Fiscal Studies (1996) vol. 16, no. 4, pp.69-93

Pensioner Income Inequality

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I. INTRODUCTION

One-and-a-half million pensioners are dependent on the minimum means-tested benefit, income support. But the numbers on income support have barely changed in two decades despite substantial increases in its value and that of its precursor, supplementary benefit. At least another 2 million receive means-tested housing benefit or council tax benefit. At the same time, in 1992–93, 3 million pensioners paid over £5 billion in income tax, a small minority at the higher rate of income tax. Pensioners are poorer than the working population, and some are on very low incomes, but they are not uniformly poor.

Since 1980, the basic state pension, the main benefit payable to pensioners, has risen only in line with prices, and so its value relative to average earnings has fallen from about 20 per cent of average male earnings to nearer 16 per cent by 1995. At the same time, incomes from private pensions have risen. Not surprisingly, inequality among pensioners has risen over this period.

These are some of the facts about the pensioner[2] income distribution that are already well known.[3] In what follows, we will provide more in-depth analysis of the current pensioner income distribution and about how it has changed. We will extend information about the distribution back as far as 1961, virtually two

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The authors would like to thank the Central Statistical Office for providing the data and Richard Disney, Alissa Goodman and Steven Webb for their extremely valuable comments and advice. Thanks are also due to two anonymous referees for their comments and suggestions. The authors retain full responsibility for the resulting analysis.

[2] Note that throughout we refer to pensioners as those above current state pension age (65 for men, 60 for women).

[3] See, for example, Dilnot and Johnson (1992) and Department of Social Security (1995a and 1995b).

decades further than has previously been attempted. And we will attempt to explain what has happened to pensioner incomes by using decomposable inequality indices to look at the contribution of different sorts of income to overall inequality and at the relative roles played by different sorts of pensioners.

A number of interesting 'new facts' are unearthed. Inequality among pensioners showed a distinct U shape between the early 1960s and early 1990s, being much higher at both the start and end of the period than in the middle. This pattern is actually quite different from that displayed by non-pensioners. High earnings among a minority of pensioners played a major part in this inequality at the start of the period. A compression in the distribution of investment income and rising levels of social security, combined with declining numbers of earners, resulted in the falling inequality in the 1970s. Private pensions and investment incomes were most important in determining the rising inequality at the end of the period.

Changing income levels and degrees of inequality among pensioners will have obvious policy consequences. As Dilnot and Johnson (1992) argue, widening inequality brings into question the role of a universal flat-rate benefit such as the basic pension. Increasing polarisation between those with and those without good private pensions has been among the reasons behind proposals for the reform or universalisation of private pensions (see Field and Owen (1993) and Falkingham and Johnson (1992)). Understanding what it is that drives changes in inequality is of particular importance for this and for thinking about what might happen in the future.

II. DATA AND METHODOLOGY

All the data used in this paper are derived from the Family Expenditure Survey (FES).[4] We make use of 33 years of data from 1961 to 1993 inclusive, data which were originally prepared and used by Goodman and Webb (1994). In the data, over 61,000 pensioner benefit units are observed over the three decades, where a pensioner unit is defined as a single female aged 60 or over, a single male aged 65 or over, or a married couple in which the male is at least 65. So our pensioners are defined with reference to the age of eligibility for the state pension rather than according to their economic activity.

Because the FES is a sample of households, it excludes the institutional population. Therefore, in the following analysis, all those resident in nursing homes or any other institutional accommodation are excluded. It should be noted that the exclusion of the institutional population is of particular significance for this age- group; for example, the 1991 census counts nearly 320,000 people in residential or nursing homes for the elderly and disabled. The reader interested

[4] This is an annual survey, containing in a typical year detailed information on the incomes and expenditures of around 7,000 households drawn from the UK population.

in the incomes of the institutional population is referred to Evans (1995), who collects together the number and incomes of the non-household population. Unless otherwise stated, total incomes and income sources described in this paper are for pensioner benefit units, with income received by other members of a pensioner's household being ignored. All incomes are net of direct taxes (and National Insurance) and are expressed in January 1995 prices.

We choose to look at the benefit unit's income rather than that of the whole household of which the pensioner is a member because we are specifically interested in where pensioners' incomes come from. This might lead to an underestimation of the living standards of pensioners living with younger employed individuals but avoids picking up changes in the incomes of non-pensioners and in the living arrangements of pensioners when comparing incomes across time. It is worth noting, though, that over the period under discussion, the household circumstances of pensioners have changed quite dramatically. At the start of the 1960s, one-third of all pensioner families lived with other non-pensioners (mostly grown-up children). This proportion had fallen to just 13 per cent by the beginning of the 1990s. One might therefore expect changes in household incomes enjoyed by pensioners to be somewhat different from changes in benefit unit incomes.

Because of the large numbers sharing with workers, average household incomes were substantially higher in the early 1960s and the change in household composition has damped down the overall increase in household incomes. Interestingly, even among those pensioners who do still live with non-pensioners, the levels of economic activity among the non-pensioners in the household seem to be much lower than used to be the case. It might well be that most pensioners nowadays living with grown-up children are doing so because they need significant levels of care that preclude employment of the carer. In any case, we are concerned here with the sources of incomes that are paid directly to pensioners and abstract from these issues.

Where appropriate, we *equivalise* incomes such that those of single pensioners and married couples can be directly compared. Incomes are equivalised using the McClements scale (McClements, 1977). This assumes that single pensioners need 61 per cent of the income of couples to reach the same standard of living. Thus the average equivalent income for single pensioners in 1992–93 was £207, compared with the unequivalised mean income of £122 given in Table 1.

Throughout, we use just one definition of income which, apart from being based on a family unit rather than a household, is equivalent to the before-housing-costs (BHC) definition used by, for example, the Department of Social Security (1995a and 1995b). This is a weekly, current, net, equivalent income. This does have a number of disadvantages. First, it includes housing benefit as a component of income so that increasing housing costs (relative to overall inflation) will appear to result in poor renters having higher incomes over time.

Second, it does not include an estimate of the imputed return to owner-occupation, so that owner-occupiers do not appear any better off than renters. Both of these decisions were made for essentially data-driven reasons. We cannot separately identify housing benefit prior to 1983, and at no point is it easy to impute an income for owner-occupation. Whilst being aware of these shortcomings, we are confident that the completely consistent data, which these choices make it possible for us to use, tell a story that is both interesting and in all its relevant components correct.

III. PENSIONER INCOMES IN 1992–93

We start by providing a brief description of pensioner incomes in 1992–93, the most recent years for which data are available. Table 1 shows the mean and median levels of net income by marital status and gender for pensioners in 1992–93, while for comparison, Table 2 gives income levels for non-pensioners. As is usual in most income distributions, mean incomes are higher than medians. Like the distribution as a whole, the pensioner income distribution is skewed, with many on relatively low incomes and a few in an upper tail with high incomes. As one would expect, pensioner incomes are lower than non-pensioner incomes, and vary between different groups of pensioners.

The mean income for single male pensioners is over 20 per cent greater than that for single female pensioners, although the median is only some 7 per cent higher, indicating the greater dispersion among single male pensioners. The discrepancy between single male and female pensioners is partly a result of the fact that male pensioners are generally younger. In other words, the result is not adequate to draw the conclusion that female pensioners of any given age are poorer than their male counterparts at that age (though this is in fact the case for other reasons to do with previous labour market experience).

TABLE 1

Pensioner Incomes, by Family Type, 1992-93

£ per week, January 1995 prices

	Married pensioners	*Single pensioners*	*Single male pensioners*	*Single female pensioners*
Mean	230	122	141	117
Median	184	99	105	98

Note: Two calendar years appended together
Source:1992 and 1993 Family Expenditure Surveys.

The mean income of single female pensioners in 1992–93 was £117 per week, but incomes between different groups of single pensioners vary greatly. For example, those females who have never married have a mean weekly income

of some £149, widowed pensioners enjoy £112, while those female pensioners who are divorced or separated have an income of £118 per week, nearer to the overall mean.

TABLE 2

Non-Pensioner Incomes, by Family Type, 1992-93

£ per week, January 1995 prices

	Married with children	*Married without children*	*Single with children*	*Single without children*
Mean	391	369	180	144
Median	331	320	150	122

Note: Two calendar years appended together
Source:1992 and 1993 Family Expenditure Surveys.

The main components of pensioner income in 1992–93 are shown in Table 3, along with the percentage of pensioner tax units actually receiving some income from each source. Social security has nearly 100 per cent coverage among pensioners as they virtually all receive a state pension of some sort. About three-quarters have some investment income, while over half have a private pension. As with total pensioner income, the income sources are not distributed equally. The disparities between the non-zero means and medians are substantial, especially in the case of self-employment income, earnings and investment. A large proportion of pensioners in receipt of these sources receive only a small amount.

TABLE 3

Components of Pensioner Income, 1992-93

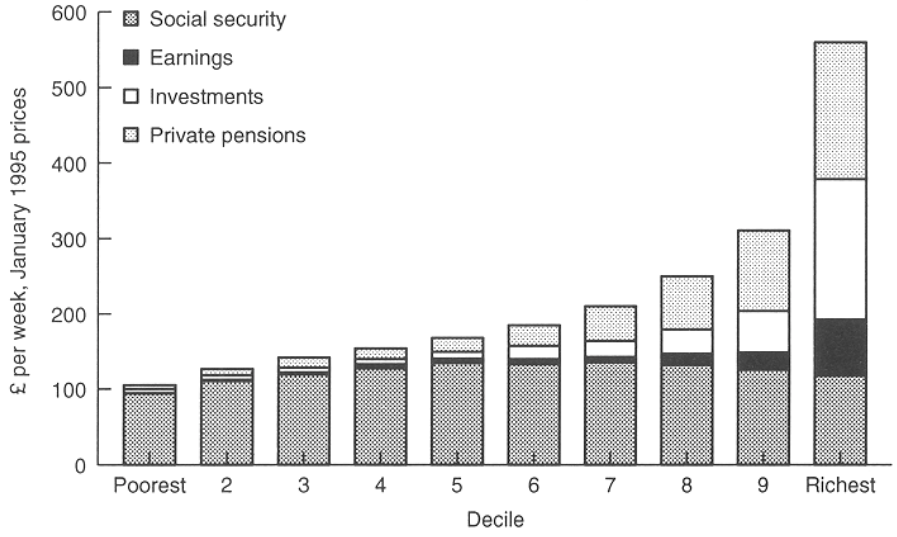
January 1995 prices

Income source	*Mean net income (£ per week)*	*Non-zero mean net income (£ per week)*	*Non-zero median net income (£ per week)*	*Percentage of pensioners with some*
Self-employed	3	66	8	4%
Private pensions	37	64	38	57%
Investments	26	34	8	75%
Earnings	7	47	10	15%
Social security[a]	85	86	73	99%
Housing benefit	7	23	24	32%
Other	1	25	7	2%

[a] Excluding housing benefit
Note: Two calendar years appended together
Source:1992 and 1993 Family Expenditure Surveys.

FIGURE 1

Income Composition, by Decile, 1992–93



Notes: Mean incomes used.
Two calendar years appended together.
Source: 1992 and 1993 Family Expenditure Surveys.

A description of average levels of income tells us little about the distribution of incomes among pensioners. The distribution is illustrated in Figure 1, which shows the composition of pensioner income by equivalent income deciles.[5] The richest tenth (in terms of net equivalent tax unit income) have on average nearly five-and-a- half times the mean net income of the poorest decile. The ratio of ninety-fifth percentile to fifth percentile point is rather lower, at 4.5 to 1.

The most important income source is social security, which alone accounts for over half of all pensioner income. For the lower deciles, social security is easily the largest component of income; only in the ninth decile do private sources of income become more important than the state. However, the relatively well off receive more from the state than those who are poor. For example, the poorest tenth of pensioners on average receive £95 per week, whereas the richest tenth receive £117,[6] with the intermediate deciles doing even better. Reasons for this include the greater probability that pensioners in the upper deciles are in

[5] Income deciles subdivide a ranked income distribution into 10 equal parts. The first decile contains those individuals who receive the lowest incomes, while the tenth decile contains those who enjoy the highest incomes.

[6] Amounts are for equivalent income.

receipt of a SERPS pension, while married couples are more likely to have both partners receiving a full state pension. Pensioners in the lower deciles, but not the bottom one, are more likely to receive housing benefit.

Moving up the income distribution, there is an absolute and proportional increase in income from earnings, reflecting a minority of people over state pension age who carry on working but are typically in the richest deciles as a result. The greatest change is seen with private pensions and investment income, which together account for over half of all income for the two richest deciles. It is receipt of a private income that pushes pensioners towards the top of the income distribution. Those who have to rely largely or exclusively on social security have rather low levels of income. The range of incomes covered by the first seven deciles who are more than 50 per cent dependent on social security is small. The mean for the seventh decile is less than twice that of the first.

Pensioners' overall incomes are also closely related to their age, gender and marital status. Older pensioners tend to be poorer than younger ones. Single females tend to be both older and poorer than married couples and males.

Table 4 illustrates the relationship between income and marital status, showing that single females are more likely to be in the lower income quintiles.[7] For example, 23 per cent of single female pensioners are in the poorest fifth of pensioners, compared with only 13 per cent in the richest fifth. Conversely, pensioner couples are more likely to be in wealthier quintiles. This is partly explained by the fact that a pensioner couple is more likely to have a private pension (72 per cent of pensioner couples as against 45 per cent of single female pensioners and 57 per cent of single males). Pensioner couples are also more likely to have at least one member in paid employment or to hold some form of investment.

TABLE 4

Percentage in each Quintile of the Overall Pensioner Income Distribution, By Family Type

Per cent

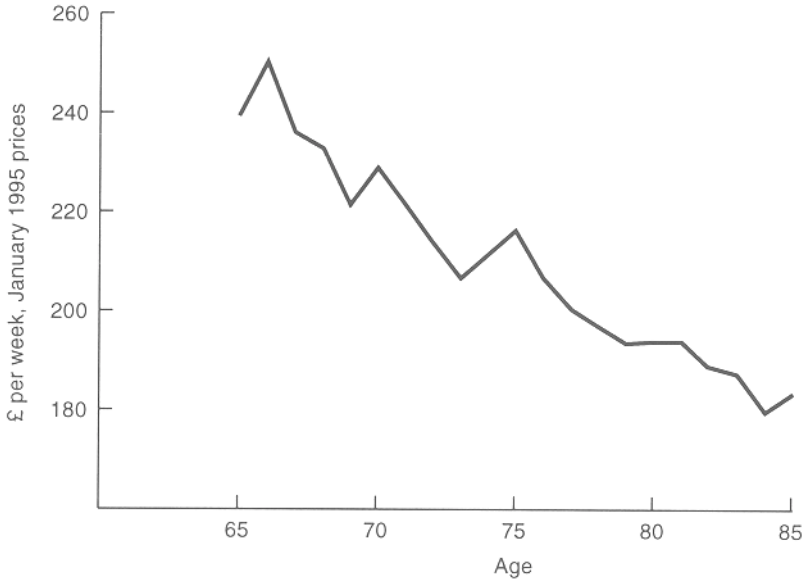
	Quintile					
	Poorest	*2*	*3*	*4*	*Richest*	*Total*
Single male pensioners	14	21	24	20	21	100
Single female pensioners	23	23	24	16	13	100
Pensioner couples	19	18	17	22	24	100

Notes: Net equivalent income quintiles are used.
Rows may not total due to rounding.
Two calendar years appended together
Source: 1992 and 1993 Family Expenditure Surveys.

[7] Income quintiles subdivide a ranked income distribution into five equal parts. The poorest individuals are in the first quintile while the richest are in the fifth quintile.

FIGURE 2

Mean Tax Unit Income, by Age, 1992–93



Notes: Three-year moving averages.
Two calendar years appended together.
Source: 1992 and 1993 Family Expenditure Surveys.

The negative relationship between pensioner income and age is highlighted in Figure 2. Those pensioner benefit units where the head is aged around 65 receive around £240 per week, whereas when the head of the benefit unit is over 80, weekly income is less than £200 per week.

There are two possible reasons for older pensioners being poorer. Either pensioners grow poorer as they get older, for example because of inadequate indexation of pension or using up of capital, or later generations are richer because of higher lifetime earnings, greater access to occupational pensions, etc. In fact, most of the observed difference appears to be of the latter type. For example, the mean equivalent income in 1992–93 for 65- to 69-year-olds was £240 in January 1995 prices, while the corresponding figure for 65- to 69-year-olds in 1977–78 was just £155.

There are many reasons why later cohorts of pensioners are better off than older cohorts of pensioners. Younger pensioners are more likely to have had higher incomes over their working lives, while over time the availability of private pensions has increased, so that a smaller proportion of older pensioners have a private pension simply because they did not have access to one. This increase in the coverage of occupational pensions by each successive cohort is shown in Table 5. The table shows the percentage of each date-of-birth cohort

recording receipt of some occupational pension in the first five years after state retirement age. For male pensioners born in the period 1900–04, and thus reaching state pension age between 1965 and 1969, just under half received income from an occupational pension, whereas coverage increases to some 68 per cent for the male cohort that retired the most recently. For women, occupational pension coverage has also grown, but much more dramatically: for married females, only 2 per cent of 60- to 64-year-olds, born in the period 1900–04, received income from an occupational pension, compared with 23 per cent of the cohort born in the period 1925–29 and 24 per cent of those born in the period 1930–33. Single females also saw a rise, in that coverage more than doubled. It is unlikely that occupational pension coverage will increase to any great extent amongst males retiring in the future, but amongst females the trend could well continue.

Not only has coverage increased with each successive cohort, but so have the levels of occupational pension receipt. This results from the likelihood that younger pensioners have on average had more years of membership in an occupational pension scheme plus higher incomes during their working lives. The increases in occupational pension receipt by cohort are given in Table 6. Those males in the earliest cohort who were in receipt of an occupational pension received on average a pension of around £44 per week when they started retirement. Those males who retired some 25 years later received a pension of

TABLE 5

Percentage of Birth Cohorts Recording Occupational Pension Receipt, By Birth Cohort, Gender and Marital Status (men aged 65-69, women aged 60-64)

Per cent

Cohort	*Male pensioners*	*Married female pensioners*	*Single female pensioners*
1900-04	48	2	19
1905-09	50	2	23
1910-14	58	5	28
1915-19	64	10	31
1920-24	65	15	41
1925-29	68	23	48
1930-33[a]	—	24	45

[a] Date-of-birth cohort for four years only, due to insufficient years of data.
Note: Results for married female pensioners are based upon fairly small sample sizes and should therefore be treated with some caution.
Source: 1961-93 Family Expenditure Surveys.

nearly twice that amount. Single females have also seen a growth in their levels of occupational pension income, while the trend amongst the first six cohorts of married women is generally stable, with a substantial increase in occupational pension receipt for the latest cohort. The cohort born between 1925 and 1929 on average received £35 per week in occupational pension income, but the cohort born between 1930 and 1933 appears to have enjoyed an average payment of £57.

There is, of course, much more one could say about the current distribution of incomes among pensioners. Further details using the latest data are available in Department of Social Security (1995b); other analyses are described in Dilnot and Johnson (1992) and in Dilnot, Disney, Johnson and Whitehouse (1994). Rather than repeating these, we now go on to look in more detail at the trends in incomes and in the distribution and composition of those incomes. We will attempt to explain to some extent why the distribution has changed, looking in particular at the role of the various components of income.

IV. PENSIONER INCOME INEQUALITY TRENDS

Like the overall distribution of incomes, the distribution of pensioners' incomes changes over time. Recent studies (Dilnot and Johnson, 1992; Hancock and Weir, 1994) have shown growing income levels and growing inequality through the 1980s in Britain among pensioners, just as inequality has grown among the

TABLE 6

Non-Zero Mean Occupational Pension Receipt, By Birth Cohort, Gender and Marital Status (men aged 65-69, women aged 60-64)

£ per week, January 1995 prices

Cohort	*Male pensioners*	*Married female pensioners*	*Single female pensioners*
1900-04	44	26	31
1905-09	50	27	40
1910-14	49	37	41
1915-19	64	35	40
1920-24	74	25	47
1925-29	87	35	56
1930-33[a]	—	57	62

[a] Date-of-birth cohort for four years only, due to insufficient years of data.
Note: Results for married female pensioners are based upon fairly small sample sizes and should therefore be treated with some caution.
Source: 1961-93 Family Expenditure Surveys.

rest of the population. This study looks at the changes over a longer period of time by using FES data from 1961 onwards.

TABLE 7

Change in Pensioner Incomes at Various Percentiles

	Tenth percentile	*Median*	*Ninetieth percentile*
1961-62 to 1971-72	41%	30%	11%
1971-72 to 1981-82	38%	30%	22%
1981-82 to 1991-92	10%	26%	57%

Notes: Equivalent incomes used.
Two calendar years appended together
Source: Various Family Expenditure Surveys

We continue to use benefit unit incomes to measure living standards, thereby abstracting from the issue of any revenue-sharing between pensioners and other household members.

Since the early 1960s, average pensioner income has doubled in real terms and has actually increased proportionately more than average non-pensioner income. During the 1980s especially, pensioners as a group became better off. And although poorer pensioners fell further behind the better-off pensioners, relative to the poorest non-pensioners they more than held their own as the increasing number of unemployed replaced the poorest pensioners at the bottom of the income distribution.[8]

The growth in pensioner incomes in the 1980s was not evenly distributed, as illustrated in Table 7, which shows incomes at the ninetieth percentile point to have risen nearly six times as quickly over the period as did those at the tenth percentile point. Incomes of married pensioners grew by 38 per cent as against an 18 per cent rise among single pensioners. Previous studies have shown this growing inequality in the 1980s.

What is new about this work is that by looking back at the situation in the 1960s and 1970s, we can see that this growth in inequality is actually a rather recent phenomenon. In both these decades, incomes at the tenth percentile rose more quickly than those at the median, which in turn rose faster than those at the ninetieth percentile. The 1980s were preceded by two decades of diminishing inequality among pensioners. While inequality was far higher in 1990 than in 1980, inequality in the early 1960s was as great as, if not greater than, it was by 1990. From the early 1960s onwards, inequality fell, reaching a low point in the late 1970s and early 1980s before rising sharply over the 1980s. Given that previous studies (Dilnot and Johnson (1992), for example) postulated that the rise in inequality over the 1980s was largely associated with an increase in the

[8] See Goodman and Webb (1994) and Department of Social Security (1995a) for further evidence of this trend.

FIGURE 3

Gini Coefficients

Note: Three-year moving averages used.
Source: Various Family Expenditure Surveys.

importance and levels of private pensions for a group of pensioners, and given that one might have expected this trend to have been going on prior to the 1980s, this pattern is both somewhat surprising and potentially interesting. The next section goes on to explore the reasons for this pattern of change.

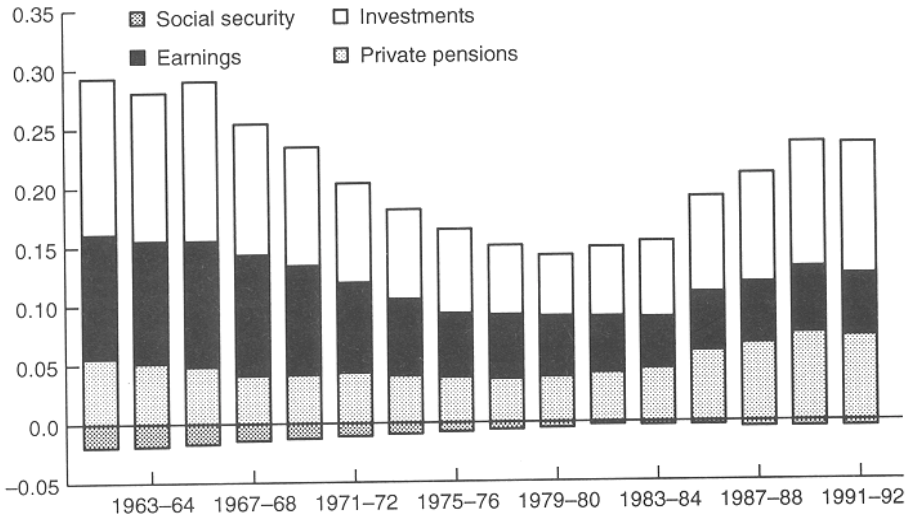
The fall then rise in inequality is illustrated in Figure 3, which plots the Gini coefficients[9] from 1961 to 1993 for both pensioners and non-pensioners. In 1961, the Gini coefficient for pensioners stood at about 0.32, falling to around 0.23 in each year between 1976 and 1980 and a minimum of 0.22 in 1981. It had risen again to 0.3 in 1989. The contrast between the 1980s and the previous two decades is quite stark.

By comparing the trends in the Gini coefficients for pensioners and non-pensioners, it is clear that pensioners have experienced a different trend in income inequality. In the early 1960s, income inequality was higher amongst pensioners than amongst non-pensioners, although from then on, pensioners saw a more rapid decline in income inequality, as measured by the Gini coefficient, than that experienced by non-pensioners. The decline was such that since the late 1960s, income inequality has been lower amongst pensioners than amongst non-pensioners. Two other points are worth noting: first, the rise in income inequality

[9] The Gini coefficient is an inequality measure based on income shares which can take a value of between 1 and 0, where 1 indicates that inequality is at its greatest and 0 means that everyone receives the same income. A formula is provided in, for example, Morris and Preston (1986).

FIGURE 4

Half the Squared Coefficient of Variation for Pensioner Income



Notes: Three-year moving averages used.
Two calendar years appended together.
Source: 1961–92 Family Expenditure Surveys.

in the 1980s was more rapid amongst pensioners than amongst the rest of the population; second, the low point in income inequality for pensioners was in 1981, which was rather later than the turning-point experienced by non-pensioners, who saw a low point in income inequality around 1976–77.

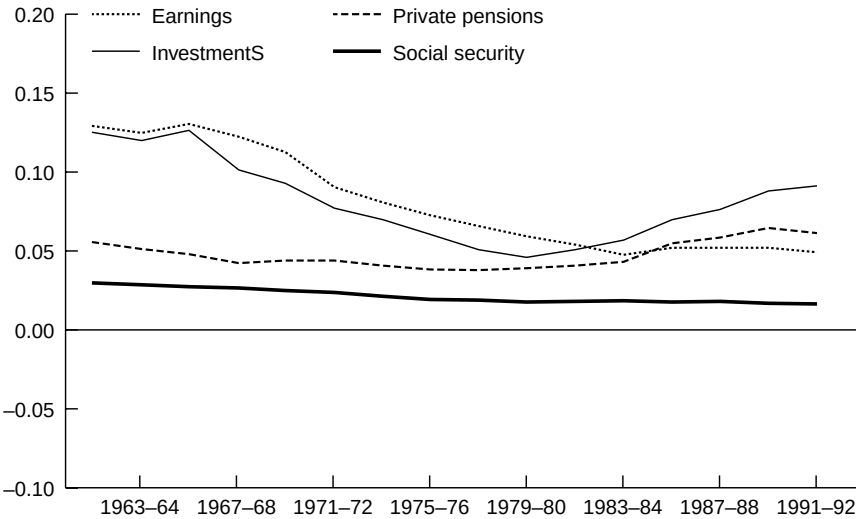
1. Decomposing Pensioner Income Inequality

So what has been driving these differing trends in pensioner income inequality? We start off looking at this question by using a measure of income inequality that can be broken down to show how each component of income contributes to overall inequality. A measure that allows this decomposition is half the squared coefficient of variation[10] (see Shorrocks (1982) and Jenkins (1995)).

[10] Half the squared coefficient of variation is defined as $\sigma^2/2\mu^2$ where σ is the standard deviation of the distribution and μ is the mean of the distribution. Although useful for our purposes, it is a measure of inequality that is rather sensitive to extreme outliers in the data. As a result, we reset some outliers from our data such that in each year pensioners with recorded incomes below 25 per cent of the average had their income reset to one-quarter of the mean. A similar adjustment was made for those with income above six times the mean. Out of a total of 61,011 observations, 295 were affected. While this is not an ideal procedure, it was felt necessary if genuine trends were to be distinguished from noisy data. The methodology resulted in slight movements in the ranking of the distribution between years, but of other possible procedures evaluated, it was clearly the most satisfactory.

FIGURE 5

Contribution to Income Inequality, by Income Component, using Rule A



Notes: Decomposition rule $A = \frac{\sigma^2(Y^k)}{\mu^2}$ where $\sigma^2(Y^k)$ is the variation of income source *k* and

μ is the mean of the distribution.
Three year moving averages used.
Two calendar years appended together.

Source: 1961-93 Family Expenditure Surveys.

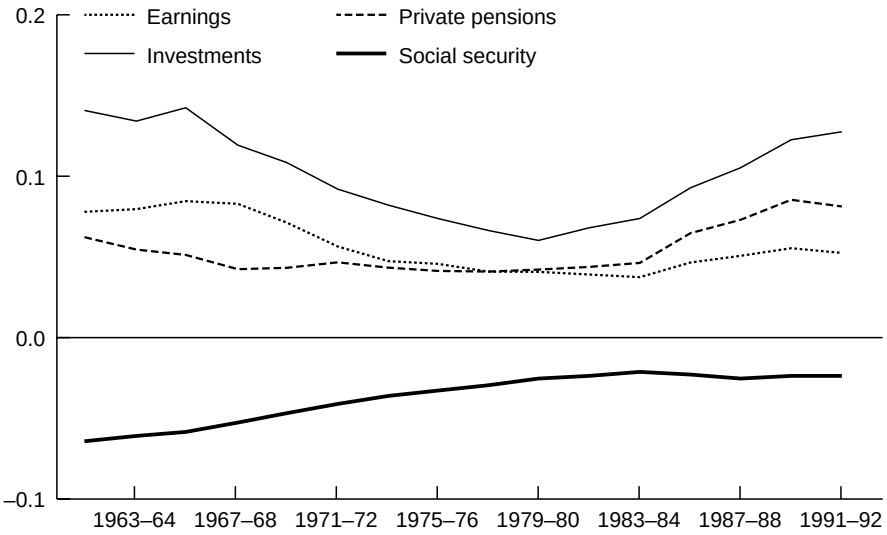
Figure 4 shows half the squared coefficient of variation for the years 1961–62 to 1991–92. The decomposition of the inequality measure by income source is also illustrated. Income inequality amongst pensioners, as given by this measure, follows a similar trend over time to the Gini coefficient, falling sharply from the early 1960s to late 1970s, and then rising sharply from the mid-1980s.[11]

The pattern of contributions to inequality is particularly interesting. At the start of the period, earnings and investments were the main contributors to overall inequality. The contributions of each fell through to the early 1980s. The contribution of earnings remained relatively small during the 1980s, but investments became an increasingly important source of inequality. The other income source whose contribution to inequality rose significantly in the 1980s was private pensions, reflecting their increasing importance to higher-income

[11] Despite the fact that the Gini coefficient is a measure giving greatest weight to changes near the middle of the distribution while half the squared coefficient of variation is sensitive to outliers, we found little difference in the inequality ranking among different years using the two measures. The most and least equal years were the same on both measures. More than three-quarters of the years had the same ranking in terms of income inequality, or differed by just one place.

FIGURE 6

Contribution to Income Inequality, by Income Component, using rule B



Notes: Decomposition rule $B = \frac{\sigma^2(Y^k) + 2\,\mathrm{cov}(Y^k, Y - Y^k)}{\mu^2}$ where $\sigma^2(Y^k)$ is the variation of income source k, μ is the mean of the distribution.
Three-year moving averages used.
Two calendar years appended together.

Source: 1961-93 Family Expenditure Surveys.

pensioners. Finally, the other main source of income, social security, has a small equalising effect, but one that has diminished over time. The smallness of the effect might appear surprising but is a function of the way in which the decomposition works.

In effect, the decomposition of half the squared coefficient of variation gives results that are an average of two inequality decomposition rules or ways of looking at the contributions of different income sources to overall inequality. The first rule (let us call it rule A) effectively calculates for each income source what inequality there would be if that income source were the only source of the differences in income. The second (rule B) computes for each income source the reduction in inequality that would be observed if that income source were given an egalitarian distribution. Figures 5 and 6 show the contribution to income inequality by each income source using the decomposition rules A and B respectively.

Each line in Figure 5 shows the inequality that there would be if that income source were the only source of inequality. On this measure, all income sources

TABLE 8

Decomposition of Pensioner Income Inequality

Contribution of:	*1961–62*	*1971–72*	*1981–82*	*1991–92*
Social security [=(1)×(2)×(3)×(4)]	–0.02	–0.01	>–0.01	>–0.01
(1) Correlation with total income	–0.23	–0.19	–0.07	–0.03
(2) Factor share	0.50	0.60	0.67	0.54
(3) Within-source inequality (square root)	0.33	0.23	0.19	0.22
Investments [=(1)×(2)×(3)×(4)]	0.10	0.08	0.05	0.12
(1) Correlation with total income	0.67	0.69	0.68	0.75
(2) Factor share	0.15	0.11	0.12	0.17
(3) Within-source inequality (square root)	2.15	2.48	1.78	1.81
Earnings [=(1)×(2)×(3)×(4)]	0.11	0.07	0.04	0.05
(1) Correlation with total income	0.59	0.53	0.54	0.49
(2) Factor share	0.20	0.15	0.08	0.07
(3) Within-source inequality (square root)	1.78	2.02	2.70	3.09
Private pensions [=(1)×(2)×(3)×(4)]	0.05	0.04	0.04	0.08
(1) Correlation with total income	0.46	0.49	0.59	0.62
(2) Factor share	0.13	0.13	0.14	0.22
(3) Within-source inequality (square root)	1.70	1.56	1.34	1.16
(4) Total inequality (all sources, square root)	0.50	0.43	0.35	0.49

Notes: May not total due to rounding.
Two calendar years appended together.
Source: 1961–92 Family Expenditure Surveys.

must make a positive contribution to inequality, and that includes social security. At the start of the 1960s, investment income and earnings were most unequally distributed and thus contributed the most to pensioner income inequality on this definition (using rule A). Their contribution to inequality fell until the late 1970s, after which the contribution of earnings continued to fall while investment's contribution began to grow again. By 1992, investment income once again made a greater contribution to pensioner income inequality than any other income source, while earnings had been superseded by private pension receipts, which had started to make a greater contribution to inequality in the late

TABLE 9

Percentage of Pensioner Tax Units Receiving Income Sources

Per cent

Cohort	*Earnings*[a]	*Investments*	*Social security*[b]	*Private pensions*
1962-63	26	55	91	26
1967-68	26	58	94	30
1972-73	24	54	97	35
1977-78	21	57	98	39
1982-83	16	68	99	45
1987-88	15	74	99	51
1992-93	18	75	99	57

[a] Includes self-employment income.
[b] Includes housing benefit.
Note: Two calendar years appended together.
Source: 1961-93 Family Expenditure Surveys.

1970s. Throughout the period, social security income saw a slight downward trend in its contribution to pensioner income inequality — it became more equally distributed. This largely reflects the fact that coverage of social security benefits has risen since the 1960s, approaching 100 per cent at the end of the period.

Figure 6 shows the impact of imposing an egalitarian distribution of each of the income sources (rule B). The pattern is similar but the negative contribution of social security indicates that an egalitarian redistribution of it would actually increase inequality, because, in general, poorer pensioners receive relatively more social security income than do richer pensioners. On this measure, the equalising effect of the social security system did, however, decline over the 1960s and 1970s and then remained fairly constant during the 1980s. Otherwise, the trends observed in Figure 5, for the other three income sources, are again apparent in Figure 6. An equal amount of investment income given to all pensioners would reduce inequality by a decreasing amount from the early 1960s up until the late 1970s; thereafter the magnitude of the reduction in pensioner inequality rises. The contribution of private pensions again rises from the late 1970s and they replace earnings as the second most important contributor to pensioner income inequality.

Clearly, the changes in each of the income components' contribution to inequality result from changes in the levels and distribution of that income source. We can again make use of a decomposition of half the squared coefficient of variation to look at this. In this instance, it will be broken down to ascertain each income source's contribution to inequality in terms of that factor's

share of total income, the correlation of that factor with total income and the inequality seen within the distribution of that income component. Table 8 shows this decomposition for selected years, where the overall effect on inequality of each income source is as shown in Figure 4.

Taking the income sources one at a time, we look at the most important source of pensioner income first, namely social security. As we saw in Figure 4, its overall equalising effect on income inequality declined through time, so that by the 1980s its equalising effect was quite negligible (using this inequality measure). A number of factors explain this, but one — social security's share of total income — acted in the opposite direction for it actually rose over time. It rose sharply, increasing from a half of all income in 1961–62 to two-thirds by 1981–82, before falling back again to just over half by the end of the period. All other things being equal, this would have increased its equalising effect. (Whether it was equalising or disequalising depends entirely on the sign on its correlation with total income.)

The growth in factor share over the first two decades and then its falling away were largely policy-driven. Benefits were raised substantially faster than prices until 1980, and social security receipts doubled in real terms between the beginning of the 1960s and the end of the 1970s, whereas total pensioner income only rose by 50 per cent. In the 1980s, social security receipts rose by about 10 per cent but total pensioner income grew by some 40 per cent. This in part reflected the fact that the state pension was uprated only in line with price inflation, so that social security's share of total income fell back to just over a half by 1991–92. In addition to the growth in the levels of social security, the number of pensioners receiving income from the state also increased, from 91 per cent in 1962–63 to nearly full coverage by the early 1980s (see Table 9) and this helps to explain the decline up until the early 1980s of the within-source inequality. The slight growth thereafter will largely have been caused by increased housing benefit payments to a minority of pensioners.

But the real story behind the decline in social security's equalising effect lies in its correlation with total income. An income source can only be equalising if it is negatively correlated with total income, and while that remains the case with social security, it is only just so. The size of the negative correlation has fallen from –0.23 to –0.03. A number of changes lie behind this trend. The first is the already identified increase in the coverage of social security. Most of those in the early 1960s who were receiving no state benefits were earning. They are likely to have been affected by the 'earnings rule', abolished in 1989. This generally caused people under the age of 70 who were earning to defer receipt of the basic pension.[12] These individuals would have had high incomes overall but no social security. Second, an increasing proportion of married women nearer the top of the income distribution became entitled to a full basic pension in their own right.

[12] See Whitehouse (1990).

Third, SERPS payments became available during the 1980s to individuals who are unlikely to be at the bottom of the income distribution. One should also bear in mind the role of housing benefit, which became both more widespread and more valuable over time and will not have been concentrated right at the bottom of the income distribution.

Table 8 again shows the falling and then rising role of investment income in causing inequality. The within-source inequality is very high, though lower than it was at the start of the period. The main explanation for the fall in the contribution of investments to total inequality until the 1980s appears to have been the fall in within-source inequality in combination with a fall in its share of total income. During the 1970s, exceptionally high rates of inflation will have eroded the value of investments such that amounts earned from investments will have fallen, thereby reducing their factor share. Low inflation and high real interest rates over the 1980s will have been in part responsible for raising factor shares again. The fact that investment income plays a particularly important role in the incomes of better-off pensioners is indicated by its high positive correlation with total income, a correlation which increased in the 1980s. In fact, between 1981–82 and 1991–92, all three elements of inequality were rising and resulted in the contribution of investments to inequality more than doubling in a decade.

The share of earnings in total income fell from 20 per cent to 7 per cent over the period, this fall being largely responsible for the reduction in the contribution of earnings to overall inequality. This decline in factor share is mostly a result of the lower activity rate amongst pensioners over time (see Table 9). For example, amongst male pensioners aged 65–69, 26 per cent were in employment in 1961–62; by 1977–78, this had dropped to 15 per cent, and by 1991–92, it had fallen further to just 7 per cent. The fall in the share of earnings in total income was accompanied by a continuing but much less dramatic fall in its correlation with total income. Earners in the 1960s often earned enough to take them to the top of the income distribution. The contribution of earnings to income inequality rose slightly in the 1980s despite continuing falls in factor shares and correlation with total income, because of an increase in the inequality of the distribution of earnings amongst pensioners. This grew throughout the period, and had it not done so, the contribution of earnings to pensioner income inequality would have been much lower.

In contrast to the decline in earnings is the increase in the importance of the contribution to pensioner income inequality of private pension receipts, which grew considerably in the 1980s. Both their correlation with total income and their factor share have grown, the former particularly quickly before the 1980s and the latter since. Indeed, the increase in factor share is almost exclusively responsible for the big increase in private pensions' contribution to inequality over the 1980s. The increasing factor share reflects both higher coverage (see Table 9) and increasing average payments. Acting against these two trends has

been a continuous fall in the inequality of private pension receipts which, until the early 1980s, dominated the other two effects. Private pensions are now very much more equally distributed than are earnings and investments.

In conclusion, in this section, by decomposing one particular inequality measure, we have unravelled much of the pattern of income inequality change among pensioners over the last three decades. The growth in investment income has been especially important to those at the upper end of the income distribution and, along with the growth in private pension income, is one of the main contributors to the rise of inequality amongst pensioners in the 1980s. The decline in inequality of the 1960s and 1970s can, by contrast, be attributed to the compression of investment income, along with the rising levels of social security income and the declining number of earners. This period also saw a spreading in coverage of private pensions receipt without a significant increase in the levels of receipt at the higher end of the income distribution.

2. Inequality within and between Groups of Pensioners

It is not just changes in the composition of total income that are likely to be of interest in assessing what has happened to inequality but also changes in the contributions of different groups of pensioners to the total. To address this issue, we turn to another measure of inequality — the mean log deviation (MLD). Like the half squared coefficient of variation, the mean log deviation is additively decomposable. As its name suggests, it is a logarithmic measure of the deviation of incomes from the mean[13] (see Jenkins (1995)).

It can be used to look at the within- and between-group inequality amongst married, single female and single male pensioners.<$FWe also tried splitting the pensioner population by age-group but found little of interest either by way of different inequality within age-groups or by way of different trends among the different age-groups.> The within-group measure shows how much inequality each family type contributes to overall pensioner income inequality; in other words, how much of the inequality observed is the result of the unequal distribution of income within any given group of pensioners, say, for example, pensioner couples. The between-group component measures the extent to which differences in mean income of the three family types are contributing to overall income inequality. Figure 7 shows the aggregate within- and between-group inequality for the three pensioner family types.

What is immediately apparent in Figure 7 is that the great majority of overall pensioner income inequality is explained by the unequal distribution of income

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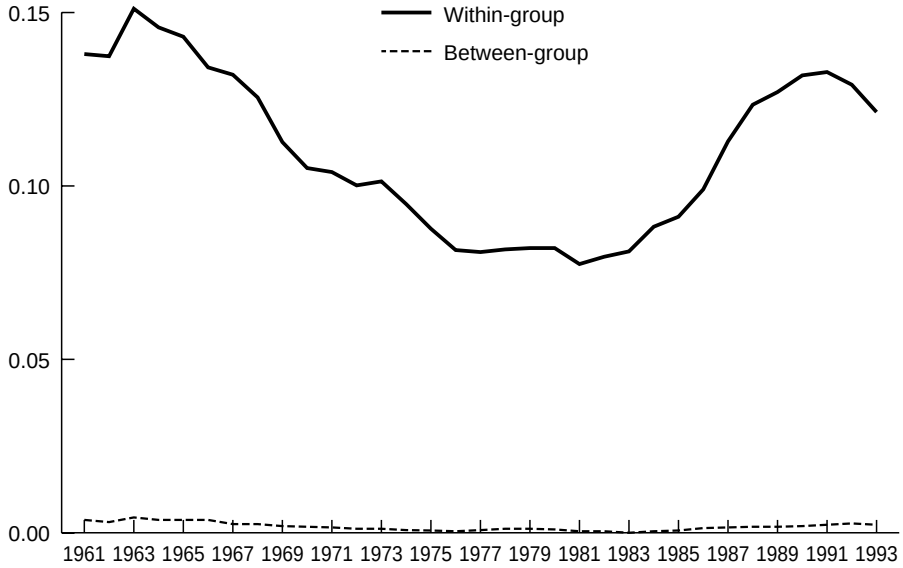
[13] $\text{MLD} = \sum_{k=1}^{k} \theta_k I_k + \sum_{k=1}^{k} \theta_k \log\left(\frac{\mu}{\mu_k}\right)$ where θ_k is the population weight of group k, I_k is the MLD within group k, μ is the population mean income and μ_k is the mean income of group k.

FIGURE 7

Total Within- and Between-Group Inequality, by Family Type



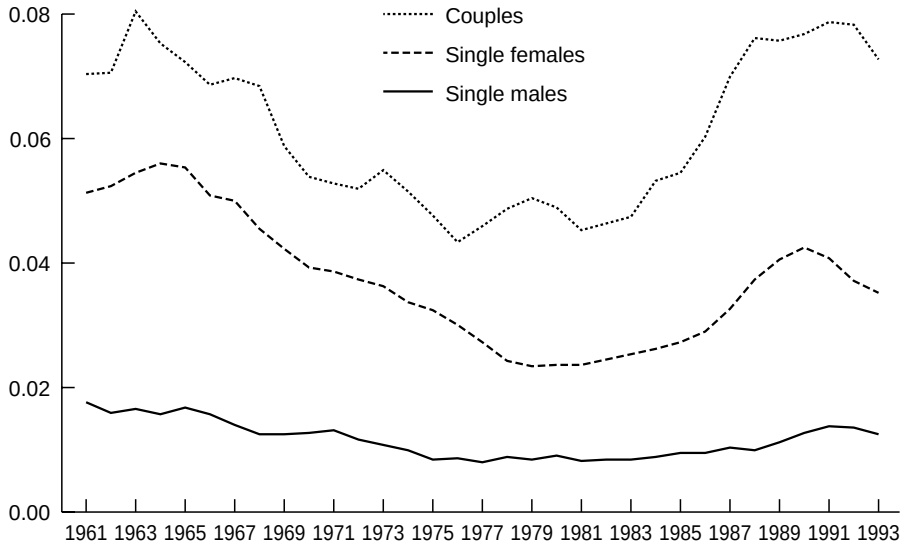
Note: Three-year moving averages used.
Source: Various Family Expenditure Surveys.

within the pensioner groups. Between-group inequality is fairly insignificant. As with the other inequality measures, the mean log deviation shows the characteristic U-shaped trend in income inequality amongst pensioners over the last three decades.

Breaking the total within-group inequality down into the contribution by each family type, as shown in Figure 8, reveals that income inequality amongst pensioner couples contributes the most to overall within-group inequality. It also shows that the U-shaped trend in income inequality is most pronounced for married couples, who show a particularly sharp increase in their contribution to inequality in the late 1980s. Single females make the second largest contribution, while single males make the smallest. The relative sizes of these contributions are not surprising, since the contribution is a product of the within-group inequality and the population share of each group. The relative changes are also affected by changes in population group sizes. Over the last 30 years, the proportion of single males in the pensioner population has remained fairly constant, at just under 10 per cent. Married couples, on the other hand, have increased their share of the pensioner population from around 48 per cent in the early 1960s to around 55 per cent in the early 1990s. The growth in couples has been at the expense of single females, who have seen their share fall from around 42 per cent in 1961 to about 35 per cent today.

FIGURE 8

Contribution to With-Group Inequality, by Family Type



Note: Three-year moving averages used.
Source: Various Family Expenditure Surveys.

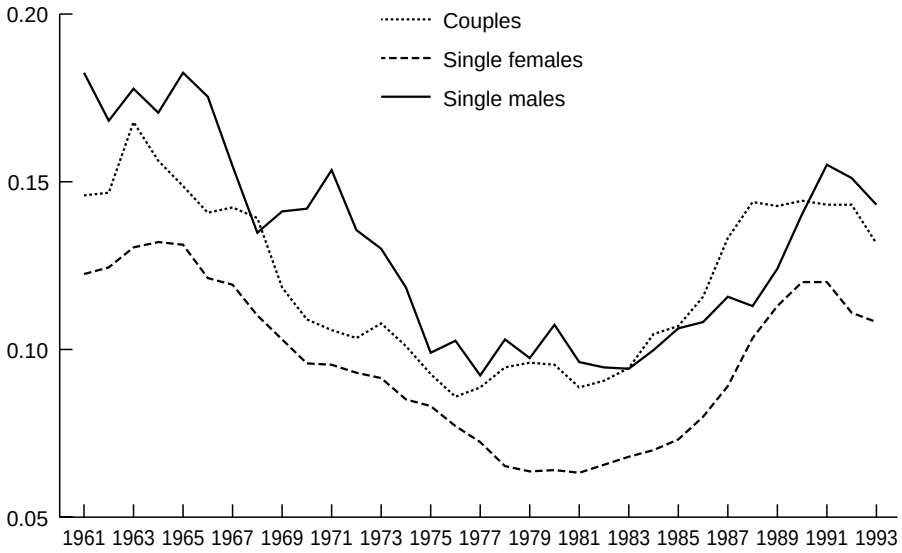
Despite this fall in the proportion of single females in the pensioner population, their contribution to total within-group income inequality has still grown in the 1980s, though this contribution has not reached the levels seen at the start of the period. If changes in population shares are not taken into account, as shown in Figure 9, then it can be seen that in the 1980s, within-group inequality increased proportionately more for single female pensioners than it did for the other two pensioner groups, although within-group income inequality amongst married couples or single males remains higher. Figure 9 also shows that all three family types experienced a decline in within-group income inequality during the 1960s and 1970s, and then a rise during the 1980s.

A similar analysis looking at between-group inequality was also undertaken. It revealed that the inequality between the groups was at its lowest in the 1970s than at either end of the time period. However, as already noted from Figure 7, these effects are small.

Decomposing the MLD to look at within- and between-group inequality amongst the three pensioner family types shows that within-group inequality is the dominant contributor to overall income inequality amongst pensioners, with married pensioners contributing the most to within-group inequality partly as a result of their large population share. Discounting population shares shows that the level of within-group income inequality is fairly similar for single male

FIGURE 9

Within-Group Inequality, by Family Type



Note: Three-year moving averages used.
Source: Various Family Expenditure Surveys.

pensioners and married pensioners, but that income amongst single females is more equally distributed.

V. CONCLUSIONS

As much previous work has shown, pensioners in the UK are far from being homogeneous from the point of view of their incomes. As a group, they have lower incomes than non-pensioners, but a significant minority have substantial levels of income. At the other end of the scale, about a third of pensioners are dependent on some form of means-tested benefit. Older pensioners are poorer than younger ones, and single females are very much over-represented at the bottom of the distribution.

Also well documented has been the rise in pensioner income inequality over the 1980s. What this paper has shown is that the rise in inequality is a recent phenomenon. There has been a U-shaped trend in pensioner income inequality over the last three decades, with income inequality falling steadily from the early 1960s until the early 1980s and then rising again to a level comparable to that in the late 1960s. The main reasons for the decline in income inequality amongst pensioners in the earlier two decades appear to have been the rise in the levels and coverage of social security income, the decline in the importance of

earnings, and a reduction in the levels of investment income due to high levels of inflation. During this period, although private pension coverage increased, there was no significant increase in the levels of receipt at the upper end of the income distribution. The rise in inequality in the 1980s was driven by the growth in private pension income and high real interest rates that increased investment income, especially for those pensioners who were relatively wealthy.

Although single female pensioners are significantly poorer than either married couples or single males, the great majority of the total inequality arises from inequality within the different family types rather than between them. The incomes of single women are not only lower than those of the other groups but are also more uniformly distributed.

Pensions policies will have to take into account the changing levels and compositions of pensioner incomes. They have changed greatly over the past three decades and in ways and for reasons that are not always paralleled in the population as a whole. The next challenge is to understand what it is about people's labour market experience and membership of pension schemes that determines their income in retirement, so that useful predictions can be made about the pensioner income distribution in the future. The correct pensions policy will depend on incomes not now but in the future.

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