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RETIREMENT IN THE UK

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In common with other OECD countries, the UK experienced more than two decades of declining labour-market activity among older men from the 1970s to the early 1990s, a trend that has only recently shown signs of being reversed. Retirement decisions are heavily shaped by institutional context and in the UK this has led to there being two distinct groups with very different 'retirement' experiences. At the top of the wealth distribution, early retirement has typically been influenced by private, occupational pensions; at the bottom of the wealth distribution individuals are even more likely to be not working in their 50s, but do not typically define themselves as retired, and draw on income support, or more usually, disability benefits. Policy-makers keen to increase effective retirement ages will need to consider the very different circumstances of these two groups.

I. INTRODUCTION

Over the past few decades, while life expectancy has increased, there has been a near-universal trend across OECD countries towards earlier retirement (see Blöndal and Scarpetta, 1999). Among the explanations for falling activity rates among older workers are the disincentive effects created by social security and pension systems[2] and the relative disadvantage of older workers during a period of industrial re-structuring and technological change,[3] as well as rising levels of wealth which have afforded individuals a longer period in retirement.

The decline in the proportion of life spent working is even more pronounced when one considers that, as retirement ages have fallen, the age at which individuals finish full-time education has typically increased. This is shown in Table 1 for different cohorts in the UK. On average, the 1900 cohort

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[2] See Blöndal and Scarpetta (1999) and Gruber and Wise (2002)
[3] Banks and Casanova (2004) present evidence on the decline of relative real wages of older workers (particularly the low-skilled) in the UK.

Table 1
Education, Retirement, and Life Expectancy by Cohort in the UK

Cohort born in	Mean age left school	Median retirement age	Life expectancy if reach age 55	Proportion of life spent in labour market (p)	p if retirement age stays at 61	Retirement age required for $p = 0.59$
1900	14.1	65	73.5	0.69	—	—
1910	14.6	65	74.0	0.68	—	—
1920	14.8	63	74.5	0.65	—	—
1930	15.2	62	75.5	0.62	—	—
1935	15.9	61	76.7	0.59	—	—
1940	16.1	—	77.5	—	0.58	61.8
1950	16.8	—	79.5	—	0.56	63.7
1960	17.2	—	80.9	—	0.54	64.9
1970	17.7	—	81.7	—	0.53	65.9
1980	17.8	—	82.2	—	0.53	66.3

Note: Cohorts are 5-year cohorts beginning with the listed year (so 1900 refers to the cohort 1900–4 etc.)
Source: Age left school and retirement age calculated using data from the Family Expenditure Survey. Data on life-expectancy from ONS Population Trends (2004).

spent 69 per cent of their total life in the labour market, compared to 59 per cent for the 1935 cohort.[4] If retirement ages for subsequent cohorts stay at their current level, then this proportion would fall to 53 per cent for the cohort born in 1980.

The current policy debate in the UK, as in many other countries, is about how to raise the effective age of retirement (the age at which people leave the labour market) and whether to raise the age at which people become eligible for a pension from the state. In some countries, there is pressure for an increase in the state pension age in response to large projected increases in public spending on pensions.[5] In the UK, state spending on pensions is projected to grow by much less than in other countries;[6] but an increase in the state pension age has been suggested as one way of financing an increase in the state pension's generosity.

A desire to raise the effective retirement age is motivated by a wider concern about the economic dependency ratio, i.e. the relative numbers of economically productive to economically dependent individuals.[7] This, rather than population aging *per se*, is what matters for the financial solvency of pensions and other welfare systems (as well as being a key determinant of economic growth[8]).

[4] These calculations are crude for a number of reasons mainly to do with the need to aggregate different types of individual and population data to the cohort level in order to make the comparisons. Key issues are that they refer to the proportion of life in the labour market for those actually living to retirement age (more of an issue for the earlier cohorts than the later ones) and that they do not strictly decompose owing to the use of mean school leaving age and median retirement age.

[5] Several countries (including the UK, Austria, Hungary, and Switzerland) are introducing increases in the state pension age for women, to bring it in line with that of men. The pension age for men and women was raised from 60 to 65 in New Zealand between 1992 and 2001, having been reduced from 65 in 1977. Japan is raising its pension age from 60 to 65 between 2013 and 2025. The USA is raising its standard pension age from 65 to 67 between 2000 and 2022. Italy is raising the minimum number of years' pensionable service to 39 years in 2006 and to 40 years in 2009. Finland and Denmark are both reducing the minimum pension age, but tightening up eligibility for early retirement, with the overall aim of increasing the effective retirement age.

[6] The decision to link the basic state pension to prices, not earnings, from 1981 and successive reforms to the second-tier state pension have reduced the generosity of the state pension relative to earnings. Since 1999, there has been increased spending on means-tested benefits for pensioners.

[7] Or, more precisely, the ratio of the total production of the active to the total costs of support of the inactive.

[8] The OECD recently concluded that, unless there is a substantial increase in labour-force participation, especially among older workers, available labour resources will remain broadly stagnant over the next 50 years, implying labour shortages and a pronounced slow-down in economic growth.

With an increase in labour-force participation among older workers, available labour resources will continue to grow, even with an aging population.

And, while raising the age at which people become eligible to receive a pension from the state is likely to have an impact on effective retirement ages, it may be neither necessary—if there are other barriers to economic activity of older workers—nor sufficient—if people rely on private pensions or other, non-pension, state benefits to finance their early retirement—for such a change to occur. Understanding retirement, and the nature and determinants of economic activity at older ages more broadly, will therefore be one of the keys to countries' transitions to their new socio-demographic and economic equilibria in the face of population aging.

In this paper we consider the nature and timing of retirement in the UK and discuss how we might expect future trends to evolve. Like other OECD countries, the UK experienced more than two decades of declining labour-market activity among older men in the 1970s, 1980s, and early 1990s. While employment rates among older women remained fairly constant, this contrasted with an increase in participation at younger ages.[9] Several measures have already been introduced in an attempt to reverse this trend, including tighter eligibility for disability benefits (from 1995), in-work benefits and training incentives targeted at the 50+ unemployed (from 2002), and the abolition of mandatory early retirement and age discrimination (from October 2006). An increase in the state pension age from 65 to 68 has recently been proposed by the independent Pensions Commission.[10] Recent evidence suggests that labour-market activity rates are rising, perhaps in response to some of these measures, and/or reflecting the relatively strong performance of the economy (Banks and Blundell, 2005).

Retirement decisions are the outcome of individual choice and institutional context. In the UK, the institutional context is characterized by a high level of private pension provision, compared to many other countries. For recent cohorts of retirees, this has typically meant employer-provided defined-benefit (DB) schemes (occupational pensions), which have often facilitated and encouraged early retirement. Future cohorts of retirees will increasingly be reliant on individual defined-contribution (DC) pensions (personal or stakeholder pensions) and, for them, the opportunities and incentives to retire early may be quite different. In the UK, most people with a private (DB or DC) pension choose to opt out of the second, earnings-related tier of the state pension system; for them, the state pension is a fairly minimal, flat-rate pension and the incentives in their private pension are likely to matter far more for their retirement. The UK may, therefore, offer important insights into how labour-market outcomes may turn out under systems with more private and individual pension provision.

What emerges from the analysis is that, among current retirees, there are distinct groups with very different retirement experiences (see Figure 1). At the top of the wealth distribution, individuals retire early, typically drawing an income from an occupational pension before age 65; at the bottom of the wealth distribution individuals are even more likely to be not working in their 50s, yet typically do not define themselves as retired and are supported by income support or, more usually, disability benefits. Policy-makers keen to raise effective retirement ages will need to keep in mind the very different circumstances and needs of these groups.

The plan of the paper is as follows. The next section discusses what retirement is, and looks at evidence on the nature of individuals' transitions into retirement, including when people typically retire, their employment prior to retirement, and whether there is evidence of partial or gradual retirement. Section III focuses on the influence of pensions on retirement, and section IV discusses mandatory retirement and ill health. Section V concludes.

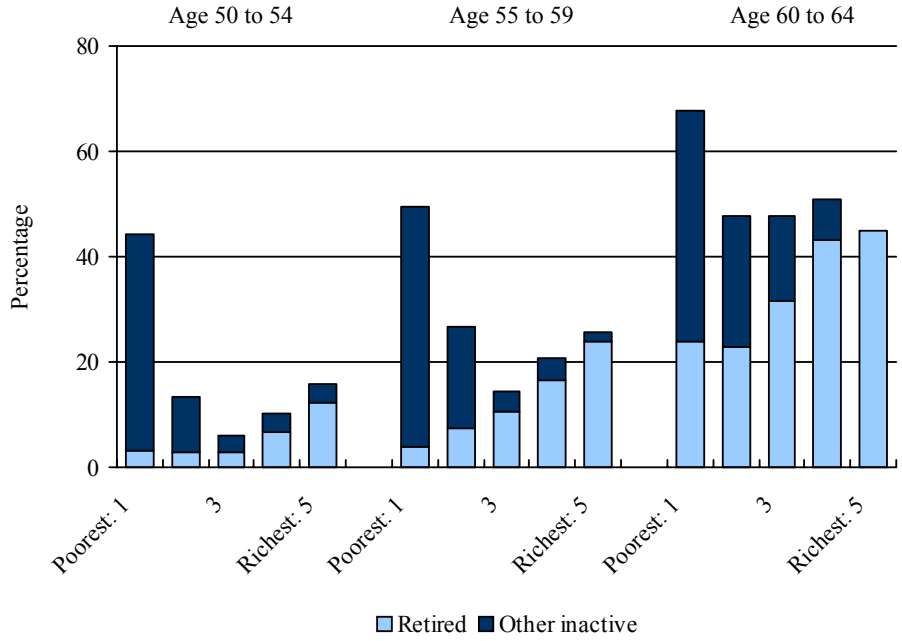
II. WHAT IS RETIREMENT?

Any discussion of retirement is complicated by the problem of defining when retirement occurs, and the prior problem of defining what retirement is. Broadly,

[9] See Tanner (1998) and Disney (1999)

[10] This was an independent body set up to review pensions arrangements in the UK.

Figure 1
Labour-market Inactivity of Older Men, by Age Band and Quintile of Financial Wealth



Sources: Banks and Casanova (2004); calculations from English Longitudinal Study of Ageing (ELSA), Wave 1 (2002).

the concept of retirement may embody a number of different elements, to differing degrees:[11]

- complete and permanent withdrawal from employment;
- receipt of income from a state or private pension; and
- a state of mind, i.e. the individual perceives themselves to be retired.

A purely subjective definition of retirement has the potential drawback that being retired may mean different things to different people and, more importantly, to different groups of the population. But, understanding an individual's expectations about their current and future employment status is likely to be important for understanding their life-cycle decisions, i.e. their current and future consumption and savings behaviour. From the perspective of the life-cycle model of consumption and leisure, individuals' expectations about their future labour-market participation and future income will affect their current consumption behaviour, and individuals' preferences for future consumption will affect their desired future labour-market participation (see, for example, Heckman, 1974).

The concept of retirement adopted by most economists modelling retirement[12] typically has the following characteristics:

- it is synonymous with drawing a pension;
- it is a sudden, rather than a gradual, process and encompasses the decision whether to work at all, rather than the decision of how many hours to work;
- it is an absorbing (i.e. permanent) state;
- it is an individual decision rather than one made jointly with other household members; and

[11] For further discussion of what retirement is, see Fields and Mitchell (1984), Lazear (1986), and Lumsdaine and Mitchell (1999).
[12] Of course, there are exceptions, including Rust and Phelan (1997), who model the labour-force participation separately from the decision to draw a pension; Berkovec and Stern (1991) who allow retirement to be gradual; and Gustman and Steinmeier (2004) who model joint retirement decisions. See Lumsdaine and Mitchell (1999) for a review.

Table 2
Average Retirement Ages

	Men		Women	
	Median	Mode (% retiring at that age)	Median	Mode (% retiring at that age)
Age of retirement	62	65 (20.3%)	60	60 (16.9%)
Age of stopping work	61	65 (13.0%)	58	60 (10.2%)
Age of drawing pension	61	65 (27.5%)	60	60 (43.3%)

Source: British Household Panel Survey (BHPS) (1991–2003).

- it is a voluntary choice, albeit made subject to opportunities and constraints presented by employers and pension arrangements.

In this section we examine the extent to which retirement conforms in reality to this stylized version of the models.[13] In many cases, the three events (stopping work, beginning to draw a pension, and considering yourself to have become retired) do not occur simultaneously. Some people consider themselves to be retired, but are still working, others have left work never to return, but do not yet consider themselves retired; some people are drawing a pension but still working; while others are retired, but yet to draw a pension.

Yet, despite the variety of options available, this section shows that the diversity in retirement behaviour, particularly for men, is not as great as it might be. Broadly, there are two distinct groups. In one, individuals retire before age 65, typically drawing an income from an occupational pension; in the other, typically less well-qualified individuals are even more likely to be not working in their 50s, yet typically do not define themselves as retired on exit from the labour market and are supported by income support or, more usually, disability benefits. Within both groups, retirement appears to be fairly sudden rather than gradual and, for the overwhelming majority, an absorbing state. In later sections we consider how these dominant patterns reflect the institutional context

(i) When Do People Retire?

Whichever definition is used—exit from employment, drawing a pension, or self-assessed retirement status—the majority of men, and many women, retire before the state pension age of 65 for men and 60 for women (Table 2). These are the most common retirement ages for men and women, but 66 per cent of men and 55 per cent of women stop working before this age, 62 per cent of men consider themselves to be retired before they reach 65, and 65 per cent of men have started drawing a pension by then.

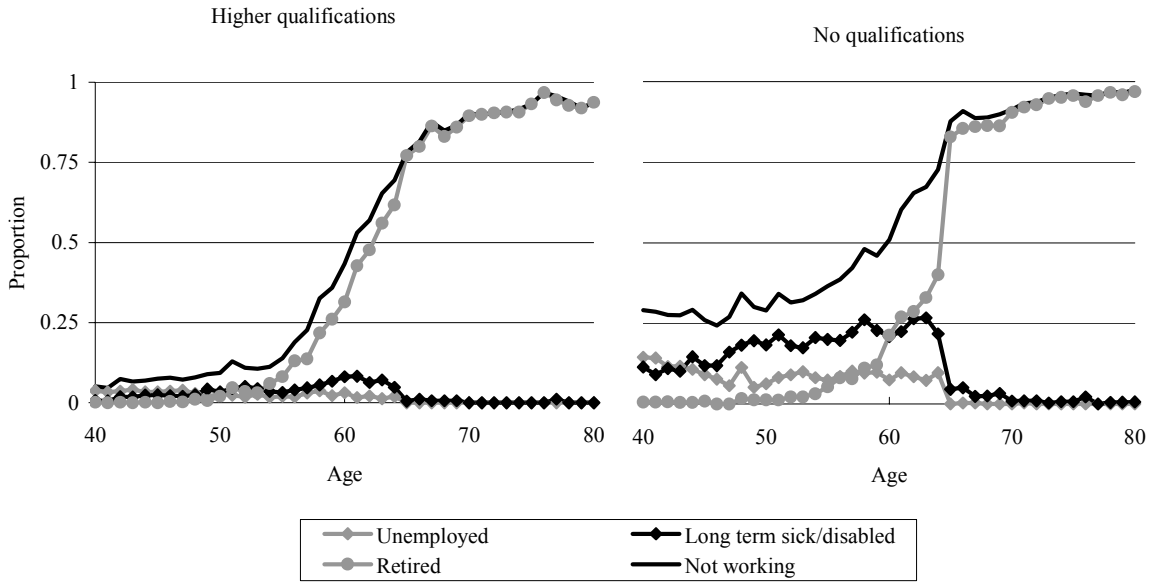
For just over half of men and one-third of women, the three retirement ages coincide. The age at which they stop working is the same as the age at which they start drawing a pension and the age at which they consider themselves to be retired. In other cases, people stop working before they retire, moving into retirement via another non-working state; they also retire before they start to draw a pension, using other early retirement vehicles, particularly disability benefits. Below, we explore these cases further.

(ii) Is Retirement Synonymous with Labour-market Exit?

While the majority of men retire from employment, around 40 per cent of men move into self-assessed retirement from another non-working state, usually unemployment or long-term sick/disabled. This is particularly the case among those with low levels of qualifications, as shown in Figure 2. For those with higher qualifications (33 per cent of the sample), leaving employment is much more likely to be synonymous with self-assessed retirement. For those with no qualifications (34 per cent of the sample), levels of non-employment are quite high, even among people in their 40s. But early retirement is less usual.

[13] The data are taken from the BHPS—full details are given in the Annex.

Figure 2
Employment Status among Male Workers, by Education Level



Source: BHPS (1991–2003).

Instead, those in this group who leave employment are more likely to say that they are unemployed or long-term sick/disabled. For those with no qualifications, there is a far greater transition to self-assessed retirement at age 65.[14] Smith (2006) shows that moving into retirement from another non-employment state is not just a question of terminology, but may indicate earlier than anticipated retirement as a result of ill health and/or redundancy, and is associated with a fall in spending at retirement that suggests a negative shock to wealth through lost earnings and/or additions to pension.

(iii) Is Retirement Synonymous with Drawing a Pension?

Around one-quarter of men stop working before they start to draw a state or private pension. Instead, unemployment benefits, income support, or, more commonly, disability benefits, form alternative early retirement vehicles. Again, there are interesting differences by education—the better qualified are much more likely to draw on a private pension if they retire before 65, while those with no qualifications are more likely to rely on disability benefits. Although around two-thirds of those with no qualifications do eventually receive some income from a private pension, they are much more likely than those with higher qualifications to start drawing it at age 65; the better-educated are more likely to start drawing their pension earlier (see Table 3).

So, stopping work is not synonymous with drawing a pension and it is certainly not synonymous with drawing a state pension. Only 7 per cent of men stop working at 65 and draw only a state pension at this age. The direct effect of any increase in the state pension age on retirement is therefore likely to be fairly small. Of course, the impact may be bigger if there are indirect effects on the normal pension ages in occupational schemes and if the state pension age provides a social norm for people with individual DC pension plans. On the other hand, the continuing availability of alternative early retirement vehicles may reduce the direct impact of raising the state pension age if more people move on to disability benefit or income support.[15]

[14] There is a third group with school qualifications whose behaviour is intermediate between the higher and lower education groups.

[15] If reforms maintained the same expected value of state pension income, the effect of raising the age at which people become eligible to receive it would raise retirement age for those affected only if they are liquidity constrained—but this is likely to be true for most in the affected group.

Table 3
Proportion Receiving Income from Different Sources, by Education (Non-working Only)

	Unemployment benefit/income support		Disability benefits		Private pension income	
	Qualifications		Qualifications		Qualifications	
Age	Higher	None	Higher	None	Higher	None
50–54	0.20	0.40	0.49	0.81	0.54	0.17
55–59	0.09	0.27	0.33	0.72	0.72	0.32
60–64	0.07	0.27	0.28	0.61	0.84	0.51
65–69	0.02	0.10	0.10	0.27	0.90	0.67

Note: Higher qualifications include degrees and teaching, nursing, or other higher qualifications.
Source: BHPS (1991–2003).

(iv) Is Retirement Gradual?

The evidence suggests that, for the great majority of people, retirement is not a gradual process of labour-market withdrawal, but instead involves a fairly abrupt transition from full-time employment to zero hours. In the run-up to retirement, the proportion of men working part-time doubles (this increase is fairly concentrated between 5 and 7 years from stopping work), but part-time workers still comprise no more than 10 per cent of the total.[16]

The cliff-edge nature of retirement is evident from Figure 3, which shows average hours worked per week, with and without overtime, in the run up to retirement.[17] Over the decade before retirement, there is a 7-hour drop in average total weekly hours worked by men. A fall of around 2 hours is attributable to a reduction in overtime hours worked; around 3 hours is due to the increase in part-time work; while, among those who work full-time, the number of hours worked (excluding overtime) falls by a further 2 hours. But, this slight fall in average weekly hours is as nothing compared to the huge drop that occurs when people retire. It is a similar story for women, although the drop is slightly less steep because of the higher proportion who work part-time. There is very little increase in the proportion of women working part-time in the run-up to retirement.

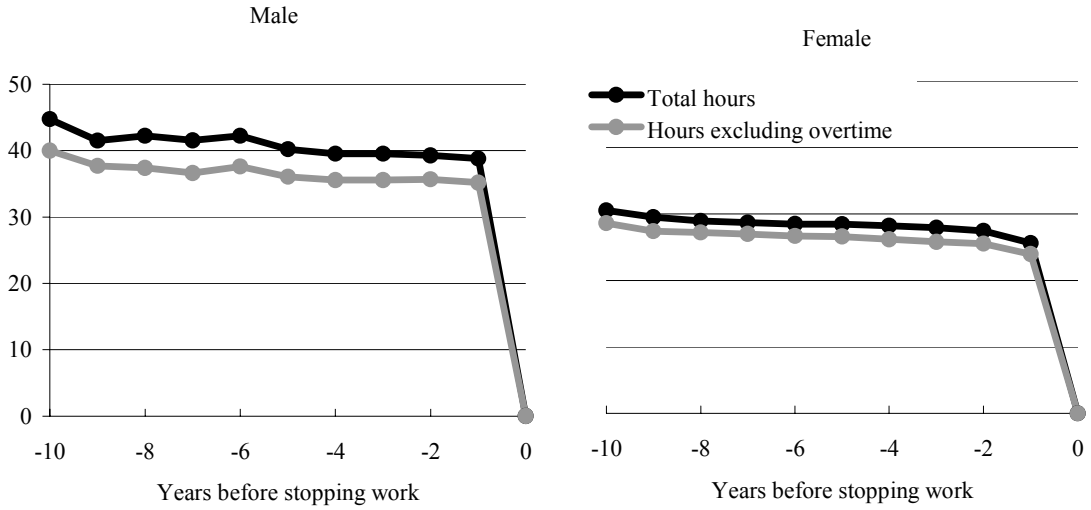
If there are diminishing marginal returns to leisure, there is clearly an issue about whether such a discrete change is optimal from the individual's point of view. There are a number of possible reasons why individuals may not want to reduce their hours gradually, including fixed costs associated with working and/or economies of scale in converting time into utility-producing leisure. They may also face constraints in their choice of the number of hours to work as a result of the fixed costs of employment to the employer—although the higher proportion of women who work part-time suggests that more men could work part-time if they wanted to, although possibly not in the same job or for the same employer. For people with a DB occupational pension, the fact that pension depends on final salary and the current legal restrictions on drawing any pension income while still working for the same employer[18] may also act as barriers to part-time working. We return to these issues in the next section.

(v) Is Retirement Permanent?

The evidence suggests that for most people, retirement is an absorbing state. Looking at the four waves after someone first retires (according to their self-assessed retirement status), 11 per cent of men and 7 per cent of women return to work at some time during this period. This means that more than 90

[16] This evidence is in contrast to the experience in the USA where Ruhm (1990) suggests that partial retirement is common.
[17] Note that this is not a balanced panel—the sample observed 10 years before retirement is not the same as the sample observed 9 years before retirement, and so on.
[18] Due to be abolished in April 2006.

Figure 3
Average Weekly Hours Prior to Retirement



Source: BHPS (1991–2003).

per cent of people who retire, appear to stay retired.[19]

(vi) Is Retirement an Individual or Household Decision?

Retirement has most commonly been analysed as an individual rather than a joint household decision (for exceptions, see Hurd (1990) and Gustman and Steinmeier (2004)) although this is mainly for reasons of analytic and computational simplicity. There are several reasons for thinking that retirement might be determined jointly, however, including: complementarity of leisure, correlated preferences, caring responsibilities in the presence of health shocks, or common income/wealth effects. However, evidence from the BHPS suggests that the simultaneous retirement of husbands and wives is relatively uncommon.[20] In the BHPS sample, for example, around 10 per cent of people stop working at the same time as their partner, and a further 10 per cent retire one year before/after their partner. Looking at the reasons for retiring early (see Table 5), only 3 per cent say that it was in order to retire at the same time as their partner, although 7 per cent retired early because of others' ill health and 8 per cent retired early to spend more time with their family, suggesting that consideration may be given not just to leisure time or caring responsibilities with respect to a partner, but also children, grandchildren, and possibly parents. These factors are much more important for women than for men[21]—accounting for 30 per cent of early retirements for women compared with 7 per cent for men.

III. THE EFFECT OF PENSIONS ON RETIREMENT

A number of studies have shown that the timing and nature of retirement are influenced by state and private pension arrangements, and by the availability of other benefits as alternative early retirement vehicles.[22] Gruber and Wise (2004) bring together individual microeconometric studies of retirement across a number of countries which, despite unique

[19] Again, the US experience appears somewhat different to this. Ruhm (1990) suggests that 25 per cent of people who retire re-enter the labour force.

[20] Although, of course, retirement decisions may be made jointly, even if retirements are not simultaneous.

[21] This is consistent with evidence from the USA showing that women's retirement is affected by their husbands' pension arrangements, but that the same is not true for men (see Coile, 2004).

[22] See, for example, Fields and Mitchell (1984), Blöndal and Scarpetta (1999), and Samwick (1998).

Table 4
Private Pension Coverage, Men and Women (%)

	Men born before 1960	Men born 1960+	Women born before 1960	Women born 1960+
Employer pension	67.9	52.9	45.3	50.3
Personal pension	40.9	39.8	25.1	26.4
Both	27.0	24.2	16.0	18.5
Neither	17.7	31.5	45.6	41.8

Note: Employer pension defined by whether someone is currently a member of their employer's pension scheme and/or is receiving a pension from a former employer. Personal pension is defined by whether someone is contributing to a personal pension and/or is receiving a private pension or annuity.[24]
Source: BHPS (1991–2003).

pension arrangements, cultures and labour-market institutions, share the following common responses to pension incentives:

- a positive wealth effect—the higher someone's total pension wealth (and other financial wealth), the more likely they are to retire;
- a negative accrual effect—the more that someone can increase their total pension wealth by delaying their retirement, the less likely they are to retire;
- the independent effect of eligibility ages—while pension accrual typically turns negative after someone becomes eligible for a pension, providing an incentive to retire, a common finding across a number of countries' studies is that the pure economic incentive effects cannot explain the observed levels of retirement at these ages. One explanation is that eligibility ages may act as social norms, with people viewing them as appropriate or acceptable retirement ages. Another possible explanation is that people may be liquidity constrained and unable to retire before they become eligible to receive pension income, even if it is 'optimal' for them to retire earlier.[23]

In the UK, the majority of people have a private DB (occupational) or DC (personal or stakeholder) pension. As Table 4 shows, occupational (employer) pensions are more common among older male workers; the closure of many employer DB pensions, usually to new entrants, is gradually reducing coverage, particularly among younger workers. The UK, like the USA, is experiencing a shift in private pension provision from DB to DC, although younger male workers are also more likely to have no private pension. For women, changing patterns of employment have meant an increase in private pension coverage (DB and DC). Most of those with a private (occupational or personal) pension are likely to have contracted out of the second, earnings-related state pension scheme. In this case, their state pension is a fairly minimal, flat-rate pension, and the incentives in their private pension are likely to matter far more for their retirement. This section looks at the retirement incentive effects associated with occupational pension schemes and discusses the possible effect on retirement of a shift to private pension schemes.

(i) Retirement and DB Pensions

In the UK, DB occupational pension plans typically 'guarantee'[25] a final pension that depends on length

[23] People cannot typically borrow against future state pension income.

[24] In most cases, the employer's pension will be a DB occupational pension scheme, but some (particularly younger) workers, may have an employer DC pension or even a Group Personal Pension (GPP—a collection of individual DC private pensions organized at the employer level). The fairly high proportion who are observed to have both will include some people who, at some time, have been in an employer's pension and a personal pension, some people who belong to a GPP, and some people who make free-standing additional voluntary contributions to their occupational pension.

[25] There is employment risk and, until 2005 and the introduction of a Pension Protection Fund, prudential risk since there was no payout in the event of the employer going bankrupt.

of service and final salary. By continuing to work, someone with a DB scheme can increase the value of their final pension and lump sum by increasing their years of service and increasing the final salary on which their pension is based.[26] This provides an incentive to stay in work. Beyond the normal retirement age, however (and once they have a full service record, typically 40 years), someone will lose 1 year's pension for each year that they delay retirement. There may be an opportunity to increase the value of the pension by deferring, but deferral rates are typically not actuarially fair. By contrast, many schemes offer generous options for early retirement before the normal pension age, after which accrual is often negative. Beyond the normal or early retirement age, therefore, there is a strong incentive to retire.

DB pensions have a strong effect on the timing of retirement since they provide an incentive for people to work in their 40s and 50s and retire once they have reached the normal or early retirement age in their scheme—see Blundell *et al*. (2002) for evidence. DB pensions have a big role to play in explaining at least some of the fall in retirement ages in the UK. Not only did increased coverage of occupational pensions act as a positive wealth effect, but, in the late 1980s and early 1990s, generous early retirement windows, funded by pension surpluses, were used by many employers to downsize work-forces (see Disney, 1999).

In principle, DB pensions may also affect the gradual/discrete nature of retirement. Because pension depends on final salary, there is a penalty for reducing the number of hours worked in the run-up to drawing your pension, at least if you want to stay in the same job. In fact, the incentive is to increase the number of hours worked in the run-up to retirement in order to achieve the highest possible final salary. Also, until April 2006, there is a legal constraint on someone drawing a pension and continuing to work for the same employer, a further barrier to partial retirement.

In the BHPS data, those who *currently* belong to an employer's pension are less likely to shift into part-time work (for the reasons outlined above), but those who have a pension from a previous employer are actually three times *more* likely to work part-time before retirement than those who have never belonged to an employer's pension scheme. This suggests that earlier pension ages in employer pensions may actually facilitate part-time work, by providing an income to supplement earnings from part-time employment, compared to people who rely on the state pension. Those with no private pension income or other financial wealth are likely to be more constrained in their ability to work part-time before the state pension age since other (non-private) early retirement vehicles, income support and disability benefit, do not allow people to combine part-time work with drawing an income.[27]

(ii) Retirement and DC Pensions

DC schemes offer different incentives for retirement at different ages.[28] Compared to a DB scheme, there are less strongly defined incentives to retire at particular ages in a DC scheme—contracted-out rebates cease at age 65 and annuity rates and mortality rates both vary by age, but none of these will generate such sharp kinks in accrual profiles as are typically found in DB schemes. The main incentive for someone to delay retirement in a DC scheme is the potential increase in the value of their pension fund—through another year's return on the accumulated fund as well as additional contributions from the state (through contracting out) or their employer—and a higher annuity rate since the individual will be 1 year older when they annuitize. However, against this increase must be offset the loss of 1 year's annuity income,[29] the loss from postponing the pension and lump sum,[30] and any risk

[26] This second element matters more for workers with higher levels of education who experience more earnings growth over their lifetimes and in later years.

[27] The over-50s earnings tax credit, introduced in 2003, does provide in-work benefits to anyone working 16 hours a week or more, but is only available to those who have been out of work for more than 6 months.

[28] See Friedberg and Webb (2005) and Smith (2005) for further discussion.

[29] Annuity rates rise with age to compensate for the fact that someone will receive an annuity for one less year. But the value of the annuity (i.e. the expected present discounted value of the annuity stream) typically falls with age for the average annuitant because of selection in the annuity market (i.e. the fact that longer-lived individuals tend to annuitize later)—see Finkelstein and Poterba (2004). Thus, for the average annuitant, there is a penalty to delaying annuitization because the value of the annuity declines with age.

[30] There is a loss because of mortality risk as well as discounting of future income.

in annuity rates and investment returns. With no early/normal retirement ages in a DC scheme, someone can continue to increase the value of their pension, even at older ages—and this reduces the incentive to retire, compared to most DB schemes. But DB schemes typically have a stronger incentive to delay retirement—and stay in work—*until* the early/normal retirement age.

The profile of retirement ages is likely to be smoother under DC schemes than under DB schemes, but it is not obvious whether retirement will be earlier or later on average. Two recent US studies (Munnell *et al*., 2003; Friedberg and Webb, 2005) have found that DC plans have seen people delaying retirement by 1 or 2 years compared to DB schemes. In the UK, a number of factors are likely to be critical, including the following.

- *Early retirement incentives in DB schemes*. Compared to DB schemes that offer very generous early retirement opportunities, DC schemes are likely to result in later retirement. But the same demographic and financial factors that underlie the shift from DB to DC are likely to put pressure on early retirement incentives in DB schemes.

- *Accumulation of funds in DC schemes*. Contribution rates into DC pensions are often lower than those in the DB schemes they replace;[31] if final pension wealth is also lower, then this is likely to mean later retirement. Again, this retirement effect may not be a direct result of the shift from DB to DC, but reflect the underlying demographic and financial factors that are putting pension schemes under pressure.

- *Investment portfolios within DC funds*. The incentive to delay retirement in a DC scheme comes from the fact that someone can continue to increase the value of their pension by getting another year's return on the accumulated fund. Shifting into safer assets in the run-up to retirement will reduce the size of the return—and the incentive to delay retirement. By remaining in equities, the average return is likely to be higher, but changes in the equity prices may have big positive or negative wealth effects on retirement (see Gardner and Orszag, 2003; Coile and Levine, 2004).

As well as possible effects on the timing of retirement, there is also a potential impact on the nature of retirement. DC pensions are more flexible than traditional DB occupational schemes and better able to accommodate a more diverse range of retirement behaviour. Since the majority of accrual at older ages comes from the return on the fund, rather than additional contributions, there is potentially a greater separation between the decision to work and the decision to draw a pension. One implication of this is that there is no longer such a strong penalty for part-time working.

IV. OTHER FACTORS AFFECTING RETIREMENT

(i) Mandatory Retirement

Economic models typically treat retirement as a choice variable, albeit a choice that is made subject to the potential constraints of employment opportunities and pension arrangements. However, there is a range of factors that may force people into early retirement.

One of these is mandatory retirement, still legal in the UK, but due to be abolished before age 65 from October 2006 following a European Commission Directive. In addition, from this date, all employees will have the right to request working beyond age 65, and age discrimination in recruitment, promotion, and training will be banned.

There is considerable evidence on the effect of banning mandatory retirement in the USA where mandatory retirement was prohibited before age 65 from 1967, prohibited before age 70 from 1978, and abolished altogether in 1986. Individual states chose to raise or abolish mandatory retirement ages ahead of the federal government, and differences over time and across states have been used to identify the effect of abolition. A number of studies have found that abolishing mandatory retirement raised employment among older workers—Neumark and Stock (1999), for example, found that

[31] Contribution rates are not directly comparable because of the different way wealth builds up in the two schemes.

abolition raised employment rates among affected older workers by as much as 7 percentage points.

According to Lazear (1979), mandatory retirement has an important role to play as part of a long-term employment contract between employers and employees; it ensures that workers leave the firm when they have been paid the value of their lifetime labour. In Lazear's model, younger workers are paid less than their productivity and part of their remuneration is delayed to encourage retention and effort. The flipside of this is that they are paid more than their marginal product when they are older, and so, to ensure that workers leave the firm, the employer must be able to force retirement once the employee has been paid the full value of their lifetime productivity.[32] According to this argument, the abolition of mandatory retirement could weaken long-term labour contracts, and the efficiency of the firm. However, Neumark and Stock (1999) found that wage profiles were actually steeper following the abolition of mandatory retirement, rather than flatter. They suggested that the abolition of mandatory retirement actually strengthened long-term contracts, since workers would no longer fear being forced to retire before they had been paid their lifetime value.

The desirability of mandatory retirement in the Lazear model assumes two things. One is that employers and employees want long-term employment contracts, something that may be less the case today than it was 25 years ago when Lazear's article was first published. The other is that rising earnings among older workers do not reflect increased productivity.

The issue of the age profile of productivity for older workers is therefore a key one, although it is an area where there is relatively little evidence to date. Meadows (2003) summarizes an interesting collection of findings indicating that:

- there may be positive effects of experience, interpersonal skills, and motivation that counteract the adverse effects of loss of speed, strength, and memory;
- where performance does decline, it is driven by rapid deterioration among a small number of individuals rather than a general decline across the cohort (scores among older workers are more dispersed than those among younger workers).

It is not clear, therefore, that employers require mandatory retirement to force out workers whose productivity is falling relative to their wages. There may, therefore, be little reason not to abolish early mandatory retirement, but the evidence from the UK suggests that the effect on employment is likely to be quite small. First, employment rates among older workers are typically lower than they were in the USA when mandatory retirement was abolished. Second, relatively few people appear to be genuinely constrained by mandatory early retirement ages.[33]

A variety of data from the BHPS and ELSA can be used to produce rough estimates of the number of people who are likely to be affected when mandatory retirement ages below age 65 are abolished from October 2006. Looking backwards, around one-third of the BHPS sample say that they feel that retirement was something that they were forced into, rather than being voluntary, but mandatory early retirement ages do not appear to be the main factor behind forced retirements. Around half the BHPS sample (60 per cent of men) report that they have a fixed retirement age in their job,[34] although for most men this age is 65 or greater and so will not be affected in October 2006. Only around 1.5 per cent of retirements appear to be attributable to mandatory retirement ages below 65.[35]

The second wave of ELSA, collected in 2004, contains questions about mandatory retirement in individuals' jobs, in addition to the data on normal retirement ages in pension schemes. Across the whole working population aged 52 and over in 2004, 40 per cent were employed in jobs in which there

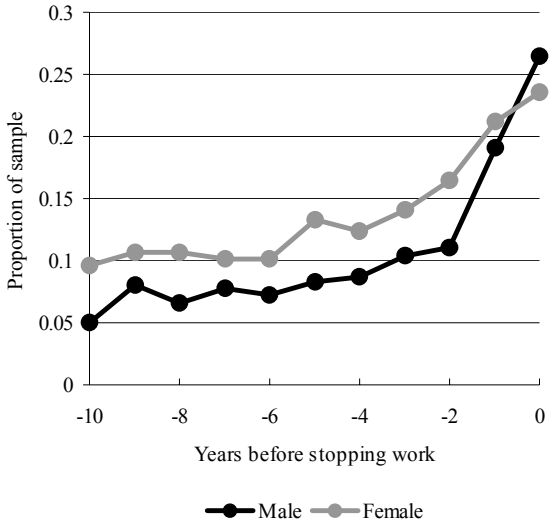
[32] Plus a risk premium.

[33] The abolition of the earnings test for receipt of state pension income was found to have a small positive effect on average hours worked (see Disney and Smith, 2002).

[34] These figures are also likely to overstate the extent to which there are mandatory retirement ages, since people may just be referring to normal retirement ages in their occupational pension schemes.

[35] This evidence is in line with Meadows (2003) who also found a limited number of cases where early retirement could be directly attributable to mandatory early retirement.

Figure 4
Proportion Reporting that Health Limits Daily Activities



Source: BHPS (1991–2003).

was a mandatory retirement age, of which fewer than one in five faced a mandatory retirement age of less than 65. Employees are also asked whether they would like to retire later, were they to be given the opportunity by their employer. Only 22 per cent reported that they would like to work past the mandatory retirement age if given the opportunity, although this fraction is higher (36 per cent) if one excludes those whose mandatory retirement age is 65 or over. Taken together, this suggests that around 2.6 per cent of employees would have retirement constraints removed by the 2006 reform.

This evidence suggests that there may only be a small direct effect of abolishing mandatory early retirement on the employment of older workers. Even without mandatory retirement, employers will still be able to affect when workers leave the firm—most obviously where they offer a DB pension scheme, which can be structured to provide strong incentives to retire at a particular age, but also through greater flexibility in wages, linked perhaps to performance monitoring.[36] However, there may be a greater effect from the wider government initiatives aimed at promoting employment among older workers.[37]

(ii) Ill health

Ill health appears to play a far greater role than mandatory early retirement in explaining why people feel forced into retirement. Table 5 shows that, overall, around one-quarter of the sample gave ill health as the main reason for early retirement; when early retirement was forced, this proportion rose to over half. These numbers are very similar numbers to those found using ELSA data (see Banks and Casanova (2004) who instead distinguish the analysis by whether individuals retired before or at/after the State Pension Age).

Of course, there are a number of problems with these subjective data on reasons for retirement—there may be a degree of post-hoc rationalization, and reported ill health may be linked to receipt of disability and other ill-health benefits. Nevertheless, other evidence supports a link between ill health and retirement. Figure 4 shows that the proportion of people reporting that their health limits their daily activities[38] increases sharply in the years immediately before people are observed stopping work. Interestingly, there is a slight increase in the proportion reporting problems with their health 5 years

[36] Ashenfelter and Card (2002) show quite strong effects of the abolition of mandatory retirement among academics, all of whom have a DC pension scheme.

[37] For example, the Age Positive campaign, http://www.agepositive.gov.uk/

[38] This variable is not present in wave 9 of the BHPS, but a value can be imputed on the basis of individuals' responses in waves 8 and 10. For individuals who report the same values in waves 8 and 10 this is fairly straightforward. Where there is a change between waves 8 and 10, the individual is assigned the value in wave 10 (where available), and otherwise the value in wave 8. It makes no difference to the results if, instead, the individual is assigned the value in wave 8 where available and wave 10 otherwise..

Table 5
Main Reason for Early Retirement, According to whether Retirement was Wanted or Forced (%)

	Men			Women		
	All	Wanted	Forced	All	Wanted	Forced
Own ill health	28.8	9.2	56.3	24.8	11.4	45.5
Others' ill health	4.1	2.3	3.8	10.2	5.1	17.6
Redundancy/compulsory	19.1	10.0	28.2	12.1	5.9	20.6
Financial deal	25.3	42.3	4.7	7.3	11.8	1.2
Spend more time with family	3.4	5.8	0.0	13.2	21.7	1.8
Enjoy life while young & fit	8.7	16.5	0.5	9.7	16.1	1.8
Same time as partner	0.2	0.0	0.5	6.7	11.0	1.2
Other	10.4	13.9	6.0	16.0	17.1	10.3

Source: BHPS (2001).

before stopping work, which coincides with the biggest reduction in average weekly hours and the increase in the proportion of people working part-time. Using BHPS data, Disney *et al*. (2003) instrument the (endogenous and noisy) self-reported health variable by a constructed 'health stock' measure using a set of health indicator variables and personal characteristics. They show that adverse individual shocks to health stocks are a significant predictor of individual retirement behaviour among workers aged 50 and over.

V. CONCLUSIONS

This article has shown how the timing and nature of retirement in the UK have been influenced by the institutional context within which people make retirement decisions.

- The dominant pattern for men is one of voluntary, early retirement on to a private pension straight from (full-time) employment. But this pattern is more characteristic of those with higher qualifications and/or an occupational pension.

- Employer DB schemes have encouraged people to stay in work until the normal/early retirement age, and then to retire early across a fairly narrow range of ages that are typically before the State Pension Age. Increased coverage of occupational pensions and generous early-retirement incentives undoubtedly contributed to the decline in economic activity among older workers. Today, coverage of occupational pensions is falling and with many schemes running deficits, there is far less scope for employers to offer generous early-retirement opportunities.

- Occupational pensions have also imposed constraints on gradual retirement, while people continue to belong to their employers' schemes. The fact that pension depends on final salary, together with legal constraints on working and drawing a pension from the same employer, have restricted people's opportunity to reduce their hours. But, without a private pension (or other financial wealth), the possibility of gradual retirement and part-time work before the state pension age is even less likely.

- Among those with no qualifications and/or occupational pension, very few work until the state pension age and, before this age, use income support and, more commonly, disability benefits as alternative early retirement vehicles. Levels of non-work are high, even among those in their 40s and 50s, and 'retirement' is typically via another non-working state (unemployment or long-term illness/disability).

The analysis has also yielded the following insights, which are likely to be relevant for the government as

it considers possible ways of encouraging later retirement.

- Seven per cent of men stop working at 65 and draw only a state pension at this age. Raising the state pension age may, therefore, have a limited direct effect on retirement, although there may be a wider impact through raising normal and early retirement ages in employer schemes (and changing social norms). On the other hand, there may be 'leakage' through alternative early-retirement vehicles, particularly disability benefits.

- There may be very little case for employers being allowed to set mandatory retirement ages, but abolishing mandatory retirement is also likely to have a limited direct effect on raising employment among older workers and delaying retirement. The evidence suggests that few workers retire early as a direct result of a mandatory retirement age. However, there may be a bigger impact through the government's wider initiative to encourage employment of older workers and the ban on age discrimination.

- The shift from DB to DC schemes will change individuals' retirement incentives. The age profile of retirements is likely to be smoother with DC pensions, but what is less clear is whether, on average, retirement will be earlier or later: DC schemes have less strong incentives to retire after normal/early retirement ages, but less strong incentives to work up to those ages. Key factors affecting the timing of retirement in DC schemes compared to DB schemes include: what happens to opportunities for early retirement in DB schemes; the size of funds that people build up in DC schemes; and their investment strategies (and asset returns) in the run-up to retirement.

- DC pensions will mean more flexibility (allowing more opportunity for gradual retirement and a greater separation of the work decision from the pension decision), but also possibly more uncertainty about pension value, and the timing of retirement.

- The complex and interdependent relationship between health and retirement is not yet fully understood, but health shocks undoubtedly play an important role in forcing people to retire early, possibly before they anticipated or wanted to. Ill health will act as a constraint on raising the effective retirement age and the government faces a challenge in providing support to those who genuinely need some form of disability insurance while restricting its use as an early retirement vehicle.[39]

- Much of the debate in the media has been about raising the state pension age from 65 to 67, but the evidence suggests that the real challenge in extending working lives is to reduce non-employment among (particularly low-qualified) 40–60 year-olds. As the demographic trends continue, and the economy experiences a relative substitution of older (potential) workers for younger workers, understanding the labour demand for such older workers may prove to be as important as understanding the labour supply when it comes to forecasting the way in which economies around the world will adjust to population aging.

[39] The 1995 reforms which replaced invalidity benefit with incapacity benefit reduced the number of claimants above state pension age. The number of total claimants in their 50s continued to grow, although for men the number of claimants remained fairly constant (see Disney and Hawkes, 2003). Econometric analysis by Disney *et al*. (2004) finds no evidence of a reduction in economic inactivity among older workers that can be attributable to the reforms.

ANNEX: DATA FROM THE BHPS

The data used to analyse retirements are taken from waves 1–13 of the BHPS. This panel dataset has been collecting information on the same sample of approximately 10,000 individuals each year since 1991. The analysis uses a selected sub-sample of men and women aged 40–80 in each wave. Since the BHPS covers all ages, it has a smaller number of individuals in the relevant age range for studying retirement than, for example, the US Health and Retirement Survey and the new English Longitudinal Survey of Ageing (ELSA). Nevertheless, there is a reasonable-sized sample of around 1,500 retirements over the entire period and a wide number of variables, including some summary information on spending, well-being, and health, as well as the detailed income information in each wave. One of the main strengths of the BHPS is that, with up to 13 waves of information on each individual, it affords quite detailed analysis of dynamics of retirement transitions. Moreover, in wave 11, a special module collected information on aging and retirement that was designed to be directly comparable to the questions collected in the more specialist ELSA questionnaire.

The three definitions of 'retirement' are as follows.

- *Self-assessed retirement* is defined as the first time someone reports that their employment status is retired. In the BHPS, someone cannot be simultaneously working and retired, since these are mutually exclusive categories. In other British retirement surveys, such as the UK Retirement Survey (see Tanner, 1998) and ELSA (see Banks and Casanova, 2004) retirement status is asked independently of employment status, so that someone can be retired and working.

- *Stopping work* is defined as the last time that someone is observed to leave employment. Clearly, this definition potentially suffers from the fact that the data are right-censored and that someone may re-enter employment at a future date.

- *Pension receipt* is defined as the first period in which someone is observed to receive an income from a pension (from a former employer, a private pension/annuity, an NI pension, or a widow's pension).

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