	1989 ¹
Percentage owned by:															
most wealthy	1 per cent	13	14	13	12	11	11	11	11	10	11	10	11	10	11
	2 per cent	18	18	17	16	16	15	15	15	15	15	15	16	15	16
	5 per cent	26	27	26	25	24	24	24	24	23	25	24	25	26	26
	10 per cent	36	36	37	36	35	34	34	35	34	36	35	36	38	38
	25 per cent	57	57	57	58	57	56	56	57	57	58	58	59	60	62
	50 per cent	80	80	80	80	79	79	79	80	81	81	82	81	83	83
Gini coefficient		48	48	47	47	46	45	45	47	47	48	48	50	50	50

¹ provisional

The extension of personal wealth to include state pension rights leads to a more equal distribution of wealth compared with series D wealth. It follows that, as the value of state pension rights on the historic valuation is greater, up to 1986, than on the latest valuation, personal wealth using the historic valuation will be more evenly distributed in those years than on the latest valuation. This can be illustrated by comparing the Gini coefficients in table J: for 1976 to 1980 when historic valuations are about one-third greater than latest valuations, the Gini coefficient on the historic valuation is 3 to 4 percentage points lower than on the latest valuation; for 1981 to 1986 where the differential in valuations falls to 7 to 8 percent, the difference between the respective Gini coefficients falls to 1 percentage point.

Over the period 1976 to 1989, personal wealth with state pensions valued on a historic valuation has become less equally distributed. The Gini coefficient was relatively stable in the period 1976 to 1982 but, after 1982, there was a gradual increase in the inequality of the distribution of wealth. A different pattern emerges when the latest valuation is used to value state pension rights. From 1976 to 1982, there are some modest falls in the Gini coefficient indicating a move towards greater equality in the distribution of wealth, although these small changes may not be significant due to the scope for estimation errors. From 1982 to 1989, the Gini coefficient for series E wealth using the latest valuation shows a similar profile to that based on the historic valuation of state pension rights.

The different trends between 1976 and 1982 in the two sets of series E Gini coefficients is largely explained by the switch, in

the historical valuation, from the assumption of earnings uprating for state pensions in years to 1980 to the assumption of price uprating from 1981.

The reduction in the equality of the distribution of personal wealth including pension rights on both valuation bases over the 1980's is in contrast to the distribution of marketable wealth in table A which has shown little change over this period. The difference in trends is thought to be largely due to the real growth in asset prices during the 1980's: while the real value of basic state pensions has been preserved, state pensions have become relatively less important and, as the inclusion of state pensions reduces the inequality in the distribution of wealth, their relative decline has led to some increase in the inequality of the distribution of personal wealth including pension rights.

It has not been possible to value occupational pension rights on the equivalent of both a historic and latest valuation basis. The effect of changes in the established practice of pension schemes with regard to cost of living increases has, as mentioned earlier, been gradually phased in over the period, together with the increase from 1 per cent to 1½ per cent in the discount rate used to capitalise future pension payments. It can be noted that the impact of the change in discount rate is relatively small: if a 1 per cent discount rate had been used to value occupational pension rights for 1987 rather than 1½ per cent, the series D Gini coefficient would have been reduced by only 0.2 percentage points.

COMPARISON WITH PREVIOUSLY PUBLISHED ESTIMATES OF THE DISTRIBUTION OF WEALTH (SERIES D AND E)

The previously published estimates of the Gini coefficient for series D and E showed upper and lower variants corresponding to the two extreme assumptions used for the allocation of occupational pension rights. As discussed above, a single best approximation for the allocation has now been used. Table K below therefore compares the estimated Gini coefficients from tables I and J with both the upper and lower variants for series D and E which were published in Inland Revenue Statistics 1990.

TABLE K
Comparison of Gini coefficients for series D and E
with previously published estimates

	percentages					
	1976	1981	1985	1986	1987	1988
Series D						
Latest estimate	60	56	58	58	60	60
Previous estimates						
lower variant	59	56	56	56	57	57
upper variant	65	62	62	62	63	63
Series E						
Latest estimate (historic valuation)	44	44	47	47	50	50
Latest estimate (latest valuation)	48	45	48	48	50	50
Previous estimates						
lower variant	44	42	46	46	48	47
upper variant	49	47	51	51	53	52

The latest estimates of the Gini coefficients for series D in 1985 to 1988 are close to the average of the previously published estimates of Gini coefficients for upper and lower variants but, for 1976 and 1981, the latest estimate is either equal to or close to the previously published lower variant. For series E, the latest estimates of the Gini coefficients lie in the range of the previously published lower and upper variants.

DISTRIBUTION OF PERSONAL WEALTH INCLUDING NON-MARKETABLE TENANCY RIGHTS

In the earlier section of this paper on definitions of wealth, it was pointed out that the RCDIW had discussed the inclusion of various types of non-marketable wealth in estimates of personal wealth but that, due largely to estimation problems, the RCDIW had included only the accrued value of occupational and state pension rights in their extended definition of personal wealth. In recent years, the Central Statistical Office (CSO) has included estimates of the value of non-marketable tenancy rights in the personal sector balance sheets and some preliminary estimates have been made of the distribution of personal wealth including pension rights and non-marketable tenancy rights. The methodology adopted for these estimates and the results are given below. The CSO balance sheet estimates used in this section, and in constructing the series C marketable wealth for recent years shown in table A, were published in the February 1991 edition of Financial Statistics (7).

Methodology for estimation and allocation of value of non-marketable tenancy rights

The CSO's estimate of non-marketable tenancy rights covers the rights of sitting tenants of both public sector and private sector dwellings to occupation at a "fair rent" under the Rents Acts. The value of tenants' rights in agricultural tenancies is also included in the CSO estimates. For end-1986, the latest year used in table L later on in the section which is not provisional, the total value of non-marketable tenancy rights was estimated to be £117 billion of which

- a. £5 billion related to agricultural tenancies
- b. £70 billion related to council house tenants
- c. £42 billion related to other tenants, including tenants of private sector landlords and housing associations.

For the purposes of the work reported here, the value of agricultural tenancies has been ignored due to the lack of information about the correlation between this type of wealth and other information on the wealth database. The valuation of other non-marketable tenancy rights is based on the following procedures:

- a. The CSO established the vacant possession value of all rented property. For council houses, values were based on a 1983-84 study in connection with the right to buy scheme. For private sector rented houses, values were based on the ratio of capital values to rateable values for owner-occupied houses applied to the aggregate rateable value of private sector rented houses, with certain adjustments.
- b. The landlords' share of the vacant possession value was based on advice from the Inland Revenue's Valuation

Office about the ratio of sitting tenant house prices to vacant possession prices observed in sales of privately rented dwellings. In recent years, sitting tenant house prices are estimated to have been about one half of the vacant possession prices. The estimated ratio was applied to the vacant possession value of all rented houses, including council houses, to derive the value of the landlords' share.

c. The value of the tenants' rights is defined as the difference between the total vacant possession value and the landlords' share of the value.

These estimates are subject to wide margins of error. One particular point of concern is that the ratio of sitting tenant to vacant possession house prices is derived from information about private sector rented houses but this ratio is also applied to council houses. This may lead to some under-statement in the value of council tenants' rights since council house rents may have been somewhat lower than private sector rents for the same types of property. It should also be noted that, as defined, the CSO's estimate of the value of non-marketable tenancy rights does not include the value of council tenants' right to buy at a discount to vacant possession values.

Non-marketable tenancy rights should be allocated to all tenants in the population. But, although house owners (including joint property owners) can be identified on the wealth database, it is not possible to distinguish between tenants and those adults who are living in either an owner-occupied house which they do not own or a rented house where another adult pays the rent. For the estimates below, it has been assumed that all non-marketable tenancy rights can be allocated to small estate owners (ie to all adults for whom no grant of representation would be obtained on death and who do not have a jointly owned dwelling): this assumption will tend to over-state the amount of wealth in the form of non-marketable tenancy rights which are allocated to the less wealthy groups of the population.

Estimates of distribution of extended definition of personal wealth

Some preliminary estimates have been made for the years 1976, 1981, 1986 and 1989 of the distribution of the series E definition of wealth supplemented by non-marketable tenancy rights. As discussed above, the estimated values of non-marketable tenancy rights exclude the value of agricultural tenancy rights; the end-year estimates published by CSO have been converted to a mid-year basis. The results are shown in table L.

This table shows that this extended definition of personal wealth is more evenly distributed than the series E definition of wealth. The Gini coefficient for all four years is between 5 and 7 percentage points lower than the corresponding series E Gini coefficient. The percentage of wealth owned by the wealthier half of the population falls by 3 to 4 percentage points when non-marketable tenancy rights are included. The reduction in the inequality of the distribution of wealth resulting from the inclusion of non-marketable tenancy rights reflects the fact that these rights have been allocated to the less wealthy groups in the population. In these analyses, this wealth has been allocated to individuals with wealth below the level at which it would be necessary to seek grant of probate and who are not joint owners of a house. Although some tenancy rights will be attributable to individuals in the identified population, these are likely to account for a relatively small proportion of total marketable tenancy rights: the allocation assumed for these analyses is not expected to have led to any significant distortion of the results.

Further work would be required to improve on the estimates of the value and allocation of non-marketable tenancy rights before a full series of the distribution of this extended definition of wealth could be produced. Consideration would also have to be given to the treatment of rights to housing benefit since the level of housing benefit payments in the future is closely linked to the level of rents paid by tenants. The analyses are mainly included here to illustrate the effect which the inclusion of other forms of non-

TABLE L
Distribution of Personal Wealth including non-marketable tenancy rights
Adult Population of UK

	State pensions valued on historic valuations				State pensions valued on latest valuations			
	1976	1981	1986	1989 ¹	1976	1981	1986	1989 ¹
Concentration of wealth among adult population								
Percentage owned by:								
most wealthy								
1 per cent	11	10	10	11	12	10	10	11
2 per cent	15	14	14	15	16	14	14	15
5 per cent	22	21	22	25	24	22	23	25
10 per cent	31	31	32	36	33	32	33	36
25 per cent	50	51	54	57	52	52	55	57
50 per cent	74	75	78	80	76	75	79	80
Gini coefficient	38	39	42	45	41	40	43	45
Amount of non-marketable tenancy rights ² allocated (£billion)	42	89	106	155	42	89	106	155

¹ provisional

² mid-year estimates excluding agricultural tenancy rights

marketable wealth can have on estimates of the distribution of personal wealth and further developments on non-marketable tenancy rights are not planned.

FURTHER PLANNED DEVELOPMENTS

The main development planned for the future is the inclusion of the value of accrued rights in personal pensions. These rights may become an important form of wealth and research will be carried out into the ways in which the value of these rights could be estimated and allocated to the wealth database.

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