Early retirement and income in later life

Pamela Meadows



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Tel no +44 (0)117 954 6800 Fax no +44 (0)117 973 7308 E-mail tpp@bristol.ac.uk www.policypress.org.uk

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Pamela Meadows is an economist working on social policy issues.

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Summary

The recent trend towards retirement before state pension age has given rise to fears that those retiring early voluntarily, or as a result of volunteering for redundancy, may be basing their decisions on short-term considerations. In other words they decide to retire because they regard their pension entitlement as adequate to support them in their 50s and early 60s, but may be ignoring the implications for the later years of their retirement, which in turn can lead to an increased risk of poverty in later life. There is also known to be another group of people who leave the labour market before state pension age. This is the group who experience unemployment and ill health in their 50s and early 60s, and who become economically inactive with limited income and resources.

This research has used the Family Resources Survey¹ to compare the incomes of retired people currently over state pension age who left the labour market early with the incomes of people in the same group who left the labour market at state pension age or later. The analysis takes account of differences in housing wealth, educational background and ownership of financial assets, although it was unable to take account of occupational history, which is not available from this data source and which other research has shown plays a critical role in income after retirement. Our analysis finds that men who stop working early are consistently better off than otherwise apparently similar men in the same age group who worked for longer. There are few differences between the incomes of women who retire early and those who retire at the age of 60 or later. This study has not revealed any direct evidence that early retirement leads to low income in later life, but that does not imply that none of those retiring early are poor. In particular, those who stop working in their 50s because of poor health may be at relatively high risk of low income.

There are three important caveats to these findings. The first is that the analysis is confined to survivors. Those who leave the labour market early on health grounds are likely to have a lower probability of surviving into the oldest age groups. Thus, the early retired people who we observe in their 70s and 80s are unlikely to be fully representative of those who leave the labour market early. It is likely that those who both retire early and survive into later old age are drawn from occupational and social groups that have higher than average levels of income and assets.

The second is that there has been a marked change in behaviour among successive cohorts of the currently retired population. There are relatively few early retirees in the oldest age groups, whereas among the youngest pensioners it is exceptional to still be working up to state pension age. Thus, it is not strictly possible to make predictions about the long-term outcomes for younger pensioners based on the experiences of today's older pensioners. However, the finding that early retirees have higher incomes applies across all age groups of men over 65, although not to all women over 60. It is found most strongly among younger pensioners, but importantly is not as apparent among men aged 60-64.

¹ The Family resources Survey 1997/98 was supplied by the ESRC Data Archive with the permission of the Department of Social security. Neither the Archive nor the Department are responsible for the analysis or findings of this research.

The third, and potentially the most important, is that our data source does not tell us about people's work history other than the number of years spent in full- and part-time employment. Earnings from employment and self-employment will have a powerful influence on people's ability to save for their retirement, either through pension schemes or through other forms of asset accumulation, including ownership of both financial assets and housing wealth. Earnings in turn are influenced by both occupational status and other features of work experience. Access to and returns from occupational pension schemes are also related both to occupation and to sector and size of employer. We have data on educational history, which is associated with earnings progression, but the type of job and employer can lead to earnings differences between otherwise similar individuals.

1

Background to the research

Over the last 20 years, there has been a growing tendency for people to stop working before they reach the age at which they can draw their state retirement pension. The labour force participation rates of men over the age of 50, and especially over the age of 60, has fallen dramatically (Blundell and Tanner, 1999; Tanner, 1998; Campbell, 1999), although there have been some recent signs of stabilisation (Bardasi and Jenkins, 2002). In 1979, 83% of men aged 55-64 were economically active. By 1997 only 63% were. For women the trend towards early retirement has been offset to a large extent by the general trend towards higher labour market participation rates at all ages. Table 1 illustrates the falling proportion of people who have worked up until state pension age in each successive age cohort of pensioners.

Poverty among pensioners in general has fallen markedly over the past 20 years. In 1979 nearly half of all pensioners were in the lowest fifth of

Table 1: Proportion of people in each age cohort whostopped work at different ages (%)

	Current age					
Age of	60-	65-	70-	75-	80-	05.
retirement	64	69	74	79	84	85+
Men						
50-54		8.5	3.7	2.6	1.7	0.8
55-58		16.9	14.9	7.4	4.0	2.1
59-60		19.0	16.0	12.3	9.5	5.0
61-63		25.2	20.9	25.3	15.4	13.7
64 or more		30.5	44.4	52.5	69.4	78.4
Women						
50-54	25.5	19.7	10.7	10.1	8.6	6.9
55-58	35.4	22.0	23.1	17.8	11.2	10.9
59 or more	39.1	58.3	66.2	72.1	80.2	82.1

the overall income distribution, whereas by 1995/ 96 the proportion had fallen to under a quarter before housing costs were taken into account, or under a fifth after housing costs (DSS, 2000a). An alternative way of looking at the trend in pensioner incomes is to take a benchmark fixed in real terms. If the median income of the population in 1994/95 is taken as the benchmark, 55% of pensioners fell below this in 1979, while less than 20% did by 1998/99 (DSS, 2000b). In other words, 8 out of 10 of today's pensioners have a standard of living which is at least as high as the average level achieved by the whole population in 1994/95.

A substantial part of this improvement is due to the marked increase in the proportion of retired people who have income from occupational pensions. In 1979, 40% of pensioner households received income from an occupational pension. By 1996/97 57% did. The average income pensioner households got from occupational pensions grew by 162% in real terms over the same period (Cousins et al, 2000). In fact, this increase is a continuation of a trend that goes back more than 30 years (Blundell and Johnson, 1998; Johnson et al, 1992). In addition, a growing proportion of pensioners have savings and other financial assets, which both provide an income and enable them to deal with major items of expenditure (for example major home repair bills). They have also experienced higher levels of earnings during their working lifetimes, which has meant that they enter retirement with a reasonable stock of goods, including cars, clothes and consumer durables (Meadows, 2001).

However, the recent trend towards early retirement has led to renewed concerns about low income in retirement. In general those who retire early fall into six groups, although the margins between them are somewhat blurred and individuals sometimes pass from one category to another:

- 1. those who are encouraged (or more rarely obliged) to leave their jobs and draw a pension (which in some cases may be actuarially enhanced by their employer) as part of organisational restructuring;
- 2. those who choose of their own accord to retire early and draw the actuarially reduced pension that they have earned to date;
- 3. those who become unemployed over the age of 50 and having failed to find a new job drift into inactivity and effective retirement;
- those who develop health problems which make it difficult for them to find or keep work, or who become disabled. Some of this group will have occupational pensions, but many are reliant on Incapacity Benefit or its predecessors;
- those (mainly women) who have given up work to care for someone who is elderly, sick or disabled;
- 6. those (again mainly women) who have given up work because a spouse or partner has retired.

People may change the way they view themselves and their situation over time, so that although their objective status may not change, they may move from unemployment or healthrelated inactivity into retirement more or less imperceptibly. Moreover, the proportion of the inactive population in each of these categories has changed over time.

Although in the early 1980s there was a rapid growth in the proportion of men aged between 55 and 64 who left the labour market because of sickness or other reasons, this peaked in the mid-1980s. The proportion of this age group who had retired, on the other hand, continued to grow throughout the 1980s and into the 1990s (Tanner, 1998; Campbell, 1999).

The majority of those who draw their occupational pensions before the normal retirement age for their particular scheme receive pensions which are lower than they would have received if they had retired at the normal age (Tanner, 1998). However, some receive fully enhanced pensions, and others experience reductions that are less than an actuarially fair amount. Moreover, Tanner (1998) has shown that the trend towards earlier retirement has affected men both with and without occupational pensions, although for those without, early retirement was more likely to have been involuntary. Thus, there are three sources of concern about poverty among those who have retired early:

- 1. Those who leave work through ill health or unemployment and who are mainly dependent on state benefits during this period of their lives, experience low incomes during their 50s and early 60s. This generally means that they reach retirement age with few assets.
- 2. Those who draw actuarially reduced occupational pensions may find themselves considerably worse off than other pensioners of the same age who have secured pensions based on possibly 10 more years' worth of additional contributions by the time they reach their 70s and 80s.
- 3. Those who receive enhanced pensions have nevertheless foregone earnings at the point in the life cycle when their mortgages are paid off, their children have left home and they are generally most able to save and build up their stock of financial assets and consumer durables.

2

The data

The purpose of this research was to see whether there was evidence that those currently over retirement age who had stopped work between the ages of 50 and 64 (men) or 50 and 59 (women) had lower incomes than those in the same age groups who had worked until state pension age. While a more desirable approach would have been to have followed through a cohort of people from their 50s into their 70s and 80s, this would have required the establishment of an appropriate survey 25 or 30 years ago. Several potential data sources for future studies were established during the 1980s and 1990s, but as yet they have not had sufficiently large flows of people into the older age groups to make realistic analysis possible. The research has therefore used a large national cross-sectional survey, the Family Resources Survey for 1997/98.

The advantage of this data set is the large number of people it contains who are over state pension age: over 10,000. Our analysis was confined to a subset of these. We excluded all those who still had some form of paid work at the time of the survey, those who had never had paid employment and those whose last paid work had taken place before the age of 50. This left us with a sample of just over 7,000 people: 1,122 men who had last worked at the age of 65 or later, 2,041 women who had last worked at the age of 60 or later, 1,767 women who had last worked between the ages of 50 and 59 and 2,152 men who had last worked between the ages of 50 and 64. These numbers were sufficient to allow us to consider separately men and women in six different age groups: women aged 60-64, men and women aged 65-69, men and women aged 70-74, men and women aged 75-79, men and women aged 80-84, and men and women over 85. Some limited information is also presented for

men currently aged 60-64 who last worked before the age of 60.

In our analysis, we compared the incomes of those who stopped working before state pension age with those who stopped working at state pension age or later. The full definition is set out in Box 1. This definition is similar to that used in some other studies (for example Meghir and Whitehouse, 1997) but is essentially about the last point at which people were engaged in paid employment rather than strictly when they regarded themselves as retired.

Definition of date of retirement

An individual is regarded as retired for the purposes of this research if:

- they do not currently have any form of paid employment;
- they were aged at least 50 on the date on which they last worked.

This means that anyone who had a period of unemployment or inactivity without returning to work before they retired will be treated as retired as from the date at which that unemployment or inactivity began.

As far as women were concerned, we could find no discernible differences. In the case of men, we also looked separately at the effects of retiring at different ages (50-54, 55-59, 60-61, 62-63). We treated those who had last worked at the age of 64 as equivalent to working until age 65 because the age 64 group will include those who formally retired at age 65 but whose last actual day at work took place at the age of 64. (In addition our data included current age, month and year of stopping work, but not the month of birth, so cannot necessarily distinguish accurately between those apparently aged 64 and those apparently aged 65.)

Since many occupational pension schemes have formal retirement ages of less than 65, this finer breakdown allowed us to consider whether retirement at, say age 63, should be thought of as retiring early. The comparisons we undertook were of two kinds: simple comparisons, and comparisons using multivariate statistical analysis to take into account other potential sources of difference between the groups.

There were marked differences in the proportion of people in each age group who had retired before state pension age. It was very common in the younger age groups, but much less so in the older groups. Thus, 60% of women aged 60-64 had retired before the age of 59 or 60, and 70% of men aged 65-69 had retired before the age of 64. By contrast, fewer than one in five women and men aged over 85 had retired before state pension age. It is also worth noting that most early retirement for men takes place from age 60 onwards, even in the youngest cohorts. Fewer than 10% of men currently aged 65 to 69 stopped work between the ages of 50 and 54. It is also worth remembering that all the women in our sample did some paid work beyond the age of 50. We have not included women who stopped work at younger ages when they got married or had a family, and did not then return to paid employment.









The analysis has one important caveat. Because we are using a cross-sectional study, our sample only includes those who are currently alive. Thus, our methods cannot take into account the fact that survival rates are known to differ by income. Those with the lowest incomes are likely to die earlier than those with higher incomes (Johnson and Stears, 1998; Johnson et al, 1998). Thus our observed early-retired people in older age groups are likely to underrepresent those who retired early on low incomes.

It is also reasonable to assume, although we do not have direct evidence of this, that health status at the point of retirement from paid work has a direct impact on survival rates, if only because some of those retiring early on health grounds do so because they have life-threatening conditions such as cancer or heart disease. If survival rates do differ in this way, those who took early retirement or moved into inactivity on health grounds will be underrepresented in the older age groups in a cross-sectional sample because they have died.

Thus, on both income and health grounds, the composition of the early-retired group is likely to change as we move through the age cohorts. In other words, the survivors among the early retired are likely to be disproportionately drawn from the groups who have retired voluntarily on reasonable occupational pensions.

The analysis using net income from occupational pensions was unsatisfactory on its own, so the results are not reported here. Although occupational pensions are an important component of retirement income, income from state pensions, savings and investments are also important, and it is therefore not surprising that looking at occupational pensions in isolation did not provide any useful results.

Equivalised income takes account of the number of people in the household and standardises on a two-person household. The equivalence scales used to adjust actual household income for the analysis in this report are those used by the Department of Social Security for the Households Below Average Income series of publications. These are based on the calculation that a single adult requires 55% of the income after housing costs of a two-adult household to maintain the same standard of living as a two-adult household, while third and subsequent adults require 45% of a two-adult household's income. Before housing costs, a single adult requires a higher proportion (61%) of a couple's income, but a third or fourth adult requires a smaller addition (42%). The equivalised income for a single-person household is therefore higher than measured income, and the equivalised income for a three or more person household is lower.

Definitions of income

The analysis considered separately three different definitions of income:

- total individual income (pre-tax) (this is the standard Family Resources Survey variable 'indinc');
- net equivalised household income after housing costs (post-tax) (this is calculated by taking the standard Family Resources Survey variable for gross household income [hhinc], deducting the standard variable for total housing costs [hscosthh], aggregating by household the tax and National Insurance paid by individual household members [indtaxni], subtracting it from household income less housing costs and multiplying it by the appropriate equivalence scale based on the number of people in the household);
- net income from occupational pensions.

3

Income by age, gender and retirement group

Table 2 and Figure 3 show the median occupational pension income for men and women depending on the age at which they last worked. The median is the level at which half the sample have more and half have less. It is a useful indicator in income distribution, since, unlike the mean, it is not distorted by large values at the upper end. The most notable feature to emerge from Table 2 is that for virtually all women the median occupational pension is zero. In other words, more than half the women in all age groups have no occupational pension. The only exception is in the youngest age group, those aged 60 to 64, where the median net pension

value is 79p a week for those who retired at age 59 or later. The currently retired population of women are drawn overwhelmingly from groups who were not members of occupational pension schemes. Two thirds of the women in our sample had no occupational pension of their own despite having had paid employment at least in their 50s. Less than a quarter had an occupational pension of more than £20 a week.

The number of men aged over 80 who retired before the age of 59 or 60 is probably too small to be reliable, but in the younger age groups, a clear pattern emerges. In the two youngest age groups

			Current			
Age of retirement	60-64	65-69	70-74	75-79	80-84	85+
Men						
50-54		16.77	0			
N=		(85)	(35)			
55-58		59.30	41.65	11.05		
N=		(168)	(140)	(51)		
59-60		66.46	45.80	28.23	111.97	
N=		(189)	(151)	(85)	(38)	
61-63		47.90	25.86	29.15	22.55	37.62
N=		(251)	(197)	(175)	(62)	(33)
64+		31.17	18.83	13.45	14.11	9.90
N=		(304)	(418)	(364)	(275)	(189)
Women						
50-54	0	0	0	0	0	
N=	(166)	(180)	(92)	(69)	(37)	
55-58	0	0	0	0	0	0
N=	(231)	(201)	(198)	(121)	(48)	(30)
59+	0.79	0	0	0	0	0
N=	(255)	(533)	(568)	(491)	(344)	(225)

Table 2: Median occupational pension net of tax (£ per week)

Note: Medians are not reported where the number of people in the group is less than 20.



Figure 3: Median occupational pension net of tax: Men

(those aged 65-69 and 70-74), those who stopped work at the age of 59 or 60 have the highest pensions (£66.46 and £45.80 respectively). Those who stopped work aged 55-58 have the next highest pensions (£59.30 and £41.65), followed by those who stopped work aged 61-63 (£47.90 and £25.86). Those who retired at age 50-54 have the lowest pensions (including a median of zero for men currently aged 70-74).

Among men over 75, the pattern is slightly different. Those who retired at age 61-63 have the highest pensions, followed closely by those who retired at 59 or 60. Those who retired at age 55-58 have pensions (£11.05) that are slightly lower than those of people who retired at age 64 or more (£13.45). Generally, those in younger age groups have higher occupational pensions than those in older age groups. This is likely to reflect their earnings levels when they retired. Those who retired in the 1990s, for example, typically had earnings which were 50% or more above the earnings of those who retired in the 1970s. However, the pattern among men over 80 is more mixed, and this probably reflects different survival rates. The highest median occupational pension (£111.97) is found in men aged 80-84 who retired at age 59 or 60.

Overall, therefore, in terms of occupational pensions, currently retired women typically have no income at all from this source. For men, those who left work very early (aged 50-54) tend to have very small occupational pensions, but there are very few of them. Those who otherwise stopped work before state pension age have median occupational pensions that are generally higher than those who retired later.

A more reliable measure of income is total individual income, which includes state pensions and other benefits, personal pensions, and income from savings. If we look at Table 3 and Figures 4 and 5, it is apparent that differences in income from occupational pensions do not carry through into total income. For men under the age of 80, the differences in income according to retirement date are relatively small, although those who retired at age 64 or later generally have the lowest incomes in their age group (ranging from £125 a week at age 75-84 to £135 a week for those aged over 85). Those who retired at age 59 or 60 have the highest incomes in their age groups (from £151 a week at age 70-74 to £218 a week at age 80-84).

Table 3 also shows the median incomes for men who are currently under the age of 65 who have stopped working. For each retirement group, those who are currently under the age of 65 have lower median incomes than those who are aged 65-69. This is consistent with our survivor hypothesis, in other words the younger age cohorts of early retired people are more likely than the older age groups to include those who have stopped work because of health problems rather than through choice. More than half (56%) of retired men aged 60-64 have health problems limiting their daily activities. This compares with 38% of those who are retired and aged 65-69.

	Current age							
Age of retirement	60-64	65-69	70-74	75-79	80-84	85+		
Men								
50-54	153.5	154.00	177.00					
N=	(140)	(85)	(35)					
55-58	157.00	169.00	150.00	139.00				
N=	(291)	(168)	(140)	(51)				
59-60	156.00	189.00	151.00	152.50	218.00			
N=	(127)	(181)	(151)	(84)	(38)			
61-63		165.00	145.00	141.00	131.00	176.00		
N=		(251)	(197)	(175)	(62)	(33)		
64+		140.00	129.50	125.00	125.00	130.00		
N=		(304)	(418)	(364)	(278)	(189)		
Women								
50-54	95.00	88.50	89.50	89.00	124.00			
N=	(166)	(180)	(92)	(69)	(37)			
55-58	85.00	84.00	85.50	95.00	100.00	98.00		
N=	(231)	(201)	(198)	(121)	(48)	(30)		
59+	84.00	82.00	100.00	97.00	112.50	119.00		

~

Table 3: Median individual income (£ per week)

Note: Medians are not reported where the number of people in the group is less than 20.

Again, it is also worth noting that median incomes for each retirement group fall with age up to the age of 80, and rise thereafter. This is consistent with those from higher income groups being more likely to survive into the oldest age groups, as discussed above.

In contrast to occupational pension income, most women have some income of their own generally from state pensions or savings. Fewer than 1 in 10 have no income of their own at all. However, women's incomes are typically around 60% of those of men in the same age group. Moreover, the differences between those who retired before state pension age and those who retired at older ages are relatively small. In most age groups, the difference between the highest and the lowest median is less than £15 a week. It is also notable that the oldest women (those over 80) have the highest incomes of their own. This is likely to be because this group are more likely than younger pensioners to be widows, whose own personal income tends to rise when their husbands die (although the household income falls). (See Johnson et al, 1998 for a discussion of this issue.)

Overall, the initial indicators suggest that early retirement does not place people in an adverse position by comparison with those in the same age cohort who retired at state pension age. Although there are marked differences in income derived from occupational pensions, once income from other sources is taken into account, those who leave the labour market early do not appear to be at a financial disadvantage.

If we turn to equivalised household income, in Table 4 and illustrated in Figures 6 and 7, we find that men who retired at the age of 59 or 60 tend to live in households with the highest income. This is consistent with the pattern that we saw for other definitions of income. Again we see that early retired men aged under 65 are on average worse off than those aged 65-69 who retired at the same ages, and that two of the three retirement groups are worse off than those who are currently aged 70-74.

Those who retire at age 64 or later have the lowest household incomes in their age groups. Among women, looking at household income does now produce a discernible pattern: those who stopped work between the ages of 50 and 60 tend to live in households with higher incomes than those who stopped work at the age of 60 or later. Only among the over 85s does this pattern not hold. In other words, although women who have retired before the age of 60 have low



Figure 4: Median individual income: Men





occupational pensions or none at all, and have individual incomes which are similar to those for other women in the same age groups, women who retired early are more likely to be living with someone else with a higher income than women who retired later. This lends support to the hypothesis that retirement is based on household circumstances and is not simply an individual decision for many women.

The initial evidence from each definition of income suggests consistently that men who stop working at state pension age tend to be worse off than those in the same age groups who have retired earlier. In each case, we have used medians, because the median is less liable to distortion by very high values than the mean. In order to check whether the median is still concealing pockets of poverty within the early retired groups we also looked at the proportion of people in each age/retirement group, with incomes below 60% of the median for the whole population – a standard definition of poverty. For 1997/98, the year in which our data were collected, the threshold figure was £135 a week net equivalised household income after housing costs. Among those over retirement age, one in five has an income below this threshold (Meadows, 2001). However, these figures include those over pension age who are still working, who almost all have incomes above this level.

The proportion of a group who have low incomes tends to rise with age for three reasons: first,

there are more women in the oldest age groups and they tend to have lower incomes than men; second, the occupational pensions of those in older age groups tend to be lower and, third, older groups had lower earnings during their working lifetimes than younger groups and therefore had less opportunity to accumulate savings.

Current age Age of 65-69 70-74 75-79 retirement 60-64 80-84 85+ Men 50-54 197.24 207.27 200.38 N =(35) (140)(85) 55-58 210.91 219.71 204.91 189.09 N =(291) (168)(140)(51) 59-60 191.62 254.07 208.00 214.14 282.50 (151) N =(127) (189)(84) (38) 61-63 227.00 191.00 184.00 196.68 234.55 N= (251) (175) (62) (33) (197) 64+ 199.85 168.96 172.15 173.00 180.37 N= (304) (364)(278)(189)(418) Women 50-54 226.19 201.00 194.19 145.45 216.36 N =(166) (180) (92) (69) (37) 55-58 237.72 207.00 190.00 176.00 210.50 152.73 N =(231)(201)(198)(121)(48) (30) 59+ 221.22 202.27 178.01 160.18 160.00 164.18 N =(255) (533) (568)(490) (342) (224)

Table 4: Median equivalised household income after housing costs (£ per week)

Note: Medians are not reported where the number of people in the group is less than 20.



Figure 6: Median equivalised household income after housing costs: Men



Figure 7: Median equivalised household income after housing costs: Women

As Figure 8 shows, the proportion of retired men over state pension age with equivalised incomes below $\pounds 135$ a week tends to be lower among the youngest age group. However, the proportion is much higher in the retired group aged 60-64.

More than a quarter (26.3%) of non-working men in this age group live in poor households. In almost all age groups, those who retired at age 59 or 60 are least likely to live in poor households. The exception is the 75-79 age group, where

Figure 8: Proportion of men in each retirement group who have net equivalised household incomes below £135 a week (%)





Figure 9: Proportion of women in each retirement group who have net equivalised household incomes below £135 a week (%)

those who stopped work aged 55-58 are the least likely to be poor. In the two younger age groups (that is, those under 75), men who retired at age 50-54 are the most likely to be poor: 20% of those aged 65-69 and 29% of those aged 70-74. This pattern is not seen in those over 75. In these groups, those who retired at state pension age or later are most likely to be poor: ranging from 22% of those over 85 to 28% of those aged 75-79.

Figure 9 shows that, among women, the proportion in each retirement group who live in poor households increases with age up to the age of 79. The main exception to this is that women aged 60-64 who left work at age 50-54 are more likely to live in poor households than both others in the same age group and those aged 65-69 who retired at a similar age.

Over the age of 80, the proportion of women living in poor households falls from around 25% to around 20%. This is consistent with the evidence on median income, and with the evidence that those with the lowest incomes are less likely to survive into the oldest age groups (Johnson and Stears, 1998).

At first sight it would appear that almost all those who have retired early, whether by their own choice, or as a result of job loss, ill health or caring responsibilities, are not worse off than other people in the same age groups who worked until at least state pension age. There are indicators that men who retire at the age of 59 or 60 tend to better off than those who retire earlier or later. Those who stopped working very early, that is, before the age of 55, seem to be a more mixed group. Figures 10 and 11 show that the proportion of pensioners in each age group who have health problems which limit daily activities is higher among those who retired at the age of 50-55 than it is among those who retired later. Overall, 46% of retired men and 42% of retired women have health problems, whereas 66% of men and 50% of women who stopped work before the age of 55 do. The incidence of ill



Figure 10: Proportion of male pensioners suffering from ill health which limits daily activities





health is negatively correlated with retirement age. The incidence of ill health falls as the age of retirement increases for both men and women. This suggests that those who survive into the oldest groups of pensioners are drawn from the healthier sections of their age cohorts.

Figure 12 gives details of the median incomes of retired men aged 60-64. It shows that, in general, those who have health problems limiting their daily activities have lower incomes than those who do not have health problems. This is most marked among those who retired between the ages of 55 and 58.

The other striking feature to emerge from the data is the extent to which it has become the exception for men to work until state pension age. Even taking into account the fact that this analysis excludes those who are still working beyond state pension age, it is apparent that only a minority of men are still working up to the time that they first draw their state pension. In this sample (that is, those who are over state pension age, have now stopped work and who worked until at least the age of 50), the median retirement age for men is 63 but for women it is 60.



Figure 12: Median incomes of men aged 60-64 who last worked between the ages of 50 and 60

4

The analysis

The next stage in the research was to examine whether the generally higher incomes of men who had retired early could be accounted for by their being more likely to have characteristics which are generally associated with a higher income in retirement. As far as women are concerned, the differences in income by retirement group are small. Moreover, for current pensioners, their own incomes are relatively small, and their own occupational pensions particularly so. Their income position is dominated by their access to the income of other household members, particularly their husbands. This means that any attempt to correlate their income position with their own individual characteristics is likely to prove fruitless. Although the research tested the multivariate approach for women the results were consistently poor, and they are not reported here.

We know from previous research that the factors associated with higher incomes in retirement are: getting an occupational pension, owning a more valuable house, having savings or other financial assets, completing full-time education at age 20 or more and living in a household which owns a car. The characteristics particularly associated with low income in retirement are: being of ethnic minority origin, being a council or housing association tenant, and being in the oldest age groups (Meadows, 2001). If those who have left work early have higher qualifications than average (implying better earnings potential during their working lifetimes), own larger houses, and have higher levels of savings, this could account for why they tend to have higher incomes than those who retired at state pension age or later. Multivariate analysis allows us to separate out the effects of these different influences and to identify separately the influence of early retirement.

We need again at this point to remember that we are only looking at the incomes of survivors. Those who have left work early on the grounds of ill health, for example, and who may be less likely to have higher incomes, are also probably less likely to survive into the oldest age groups which we are considering here. Thus our sample cannot be fully representative of all those who retire early. On the other hand, we are interested in the long-term financial implications of retiring early.

It is also necessary to reiterate here that the data do not include occupational history. This presents a potential circularity problem in the analysis. Occupational history in terms of both type of work and type of employer is likely to be a key determinant of occupational pension receipt. The receipt of an occupational pension is associated with higher income in retirement. In reality, of course, the underlying factor driving income in retirement is not the receipt of the occupational pension per se, but the labour market history, including job tenure, unemployment spells, and earnings patterns which underlie that occupational pension receipt. (See Bardasi and Jenkins, 2002, for evidence of the importance of this factor.) But here we do not have data on these underlying indicators, only on the occupational pension status. Because of the potential circularity this indicator was excluded from the analysis, although we need to recognise that this means that we have only one indication of work history: the proportion of years aged 15-64 spent in full-time or part-time work.

The analysis used ordinary least squares regression. The results for two different measures of income are reported here: individual gross income from all sources, and equivalised household income after tax. (Attempting to account for differences in occupational pension income as well, gave results which were poorly determined. This suggests that although occupational pensions play an important part in income after retirement, pensioners, and potential pensioners, are unlikely to consider them independently of other sources of income, particularly state retirement pensions and savings income.) Because the distribution of income is log normal rather than normal, the natural logarithm of income was used as the dependent variable. (Median regression, an alternative approach, produced less satisfactory results. It implies that each factor adds a fixed sum, whereas using the log of income means that factors have a proportionate effect.) In each case, the analysis was done separately for each fiveyear age band. An alternative approach would have been to analyse all age groups together, with dummy variables for the different age groups. However, this approach would have implied that the effect of the different explanatory variables was the same for all age groups, which is unlikely to be true given the likely differences in their labour market experience.

Regression analysis base case

- white ethnic origin
- stopped work at age 64 or later
- left full-time education at the age of 15 or earlier
- no health problems limiting daily activity
- non-homeowner
- has no financial assets
- household has no car
- married

The analysis of differences starts with a base case individual. The results of the regression analysis are the effects of varying a single factor in the base case, while keeping all other factors the same. It is thus a process which separates out the relationship with features which can sometimes occur together. For example, earlier research (Disney et al, 1998; Meadows, 2001) has shown that people who have high levels of housing wealth in retirement are also likely to have financial assets. The two are complementary rather than alternative ways of holding wealth. However, because the overlap is not complete there are people who own financial assets while not being homeowners, or having low levels of housing wealth, and there are people who have high levels of housing wealth but no financial

assets – it is possible for statistical analysis to disentangle the two effects. The base case in our analysis is defined in the box, left.

The results described later take this base person and vary a single factor at a time. Full results are in the Appendix.

Overall, the regression results were able to account for more than a third of the observed differences between all the individuals in the analysis. However, for some age groups and some definitions of income, the results were considerably worse than this. Generally, the analysis found better associations for individual income than for household income. This finding is intuitively sensible, since household income depends both on the characteristics of the individual and on those of other members of the household. Thus an individual-based analysis can only give a partial explanation.

Wealth

The most significant indicator of higher income is housing wealth. In our analysis, we treated nonhomeowners as the base case and assessed the effect of different levels of housing wealth as measured by the Council Tax Band of the property on income. The results are summarised in Table 5. It is important to stress that this analysis does not imply that higher levels of housing wealth *cause* higher levels of income. Rather it is that those who have higher levels of housing wealth have higher levels of income. Their housing wealth will reflect their ability to acquire more valuable assets during their working lifetimes, and therefore in many ways stands as an indicator of previous earning power.

Looking at equivalised household income for most age groups, the effect of home ownership up to Band C was generally similar (around 25% for those up to age 75 and around 17% for those aged 75-79). Owning a home in Band D was associated with an income around 30% above that of non-owners, and for Band E the effect was around 48% for groups up to age 80. The relationship with home ownership in Band F and above was considerably higher than Band E in all age groups up to age 80, but the size of the effect varied from around 80% to 116%. The number of owners with very valuable houses tends to be Table 5: Association between value of housing wealth and men's income (% increase (+) or decrease (–) on base case)

	Current age						
	65-69	70-74	75-79	80-84	85+		
Equivalis	ed househ	old					
income	after hous	ing costs					
Band A	+25	+22	+19				
Band B	+26	+26	+15				
Band C	+24	+28	+18	+17			
Band D	+35	+30	+29	+29	+19		
Band E	+47	+49	+46	+66			
Band F	+80	+116	+81	+39	+70		
and abo	ve						
Individua	al income						
Band A			-15	-33			
Band B			-13	-24			
Band C							
Band D							
Band E	19	19		30			
Band F	55	82	37				
and abo	ve						

Note: Base case is non-homeowner.

.. indicates effect was not statistically significant at 0.05 level.

quite small anyway, and as the overall numbers in the population fall with age, this effect is likely to be more influenced by a relatively small number of observations.

The relationship between housing wealth and individual income is less well defined. Interestingly, for those aged 75-79 and 80-84, homeowners in Bands A and B were worse off than non-homeowners. Otherwise Bands E and F and above have large positive effects for some, but not all age groups.

Another important indicator is ownership of financial assets, that is, stocks and shares or government securities. This is summarised in Table 6. Ownership of financial assets was associated with an income between 18% and 30% above that of otherwise similar people who do not have financial assets, depending on the definition of income and the age group. For equivalised income after housing costs, the increase was around 25% in all but the 85+ age group where it was only 18%. For individual income, the effect was around 29% up to the age of 80, 23% for the 80- to 84-year-old age group and no significant effect on those aged 85 or

Table 6: Association between owning financial assets and men's income (% increase (+) or decrease (-) on base case)

		Current age					
	65-69	70-74	75-79	80-84	85+		
Equivalised household income afte housing cos	25 r ts	24	22	27	18		
Individual income	30	28	29	23			

Note: Base case is someone with no stocks, shares, unit trusts or similar financial assets.

.. indicates effect was not statistically significant at 0.05 level.

Table 7: Association between the household having use of a car and men's income (% increase (+) or decrease (-) on base case)

	Current age					
	65-69	70-74	75-79	80-84	85+	
Equivalised household income after	+14	+16	+11			
housing cost Individual income		+11				

Note: Base case is someone living in a household without a car. .. indicates effect was not statistically significant at 0.05 level.

more. As with housing wealth, ownership of financial assets is likely to be an indicator of earning power during the working lifetime.

The third wealth indicator in the data is car ownership. This is widely used as an indicator of wealth. It is included here even though there are some more direct measures of wealth, because it is useful as an indicator of the quality of life available to people in retirement. Owning nonessential consumer durables such as a car indicates the availability of spare resources within a household which are not necessarily captured by other indicators.

As Table 7 indicates, there was a statistically significant association between individual income and car ownership in only the 70-74 age group. There was, however, an increase in household income of between 11% and 16% for men under 80 who lived in households with the use of a car. This result is a reminder that the circumstances of

other household members do have an influence on the outcomes for older men as well as those for older women.

Health

The health indicator used in the analysis was whether or not someone had a condition which limited their daily activities. Part of the reason for this was a recognition that some early retirement takes place on health grounds and those people might generally be expected to have lower incomes than those whose early retirement was wholly voluntary.

However, as Table 8 indicates, in most cases health problems do not have any impact on income. In the three instances where they do (equivalised household income for men aged 70-74 and 75-79 and individual income for men aged 75-79) the effect is small but positive. Part of the explanation for this may be that some of those in this group will have access to disability-related benefits. Earlier research (Meadows, 2001) has shown that those who receive such benefits are less likely to be poor than those who do not receive them.

Table 8: Association between having an illness or disability that limits daily activities and men's income (% increase (+) or decrease (–) on base case)

Curren	it age 65-69	70-74	75-79	80-84	85+
Equivalised household		+6	+12		
income after housing cost	S				
Individual income			+7		

Note: Base case is someone without a health problem or disability that limits daily activities.

.. indicates effect was not statistically significant at 0.05 level.

Human capital

The fact that the data did not include any work history information has already been discussed above. There was some information about two potential sources of influence on earnings during the working lifetime and on pension entitlement after retirement. One of these indicators was for education and the other was for work experience. In the event, the work experience indicator was never statistically significant.

The data did not include a direct measure of qualifications, but we did have age of leaving fulltime education. Taking first the difference between the base case (leaving full-time education at the age of 15 or under) and leaving full-time education at the age of 16, which for men aged over 65 will have implied that they stayed up to School Certificate (the precursor of GCE O levels and GCSE) level, so probably attended a grammar or independent school, the difference was statistically significant for only three age groups: those aged 65-69 where it led to individual incomes 15% higher and household incomes 10% higher, and those aged 75-79 where individual incomes were 30% higher and household income 13% higher. The results for

Table 9: Association between leaving full-time education later than age 15 and men's income (% increase (+) or decrease (–) on base case)

	Current age						
	65-69	70-74	75-79	80-84	85+		
equivalised household income after housing costs							
Left age 16	+10		+13		+59		
Left age 17-20	+23	+18	+34	+21			
Left age 21 or olde	+46 er	+25		+43	+65		
Individual	income						
Left age 16	+15		+30	+15	+79		
Left age 17-20		+38	+20	+34	+45		
Left age 21 or olde	+59 er	+49		+82	104		

Note: Base case is someone who left full-time education aged 15 or younger.

.. indicates effect was not statistically significant at 0.05 level.

the third age group, the over 85s, should be treated with some caution as the numbers are relatively small. Here those leaving education at the age of 16 had incomes 59% higher than those who left education at an earlier age.

There are more consistent effects of leaving fulltime education between the ages of 17 and 20. This group includes those who took vocational education courses in further education as well as those who took the Higher School Certificate, the precursor of A levels. In three out of the five age groups, household incomes were around 20% higher for people who left education at these ages compared with the incomes of those who had left education before the age of 16. For those aged 75-79 the effect was larger (an increase of 34%). The effect on individual incomes was more variable, between 20% for those aged 70-74 and 45% for those aged 80-84.

Our final education measure was leaving full-time education at the age of 21 or older. This group includes those who went to university and teacher training colleges. It will not generally include those who studied for professional qualifications in law, accountancy and engineering via articles which was the standard route at the time. They will generally be included in the 17-20 group.

In each age group, the premia for leaving fulltime education at age 21 or older are larger than those for leaving at age 16 or ages 17-20. For household income the premia range from 25% for men aged 70-74 to 65% for those aged over 85. For individual income the premia range between 49% for those aged 70-74 to 104% for those aged over 85. In the current generation of pensioners, staying in full-time education beyond the age of 20 was very much the exception and tended to lead to well-defined career paths, often with good occupational pension entitlements.

To some extent, all our human capital indicators will be standing proxy for work history. However, we need to recognise that although there is an association between education level and occupation and earnings, the relationship is not exact. There are people with high education levels with relatively low occupational status or earnings. There will also be a large number of people who have obtained vocational or professional qualifications through work-based training rather than full-time education, and our data will not have captured these effects. But the lifetime earnings for this group, and hence the potential income carried forward into retirement, will reflect their qualifications rather than their full-time education.

Marital status

The analysis took married men as the base case and compared the income of those with other marital statuses with it. In fact, as Table 10 shows there were very few significant associations between marital status and either individual or household income. The one consistent result was that widowed men had equivalised household incomes between 13% and 26% higher than married men.

Table 10: Association between marital status and men's income (% increase (+) or decrease (-) on base case)

		Curre	ent age		
	65-69	70-74	75-79	80-84	85+
Equivalised	household	lincome	after hou	sing cost	S
single		+20	+19		
widowed	+21	+13	+13	+22	+26
separated		+65			+65
divorced	+15		+23		
cohabiting				+62	
Individual i	ncome				
single	-34				
widowed					
separated		-77			
divorced					
cohabiting	-31				

Note: Base case is someone who is married.

.. indicates effect was not statistically significant at 0.05 level.

Table 11: Association between being of ethnic minority origin and men's income (% increase (+) or decrease (-) on base case)

		Current age							
	65-69	70-74	75-79	80-84	85+				
Equivalised household income afte housing cos	-33 er sts	-38	-38						
Individual income	-30	-83	-51	-60					

Note: Base case is someone of white ethnic origin.

.. indicates effect was not statistically significant at 0.05 level.

Ethnic origin

Fewer than 2% of our sample of people over state pension age were of ethnic minority origin. As Table 11 shows, those under 80 had household incomes around a third lower than otherwise similar people of white origin. There was greater variation in individual income. Among those aged 65-69 minority groups had incomes 30% lower than white people, while in the other age groups under 85 the differences were between 51% and 83%.

Effect of early retirement

We might have expected that the higher incomes observed among those who have retired early compared with those who have continued to work up to state pension age would be accounted for by differences in education, wealth and health status as discussed earlier. However, the analysis also included indicators to capture any residual unmeasured differences between those who retired at different ages. The starting expectation in this research was that these early retirement indicators would be negative. In other words, after taking account of differences in education, asset ownership and other factors, the earlyretired group would be expected to have lower incomes than those who worked up until state pension age. The main reason for this view was the expectation that those who have retired early will have had fewer years in which to build up both their pension entitlements and their savings. In fact, the reverse was true. Even taking account of differences in education, pension entitlements

Table 12: Association between early retirement and men's income after other differences have been taken into account (% increase (+) or decrease (–) on base case)

		Current age									
	65-69	70-74	75-79	80-84	85+						
Equivalised	household	income a	after hou	sing cost	S						
50-54	+26										
55-58	+19		+16		+54						
59-60	+17	+9	+13	+23							
61-63	+10		+9								
Individual i	ncome										
50-54	+21	+27									
55-58	+15										
59-60	+20	+17	+22	+30							
61-63	+13		+11		+21						

Note: Base case is someone who retired at age 64 or later.

.. indicates effect was not statistically significant at 0.05 level.

and asset ownership, those who retired early tend to have higher incomes than those who retired at age 64 or later.

Table 12 shows that the results are most clearly determined in the 65-69 age group where all early retirement groups had incomes which were above those of people who had retired at the age of 64 or later. On household income the effect follows a clear gradient with those who retired earliest having the highest incomes (26% above the base case) and those who retired at age 61-64 having the smallest difference with the base case (10%). If we look at individual incomes, those who stopped work at age 50-54 and 59-60 had incomes around 20% higher than those who retired at 64 or later. The other early-retired groups had incomes around 15% higher than the base case.

In the other age groups, the effects are less clearcut. Retirement at age 59 or 60 leads to significantly higher individual and household incomes in all age groups under the age of 85. The effect on household income ranges from 9% to 23%. The effect on individual income varies from 17% to 30%. In a small number of other cases, there was a positive effect of early retirement of between 10% and 20%.

Part of the explanation for some of these differences may lie in the differing proportions of men getting occupational or private pensions. As indicated earlier, this was not included this as an explanatory factor in the regression analysis as it is not truly an independent explanatory variable, but an intrinsic part of income. However, as Figure 13 shows, it is notable that in all but one age group, those who retired at age 50-54 are much less likely to get an occupational or private pension than those who retired later. The differences between the other groups are much smaller. Those retiring at 59 or 60 are the most likely to get an occupational pension in all age groups, generally followed closely by those who retired aged 61-63.

Taken together with the other evidence, this suggests that stopping work before the age of 55 is probably less likely to be voluntary, and is therefore more likely to be as a result of unemployment, redundancy or ill health. Conversely, stopping work aged 60 or more seems to be more akin to normal retirement.





5 Conclusion

The starting point for this research was an expectation that those who retire early experience an income penalty in later life. It did not find this. On the contrary, it found that members of the current pensioner population who retired early either have similar incomes to people who retired at state pension age or their incomes are higher.

The data are unable directly to take account of work history, and it is likely that it is this omission that accounts for part of the findings. It is also likely that another part of the explanation lies in differential mortality. Both these require further investigation with data sets which allow individuals to be followed through from their working lives into later old age.

The analysis has demonstrated that those who are currently aged 60-64 who have retired are more likely to be poor and to have health problems than those in older age groups. This is consistent with a higher proportion of this group being those who have retired early involuntarily through ill health or unemployment. In the older age groups, the median incomes of those who have taken early retirement are higher, and a smaller proportion of them are poor. Thus, although these data do not provide any direct evidence that this disadvantaged group of early retired men are disproportionately likely not to survive into later old age, the evidence is consistent with this.

The surviving early retired appear to be drawn disproportionately from the group who are wellprovided for financially. This suggests that they have built up their savings and pension entitlements during their working lives to an extent that allows them to live in relative comfort in retirement. Their ability to do this will have depended to a large extent on their work history in terms of occupation, type of employer and experience of unemployment. Far from trading short-term advantage for long-term poverty, the surviving early retired group seem in general to have saved hard and planned well. They appear to have been rational rather than myopic.

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Appendix

Regression results

Table A1: Log of individual income, men aged 65-69

Source	SS	df	MS	Number of obs = 997	
Model	102.33	23	4.449	F(23,873) = 27.52	
Residual	157.32	973	0.162	$Prob > F \qquad = 0.00$	
Total	259.66	996	0.261	R-squared = 0.394	
				Adj R-squared = 0.380	
				Root MSE = 0.402	

			[95% con	fidence		
	Coefficient	error	t	P> <i>t</i>	inter	val]
proportion of years worked	0.176	0.144	1.221	0.222	-0.107	0.460
ethnic minority origin	-0.282***	0.083	-3.410	0.001	-0.444	-0.120
left full-time education age 16	0.094**	0.043	2.185	0.029	0.010	0.178
left full-time education age 17-20	0.203***	0.047	4.318	0.000	0.111	0.296
left full-time education age 21+	0.378***	0.070	5.414	0.000	0.241	0.515
owns financial assets	0.221***	0.029	7.528	0.000	0.164	0.279
household has car	0.127***	0.037	3.473	0.001	0.055	0.199
cohabitee	0.080	0.100	0.802	0.423	-0.116	0.275
single	-0.031	0.056	-0.545	0.586	-0.141	0.080
widowed	0.190***	0.048	3.981	0.000	0.096	0.283
separated	0.148	0.122	1.210	0.227	-0.092	0.387
divorced	0.139**	0.061	2.288	0.022	0.020	0.259
homeowner above Band E	0.588***	0.060	9.873	0.000	0.471	0.705
homeowner Band E	0.387***	0.054	7.215	0.000	0.282	0.492
homeowner Band D	0.302***	0.048	6.325	0.000	0.209	0.396
homeowner Band C	0.218***	0.044	4.931	0.000	0.131	0.305
homeowner Band B	0.230***	0.047	4.847	0.000	0.137	0.323
homeowner Band A	0.218***	0.047	4.619	0.000	0.126	0.311
health/disability limits activities	-0.028	0.028	-1.015	0.310	-0.083	0.026
retired age 50–54	0.233***	0.062	3.763	0.000	0.111	0.354
retired age 55–58	0.177***	0.044	3.992	0.000	0.090	0.264
retired age 59–60	0.154***	0.039	3.917	0.000	0.077	0.231
retired age 61–63	0.096***	0.035	2.741	0.006	0.027	0.165
constant	4.685***	0.144	32.570	0.000	4.403	4.968

Notes to Appendix Tables A1 to A10

In all regressions the base case is a man:

- of white ethnic origin
- who stopped work at age 64 or later
- who left full-time education at the age of 15 or earlier
- who has no health problems limiting daily activity
- who is a non-homeowner

- who has no financial assets
- who lives in a household with no car
- who is married

*** indicates significant at 1% level

** indicates significant at 5% level

Table A2: Log of individual income, men aged 70-74

Source	SS	df	MS	Number of obs	= 940
Model	92.470	23	4.020	F(23,973)	= 24.42
Residual	150.822	916	0.165	Prob > F	= 0.000
Total	243.292	939	0.259	R-squared	= 0.380
				Adj R-squared	= 0.365

		Standard		[95% confiden		
	Coefficient	error	t	P> <i>t</i>	inter	val]
proportion of years worked	-0.264	0.182	-1.448	0.148	-0.622	0.094
ethnic minority origin	-0.322***	0.099	-3.250	0.001	-0.516	-0.127
left full-time education age 16	0.012	0.050	0.240	0.811	-0.086	0.110
left full-time education age 17-20	0.164***	0.055	2.998	0.003	0.057	0.272
left full-time education age 21+	0.224***	0.083	2.704	0.007	0.061	0.386
owns financial assets	0.214***	0.032	6.647	0.000	0.150	0.277
household has car	0.144***	0.034	4.235	0.000	0.077	0.211
cohabitee	0.166	0.156	1.064	0.288	-0.140	0.473
single	0.182***	0.063	2.871	0.004	0.058	0.306
widowed	0.126***	0.040	3.182	0.002	0.048	0.204
separated	0.502***	0.188	2.677	0.008	0.134	0.870
divorced	0.075	0.075	0.996	0.319	-0.073	0.223
homeowner above Band E	0.768***	0.066	11.621	0.000	0.638	0.898
homeowner Band E	0.399***	0.059	6.802	0.000	0.284	0.513
homeowner Band D	0.263***	0.045	5.809	0.000	0.174	0.352
homeowner Band C	0.243***	0.045	5.369	0.000	0.154	0.332
homeowner Band B	0.230***	0.046	4.990	0.000	0.140	0.321
homeowner Band A	0.192***	0.051	3.760	0.000	0.092	0.293
health/disability limits activities	0.058**	0.028	2.068	0.039	0.003	0.114
retired age 50–54	0.114	0.083	1.379	0.168	-0.048	0.277
retired age 55–58	0.050	0.048	1.051	0.293	-0.043	0.144
retired age 59–60	0.088**	0.042	2.117	0.035	0.006	0.170
retired age 61–63	-0.034	0.037	-0.942	0.347	-0.106	0.037
constant	5.081***	0.183	27.703	0.000	4.721	5.441

Root MSE = 0.406

Source	SS	df	MS	Number of obs	= (689
Model	62.943	23	2.737	F(23,973)	=	15.6
Residual	116.683	665	0.175	Prob > F	=	0.000
Total	179.627	688	0.261	R-squared	=	0.350
				Adj R-squared	=	0.328

Root MSE = 0.419

Table A3: Log of individual income, men aged 75-79

		[95% confidence					
	Coefficient	error	t	P> <i>t</i>	interval]		
proportion of years worked	-0.072	0.214	-0.338	0.735	-0.493	0.348	
ethnic minority origin	-0.322***	0.123	-2.622	0.009	-0.563	-0.081	
left full-time education age 16	0.123**	0.053	2.322	0.021	0.019	0.227	
left full-time education age 17-20	0.296***	0.065	4.541	0.000	0.168	0.424	
left full-time education age 21+	0.131	0.125	1.051	0.294	-0.114	0.377	
owns financial assets	0.200***	0.041	4.827	0.000	0.119	0.281	
household has car	0.105***	0.040	2.644	0.008	0.027	0.182	
cohabitee	-0.015	0.160	-0.092	0.927	-0.330	0.300	
single	0.170**	0.077	2.221	0.027	0.020	0.320	
widowed	0.120***	0.040	2.993	0.003	0.041	0.199	
separated	0.722	0.422	1.712	0.087	-0.106	1.551	
divorced	0.207**	0.096	2.152	0.032	0.018	0.396	
homeowner above Band E	0.593***	0.079	7.537	0.000	0.439	0.748	
homeowner Band E	0.378***	0.071	5.315	0.000	0.239	0.518	
homeowner Band D	0.361***	0.057	6.322	0.000	0.249	0.473	
homeowner Band C	0.166***	0.054	3.086	0.002	0.060	0.271	
homeowner Band B	0.139**	0.056	2.502	0.013	0.030	0.248	
homeowner Band A	0.172***	0.063	2.737	0.006	0.049	0.295	
health/disability limits activities	0.115***	0.033	3.487	0.001	0.050	0.180	
retired age 50–54	0.045	0.119	0.381	0.703	-0.188	0.278	
retired age 55–58	0.149**	0.073	2.046	0.041	0.006	0.292	
retired age 59–60	0.126**	0.055	2.312	0.021	0.019	0.233	
retired age 61–63	0.090**	0.040	2.228	0.026	0.011	0.169	
constant	4.846***	0.216	22.480	0.000	4.423	5.269	

Table A4: Log of individual income, men aged 80-84

Source	SS	df	MS	Number of obs	= 4	00	
Model	35.466	23	1.542	F(23,973)	=	8.93	
Residual	64.959	376	0.173	Prob > F	=	0.000	
Total	100.425	399	0.252	R-squared	=	0.353	
				Adj R-squared	=	0.314	

Root MSE = 0.416

		[95% confidence				
	Coefficient	error	t	P> <i>t</i>	interval]	
proportion of years worked	-0.149	0.225	-0.660	0.510	-0.592	0.295
ethnic minority origin	-0.202	0.225	-0.898	0.370	-0.644	0.240
left full-time education age 16	0.038	0.071	0.533	0.594	-0.102	0.178
left full-time education age 17-20	0.193**	0.086	2.236	0.026	0.023	0.363
left full-time education age 21+	0.359***	0.109	3.299	0.001	0.145	0.573
owns financial assets	0.232***	0.054	4.263	0.000	0.125	0.339
household has car	0.064	0.047	1.360	0.174	-0.029	0.158
cohabitee	0.483**	0.244	1.983	0.048	0.004	0.962
single	0.110	0.118	0.932	0.352	-0.122	0.341
widowed	0.195***	0.047	4.188	0.000	0.104	0.287
separated	0.216	0.220	0.982	0.327	-0.217	0.650
divorced	0.070	0.147	0.472	0.637	-0.220	0.359
homeowner above Band E	0.333***	0.103	3.217	0.001	0.129	0.536
homeowner Band E	0.505***	0.089	5.653	0.000	0.329	0.680
homeowner Band D	0.251***	0.071	3.552	0.000	0.112	0.390
homeowner Band C	0.158**	0.067	2.367	0.018	0.027	0.289
homeowner Band B	0.055	0.074	0.744	0.458	-0.091	0.202
homeowner Band A	-0.033	0.084	-0.398	0.691	-0.199	0.132
health/disability limits activities	0.071	0.044	1.624	0.105	-0.015	0.158
retired age 50–54	0.099	0.171	0.581	0.562	-0.236	0.435
retired age 55–58	-0.022	0.114	-0.194	0.846	-0.246	0.202
retired age 59–60	0.207***	0.079	2.627	0.009	0.052	0.362
retired age 61–63	0.044	0.061	0.710	0.478	-0.077	0.164
constant	5.010***	0.228	21.933	0.000	4.561	5.459

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Source	SS	df	MS	Number of obs	=2	241	
Model	21.225	23	0.923	F(23,973)	=	5.64	
Residual	35.536	217	0.164	Prob > F	=	0.000	
Total	56.761	240	0.237	R-squared	=	0.374	
				Adj R-squared	=	0.308	

Table A5: Log of individual income, men aged 85+

	Standard				[95% confidence	
	Coefficient	error	t	P > <i>t</i> 0.543	interv	val]
proportion of years worked	-0.227	0.372	-0.609		-0.961	0.507
ethnic minority origin	0.117	0.409	0.287	0.774	-0.689	0.923
left full-time education age 16	0.466***	0.095	4.888	0.000	0.278	0.654
left full-time education age 17-20	0.127	0.111	1.143	0.254	-0.092	0.345
left full-time education age 21+	0.501***	0.140	3.567	0.000	0.224	0.777
owns financial assets	0.169**	0.071	2.385	0.018	0.029	0.308
household has car	0.051	0.063	0.804	0.422	-0.074	0.176
cohabitee	0.010	0.250	0.040	0.968	-0.482	0.502
single	0.310	0.210	1.475	0.142	-0.104	0.724
widowed	0.234***	0.056	4.175	0.000	0.124	0.345
separated	0.040	0.221	0.183	0.855	-0.395	0.476
divorced	-0.184	0.243	-0.759	0.449	-0.663	0.294
homeowner above Band E	0.531***	0.136	3.892	0.000	0.262	0.800
homeowner Band E	0.135	0.116	1.166	0.245	-0.093	0.364
homeowner Band D	0.175**	0.083	2.122	0.035	0.013	0.338
homeowner Band C	0.044	0.082	0.544	0.587	-0.117	0.205
homeowner Band B	0.094	0.099	0.950	0.343	-0.101	0.289
homeowner Band A	0.121	0.138	0.880	0.380	-0.150	0.392
health/disability limits activities	0.087	0.057	1.534	0.127	-0.025	0.200
retired age 50–54	0.302	0.311	0.970	0.333	-0.311	0.914
retired age 55–58	0.430**	0.196	2.187	0.030	0.043	0.817
retired age 59–60	0.003	0.126	0.026	0.979	-0.244	0.251
retired age 61-63	0.144	0.081	1.773	0.078	-0.016	0.304
constant	5.104***	0.367	13.902	0.000	4.380	5.827

Root MSE = 0.405

Table Ao.	Log of equiv	anseu nei	i nousenoiu income	after nousing costs, inc	in ageu 05–05	
Source	SS	df	MS	Number of obs	= 997	
Model	110.876	23	4.821	F(23,973)	= 25.23	
Residual	185.883	973	0.191	Prob > F	= 0.000	
Total	296.759	996	0.298	R-squared	= 0.374	
				Adj R-squared	= 0.359	

Root MSE = 0.437

Table A6: Log of equivalised net household income after housing costs, men aged 65–69

	Standard				[95% confidence		
	Coefficient	error	t	P> <i>t</i>	interval]		
proportion of years worked	-0.227	0.372	-0.609	0.543	-0.961	0.507	
ethnic minority origin	0.117	0.409	0.287	0.774	-0.689	0.923	
left full-time education age 16	0.466***	0.095	4.888	0.000	0.278	0.654	
left full-time education age 17-20	0.127	0.111	1.143	0.254	-0.092	0.345	
left full-time education age 21+	0.501***	0.140	3.567	0.000	0.224	0.777	
owns financial assets	0.169**	0.071	2.385	0.018	0.029	0.308	
household has car	0.051	0.063	0.804	0.422	-0.074	0.176	
cohabitee	0.010	0.250	0.040	0.968	-0.482	0.502	
single	0.310	0.210	1.475	0.142	-0.104	0.724	
widowed	0.234***	0.056	4.175	0.000	0.124	0.345	
separated	0.040	0.221	0.183	0.855	-0.395	0.476	
divorced	-0.184	0.243	-0.759	0.449	-0.663	0.294	
homeowner above Band E	0.531***	0.136	3.892	0.000	0.262	0.800	
homeowner Band E	0.135	0.116	1.166	0.245	-0.093	0.364	
homeowner Band D	0.175**	0.083	2.122	0.035	0.013	0.338	
homeowner Band C	0.044	0.082	0.544	0.587	-0.117	0.205	
homeowner Band B	0.094	0.099	0.950	0.343	-0.101	0.289	
homeowner Band A	0.121	0.138	0.880	0.380	-0.150	0.392	
health/disability limits activities	0.087	0.057	1.534	0.127	-0.025	0.200	
retired age 50–54	0.302	0.311	0.970	0.333	-0.311	0.914	
retired age 55–58	0.430**	0.196	2.187	0.030	0.043	0.817	
retired age 59–60	0.003	0.126	0.026	0.979	-0.244	0.251	
retired age 61–63	0.144	0.081	1.773	0.078	-0.016	0.304	
constant	5.104***	0.367	13.902	0.000	4.380	5.827	

	5			5	5
Source	SS	df	MS	Number of obs	= 940
Model	90.591	23	3.939	F(23,973)	= 17.31
Residual	208.437	916	0.228	Prob > F	= 0.000
Total	299.028	939	0.318	R–squared	= 0.303
				Adj R-squared	= 0.285
				Root MSE	= 0.477

Table A7: Log of equivalised net household income after housing costs, men aged 70-74

	Standard				[95% confidence		
	Coefficient	error	t	P> <i>t</i>	inter	val]	
proportion of years worked	0.049	0.214	0.228	0.820	-0.372	0.470	
ethnic minority origin	-0.605***	0.116	-5.202	0.000	-0.833	-0.377	
left full-time education age 16	0.104	0.058	1.777	0.076	-0.011	0.219	
left full-time education age 17-20	0.180***	0.064	2.792	0.005	0.053	0.307	
left full-time education age 21+	0.400***	0.097	4.111	0.000	0.209	0.591	
owns financial assets	0.244***	0.038	6.467	0.000	0.170	0.318	
household has car	0.108***	0.040	2.692	0.007	0.029	0.187	
cohabitee	-0.205	0.184	-1.117	0.264	-0.566	0.155	
single	0.021	0.074	0.288	0.774	-0.125	0.167	
widowed	0.019	0.047	0.403	0.687	-0.073	0.110	
separated	-0.569***	0.221	-2.578	0.010	-1.002	-0.136	
divorced	-0.011	0.089	-0.128	0.898	-0.185	0.163	
homeowner above Band E	0.601***	0.078	7.741	0.000	0.449	0.754	
homeowner Band E	0.170**	0.069	2.472	0.014	0.035	0.305	
homeowner Band D	0.086	0.053	1.621	0.105	-0.018	0.191	
homeowner Band C	0.001	0.053	0.020	0.984	-0.103	0.106	
homeowner Band B	-0.017	0.054	-0.306	0.760	-0.123	0.090	
homeowner Band A	-0.087	0.060	-1.445	0.149	-0.205	0.031	
health/disability limits activities	0.060	0.033	1.812	0.070	-0.005	0.125	
retired age 50–54	0.237**	0.098	2.431	0.015	0.046	0.428	
retired age 55–58	0.099	0.056	1.763	0.078	-0.011	0.209	
retired age 59–60	0.160***	0.049	3.263	0.001	0.064	0.257	
retired age 61-63	0.042	0.043	0.969	0.333	-0.043	0.126	
constant	4.678***	0.216	21.695	0.000	4.254	5.101	

TAULE NO. I	Log of Equiva	anseu ne	t nousenoid incom	e after nousing costs, me	n au	yeu 75-79	
Source	SS	df	MS	Number of obs	=	689	
Model	50.240	23	2.184	F(23,973)	=	11.44	
Residual	126.922	665	0.191	Prob > F	=	0.000	
Total	177.161	688	0.258	R-squared	=	0.284	
				Adj R-squared	=	0.259	
				Root MSE	=	0.437	

Table A8: Log of equivalised net household income after housing costs, men aged 75–79

	Standard				[95% confidence		
	Coefficient	error	t	P> <i>t</i>	interval]		
proportion of years worked	-0.112	0.223	-0.502	0.616	-0.550	0.326	
ethnic minority origin	-0.414***	0.128	-3.232	0.001	-0.665	-0.162	
left full-time education age 16	0.259***	0.055	4.681	0.000	0.150	0.368	
left full-time education age 17-20	0.289***	0.068	4.256	0.000	0.156	0.423	
left full-time education age 21+	0.254	0.130	1.950	0.052	-0.002	0.511	
owns financial assets	0.239***	0.043	5.532	0.000	0.154	0.324	
household has car	0.034	0.041	0.823	0.411	-0.047	0.115	
cohabitee	-0.219	0.167	-1.311	0.190	-0.548	0.109	
single	-0.007	0.080	-0.089	0.929	-0.164	0.150	
widowed	-0.058	0.042	-1.395	0.164	-0.140	0.024	
separated	0.453	0.440	1.030	0.303	-0.411	1.317	
divorced	0.108	0.100	1.073	0.283	-0.089	0.305	
homeowner above Band E	0.314***	0.082	3.828	0.000	0.153	0.475	
homeowner Band E	0.080	0.074	1.083	0.279	-0.065	0.226	
homeowner Band D	0.104	0.060	1.745	0.082	-0.013	0.221	
homeowner Band C	-0.081	0.056	-1.451	0.147	-0.191	0.029	
homeowner Band B	-0.121**	0.058	-2.093	0.037	-0.235	-0.008	
homeowner Band A	-0.137**	0.066	-2.094	0.037	-0.266	-0.009	
health/disability limits activities	0.071**	0.034	2.063	0.040	0.003	0.139	
retired age 50–54	0.039	0.124	0.319	0.750	-0.203	0.282	
retired age 55–58	0.107	0.076	1.409	0.159	-0.042	0.256	
retired age 59–60	0.198***	0.057	3.472	0.001	0.086	0.310	
retired age 61–63	0.107**	0.042	2.542	0.011	0.024	0.189	
constant	4.847***	0.225	21.559	0.000	4.405	5.288	

							_
Source	SS	df	MS	Number of obs	= 4	-00	
Model	37.156	23	1.615	F(23,973)	=	9.5	
Residual	63.927	376	0.170	Prob > F	=	0.000	
Total	101.083	399	0.253	R-squared	=	0.368	
				Adj R-squared	=	0.329	
				Root MSE	=	0.412	

Table A9: Log of equivalised net household income after housing costs, men aged 80-84

		Standard		[95% confider		
	Coefficient	error	t	P> <i>t</i>	inter	val]
proportion of years worked	-0.095	0.224	-0.423	0.673	-0.534	0.345
ethnic minority origin	-0.473**	0.223	-2.121	0.035	-0.912	-0.034
left full-time education age 16	0.142**	0.070	2.011	0.045	0.003	0.280
left full-time education age 17-20	0.369***	0.086	4.307	0.000	0.201	0.538
left full-time education age 21+	0.600***	0.108	5.558	0.000	0.388	0.813
owns financial assets	0.207***	0.054	3.834	0.000	0.101	0.313
household has car	0.021	0.047	0.449	0.654	-0.071	0.113
cohabitee	0.188	0.242	0.779	0.437	-0.287	0.664
single	0.010	0.117	0.085	0.933	-0.220	0.239
widowed	0.014	0.046	0.295	0.768	-0.077	0.105
separated	0.122	0.219	0.558	0.577	-0.308	0.552
divorced	0.042	0.146	0.289	0.773	-0.245	0.329
homeowner above Band E	0.039	0.103	0.377	0.706	-0.163	0.240
homeowner Band E	0.268***	0.089	3.022	0.003	0.093	0.442
homeowner Band D	0.001	0.070	0.021	0.983	-0.136	0.139
homeowner Band C	-0.099	0.066	-1.491	0.137	-0.229	0.031
homeowner Band B	-0.216***	0.074	-2.923	0.004	-0.361	-0.071
homeowner Band A	-0.285***	0.083	-3.415	0.001	-0.449	-0.121
health/disability limits activities	0.078	0.044	1.784	0.075	-0.008	0.163
retired age 50–54	0.104	0.169	0.612	0.541	-0.229	0.437
retired age 55–58	-0.124	0.113	-1.098	0.273	-0.346	0.098
retired age 59–60	0.265***	0.078	3.390	0.001	0.111	0.419
retired age 61–63	0.022	0.061	0.364	0.716	-0.098	0.142
constant	4.850***	0.227	21.404	0.000	4.404	5.296

	Log of equi	vaniscu n	et nousenoid meoni	c arter nousing costs, m	icii a	geu 001	
Source	SS	df	MS	Number of obs	= 2	241	
Model	20.567	23	0.894	F(23,973)	=	4.54	
Residual	42.697	217	0.197	Prob > F	=	0.000	
Total	63.264	240	0.264	R-squared	=	0.325	
				Adj R-squared	=	0.254	
				Root MSE	=	0.444	

Table A10: Log of equivalised net household income after housing costs, men aged 85+

			[95% confidence			
	Coefficient	error	t	P> <i>t</i>	interval]	
proportion of years worked	-0.330	0.408	-0.810	0.419	-1.135	0.474
ethnic minority origin	0.106	0.448	0.237	0.813	-0.777	0.990
left full-time education age 16	0.582***	0.104	5.570	0.000	0.376	0.788
left full-time education age 17-20	0.204	0.122	1.675	0.095	-0.036	0.443
left full-time education age 21+	0.714***	0.154	4.641	0.000	0.411	1.017
owns financial assets	0.142	0.077	1.827	0.069	-0.011	0.294
household has car	-0.019	0.069	-0.279	0.780	-0.156	0.117
cohabitee	-0.261	0.274	-0.954	0.341	-0.800	0.278
single	0.114	0.230	0.494	0.622	-0.340	0.567
widowed	-0.006	0.061	-0.104	0.918	-0.128	0.115
separated	-0.113	0.242	-0.468	0.640	-0.590	0.364
divorced	-0.420	0.266	-1.578	0.116	-0.944	0.105
homeowner above Band E	0.215	0.149	1.438	0.152	-0.080	0.510
homeowner Band E	-0.077	0.127	-0.608	0.544	-0.328	0.173
homeowner Band D	-0.043	0.091	-0.471	0.638	-0.221	0.136
homeowner Band C	-0.151	0.090	-1.682	0.094	-0.327	0.026
homeowner Band B	-0.195	0.109	-1.794	0.074	-0.409	0.019
homeownerBand A	-0.212	0.151	-1.408	0.160	-0.510	0.085
health/disability limits activities	0.082	0.063	1.308	0.192	-0.041	0.205
retired age 50–54	0.052	0.341	0.152	0.879	-0.620	0.723
retired age 55–58	0.285	0.215	1.322	0.187	-0.140	0.709
retired age 59-60	0.039	0.138	0.283	0.777	-0.232	0.311
retired age 61-63	0.189**	0.089	2.121	0.035	0.013	0.364
constant	5.140***	0.402	12.772	0.000	4.347	5.933