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THE IMPORTANCE OF INCENTIVES IN
INFLUENCING PRIVATE RETIREMENT SAVING:
KNOWN KNOWNS AND KNOWN UNKNOWNNS

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THE INSTITUTE FOR FISCAL STUDIES
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The importance of incentives in influencing private retirement saving: known knowns and known unknowns

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Institute for Fiscal Studies

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Executive Summary

- We summarise what economic theory predicts about how retirement savings decisions are affected by marginal withdrawal rates created by the tax, tax credit and benefit system, and by the information individuals are provided with. All these predictions vary across individuals with their circumstances.
- In documenting the incentives to save in a private pension provided by the tax, tax credit and benefit system we show that some individuals face a very strong incentive to place funds in a private pension at particular times during their working lives. Those who are basic rate taxpayers who expect to become higher rate taxpayers or move onto the taper of the Working Tax Credit have an incentive to delay making any private pension contributions until that time, while those expecting to move off that taper have an incentive to bring forward future pension contributions.
- When examining retirement saving it is important to consider both saving decisions and also the choice of retirement age. We cite previous evidence that both of these margins have been adjusted by individuals in the light of changed financial incentives. In particular there is evidence that spending by working age individuals was increased in the light of the introduction of the State Earnings-Related Pension Scheme. In addition evidence from West Germany and the United States shows that individuals' retirement ages can be affected substantially by changing financial incentives. There is less evidence of reduced spending by working age individuals in the light of the decision to index the Basic State Pension in line with prices rather than the greater of prices or earnings.
- New evidence from the English Longitudinal Study of Ageing shows that it is low and high wealth individuals who are most likely to be out of the labour market prior to the State Pension Age, though often for very different stated reasons. This suggests that if retirement incomes of those with low wealth are to be increased then increased labour market participation is perhaps a margin for them to adjust.
- Incentives to work and save are potentially affected by two recent UK reforms: the introduction of the two new tax credits (Working Tax Credit and Child Tax Credit)

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and the introduction of the Pension Credit. We present some preliminary evidence on whether the strong incentive to contribute to a private pension provided by the two new tax credits has boosted private pension participation, the results of which are somewhat inconclusive and are worthy of further research.

- Examining the distribution of current pensioner incomes with respect to the incentives induced by the Pension Credit reform we find that many single pensioners will see an unambiguous increase in the incentive to increase their private retirement income – for example through increased saving or later retirement. There are still large numbers of single pensioners who see a reduction in the incentive to increase their retirement income, the majority of whom have private income which they might decide to reduce. Fewer individuals in pensioner couples are eligible for the Pension Credit. Despite this we find that a similar proportion faces a reduced incentive to acquire greater income as we did for single pensioners.
- If the expectations of individuals do not reflect the current rules of the system, then we cannot expect to observe responses fully in line with economic theory that is predicated on full information. Recent evidence from the English Longitudinal Study of Ageing suggests that on average individuals underestimate their longevity and overestimate the private pension income that they can expect to receive. On the other hand, expectations of being in paid employment at older ages are, on average, similar to the current proportions of older individuals who are in paid work and individuals' expectations of remaining in the labour market at older ages appear to square up with the marginal financial incentives to remain in work that are created by different types of pension scheme.

1. Introduction

Significant reforms have been made to the UK pension system over the last three decades. Despite this there is still much policy debate over whether further adjustments are needed, and if so what the nature of any changes should be. Pension reform is also a central topic of debate in many other developed countries. This is because the underlying circumstances are broadly similar – specifically the proportion of the population at older ages is set to increase over the next few decades as a result of both increases in life expectancy and changes in (past) fertility rates.

However the nature of the debate is quite different in the UK than elsewhere. In many countries the ‘problem’ of an ageing population has manifested as a public finance issue with fiscal projections often suggesting that an unreformed system might be financially unsustainable.¹ In the UK the latest Government projections suggest that spending on state transfer payments to pensioners will increase from 6.3% of national income in 2005–06 to 8.0% of national income in 2055–56, with all of the forecast increase occurring in the last 20 years. Despite this the most recent projections by the European Commission suggest that the UK will continue to have a relatively low level of pension spending compared to many other EU countries.²

This apparent financial sustainability of the UK state pension system is a direct result of the reforms introduced in the 1980s and the 1990s.³ However, also as a direct result of these reforms, the combined demographic and spending projections imply that the share of national income paid *per* pensioner will fall to just under 80 percent of its current level by 2056. The Department for Work and Pensions has highlighted the fact that individuals could, in principle at least, offset the relative decline in state support by increasing their own private retirement incomes either by saving more while they are working, or by working longer, or through a combination of both.⁴ This view was reiterated by the Pensions Commission in its first report.⁵ The main area of pension policy debate in the UK has, therefore, been around whether the recent reforms are sufficient to assist individuals in attaining an appropriate level of retirement income or whether future reforms are necessary.

¹ A fuller discussion of these issues for the UK, including historic trends in pension spending and an international comparison is contained in Section 2 of Emmerson, Tetlow and Wakefield (2005).

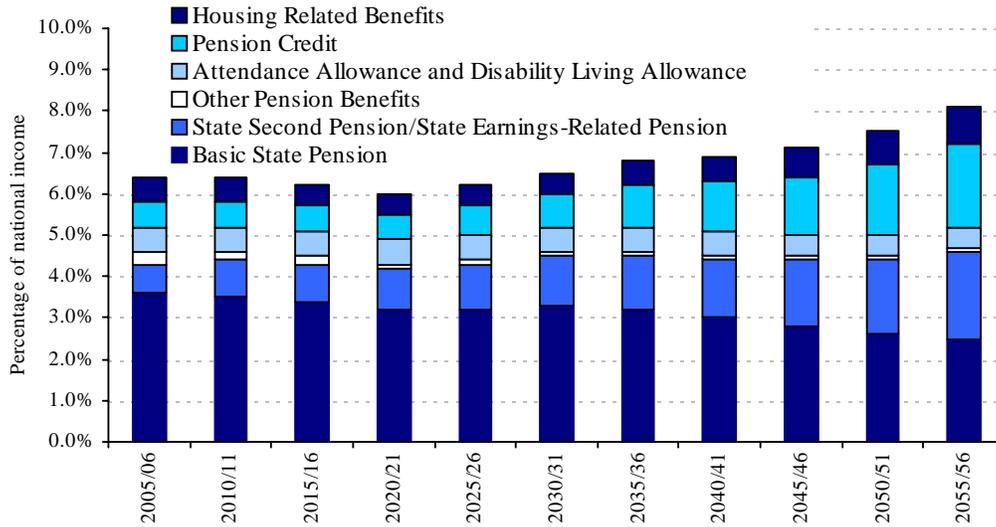
² See Table I.18 and Table 1.19 of European Commission (2005).

³ A recent discussion can be found in Attanasio, *et al*, (2004).

⁴ Source: Department for Work and Pensions (2002).

⁵ Source: Pensions Commission (2004).

Figure 1.1. Projections of transfer payments to pensioners in the UK as a percentage of national income by benefit type.



Notes: 'Other pension benefits' comprise winter fuel payments, over-75s' TV licences, and Christmas bonus; 'Housing-related benefits' comprise housing benefit, council tax benefit in Great Britain, rate rebate in Northern Ireland and discretionary housing payments. Projections are based on those underlying HM Treasury's Long-Term Public Finance Report, 2005.
 Source: Department for Work and Pensions, Benefit Expenditure Tables (http://www.dwp.gov.uk/asd/asd4/long_term.asp).

This paper begins in section 2 by summarising what factors are suggested by economic reasoning as key determinants of individuals' private retirement saving decisions. Then in section 3 we describe the incentives to save for retirement provided by the current tax, tax credit and benefit system as it affects different types of individuals in the UK. We also present some new empirical evidence on the number of individuals in each situation. Section 4 then goes on to discuss what is known about how individuals have tended to respond to similar types of incentives in the past. Again we also present some new empirical evidence relating to how individual behaviour might be responding to the current system and suggest areas where future research could prove fruitful. Section 5 concludes.

2. An economic framework for thinking about (retirement) saving decisions

The conventional economic framework for assessing individuals' intertemporal consumption and savings decisions is known as the 'life cycle' model (see Modigliani and Brumberg, 1954; Ando and Modigliani, 1963; and also Friedman, 1957). The underlying idea of this model is that one can think about the allocation of resources over time in much the same way that one thinks about the allocation of resources within a particular period.⁶ This idea underpins much of the analysis that we carry out and describe within this paper. In subsection 2.1 we describe the model in more detail, although still informally. We also point out where the discussion of later parts of the paper relates to issues that are highlighted, and that can be most clearly thought about, by applying the life-cycle framework. The following two subsections then discuss in abstract terms two specific policy issues. Subsection 2.2 discusses the fact that if individuals do adopt a forward looking outlook when making inter-temporal decisions, then tax rates that vary across the lifetime could have important implications for when individuals choose to save (for retirement). Subsection 2.3 raises the important issue that if individuals are attempting to formulate plans in the way that the life-cycle model hypothesizes, then these plans will reflect the information held by, and understanding of, these individuals. The subsection highlights the fact that when the incentives that individuals face are complicated, responses to the provision of extra information might also be complicated.

2.1 The lifecycle framework and policy issues

The lifecycle model hypothesizes that individuals are forward looking in choosing how much of the resources that they will receive over their lifetime they will consume in each period of their life. An individual's consumption in any period will depend on their current wealth, the amount of income they expect to receive over their remaining lifetime, their valuation of future consumption (including bequests) relative to current consumption, and the interest rate at which they are able to borrow and save. Given diminishing marginal utility of consumption within each period individuals should, according to the theory, allocate their consumption so that the marginal utility of one extra pound spent on consumption is equalised across periods. In terms of implications of the lifecycle model for individuals' saving decisions it implies that individuals will borrow (or dissave) during periods when their income is lower than their desired level of expenditure and save (or repay debts) when their income exceeds their desired level of expenditure.

The basic life-cycle theory suggests that it is expected lifetime income that matters for consumption choices and not current income. Therefore fully anticipated changes in income (e.g. a known fall in earned income at retirement) should not lead to individuals revising their planned consumption levels. Similarly increases in future income that are anticipated should increase consumption in both periods before the income increase occurred and periods after the increase occurred. So, for example, an anticipated increase in the Basic State Pension would, *ceteris paribus*, be expected to increase the

⁶ This description of the idea underpinning the life-cycle model is similar to that of Attanasio and Banks (2001).

consumption of those individuals affected both before and after they reach the State Pension Age.

More generous state pensions leading to higher levels of consumption by working age individuals (and therefore lower levels of private saving) is known as a (lifetime) income effect. When considering such effects it is important to note that the Government's budget constraint will also matter – for example a tax-financed increase in the generosity of state pensions could, depending on the incidence of state pensions compared to the tax instrument used, increase some individuals' lifetime incomes while reducing others. We document changes in the expected generosity of state payments in section 3.1 and review some existing empirical evidence on how individuals might respond to this in section 4. This is just one way in which Government policy affects individuals' private saving behaviour. Policy can also influence the relative price of consumption in retirement compared to the price of consumption during an individual's working life by influencing the return to saving. In terms of private saving, Government can influence the return through how the tax, tax credit and benefit system treats contributions to, returns in, and withdrawals from, savings.

In the most stylized version of the life-cycle model there is no uncertainty and no choices over retirement. As described above, the object of current saving in this framework is purely to cover future time periods where incomes are known to be low (in retirement, for example) or when needs are known to be high (young children or the costs of long term care). In this simple life-cycle model it is relatively simple to assess whether savings in working life are too low or too high. This model is complicated by two important factors: uncertainty and labour supply adjustments (the latter in the form of choice over retirement date). Uncertainty provides an additional motive for savings. In reality future earnings, longevity, costs of living and needs are all uncertain. Some of this uncertainty is insured through the tax, benefit and state pension system but increasingly this is not the case. Consequently such precautionary savings can be a key component of longer term private savings and requires individuals to have knowledge of the whole *distribution* of uncertain incomes and needs, as well as understanding how to best use the financial markets to insure against them. Increasing uncertainty over long- term needs and over incomes provides a further reason for increased savings. Levels of awareness and understanding become a key ingredient to decision making, a potentially significant source of market failure and, consequently an important motivation for policy intervention.

The timing of risks matters too, and explains why individuals might typically hold more than one type of savings vehicle. Savings for near term uncertainty can substitute for part of the savings required for longer term uncertainty. In this case, an individual who is facing near term earnings uncertainty could be made worse off if 'forced' to place savings in a restricted access long term savings account. When risk averse individuals face uncertainty over near term incomes and costs as well as longer term incomes and needs then they will value savings accounts that allow flexibility (see, Blundell and Stoker (1999), for example). Consequently, two otherwise identical individuals facing the same level of needs and uncertainties in retirement but different risks during their working life will want to make different pension savings.

Apart from longevity risk, the key uncertainty facing many individuals in their decisions over retirement savings are their earnings opportunities and their health in pre-(normal)-retirement years. Unexpected early retirement due to health problems or layoff explains an important part of the savings-retirement puzzle (see Banks, Blundell and Tanner (1998) and Smith (2004), and also section 4.2.1 of this document). So this part of the puzzle is not about irrationality but more about the lack of income smoothing when faced with these unforeseen events.

Not all exits from work before the normal retirement age are involuntary. Indeed, there is a good deal of evidence that early retirement acts as an important margin for labour supply adjustment in response to pension incentives. It is easy to adapt the basic life-cycle savings model to account for labour supply (Blundell and McCurdy (1999)) – the optimal savings profile will now depend on the flexibility of the retirement margin and preferences over work and leisure. Those with higher wealth levels, and those facing a lower financial reward from remaining in work, will tend to retire earlier (Blundell, Meghir and Smith (2002) and Banks and Casanova (2003)). Consequently incentives to save (or disave) can reveal themselves through changes in consumption and/or *changes in labour supply*.

We will focus on two recent UK policy reforms that impact on retirement and savings decisions. The introduction of the Pension Credit provides incentives for some individuals to retire early (or save less) as they have less need to save whereas others may use the opportunity of the credit to increase their retirement savings through working longer (or saving more). Similarly the extension of the Working Tax Credit (WTC) provides the potential for a double incentive to save: through a direct labour supply effect and through a tax smoothing incentive for private pension savings. Retirement incentives and involuntary early exits are as important for savings adjustments as are direct changes in consumption patterns. The impact of the tax, tax credit and benefit system on the incentives faced by individuals is described in section 3.2, with some evidence on how individuals respond being discussed in section 4. Before this we focus on why effective tax rates have potentially important consequences for the incentives that individuals have to make private retirement provision and also look at the role of information in individual's (retirement) saving decisions.

2.2. Economic theory and tax-rate smoothing

An important consideration for Government policy in this area is to what extent it wants to distort individuals' intertemporal consumption choices. Not wishing to distort an individual's decision over whether to consume today or whether they should save and consume tomorrow would imply that either income from which savings are made, or withdrawals from savings, should be subject to income tax (but not both) and that any interest income received should not be subject to income tax. Funds held in ISAs are taxed in this way, and therefore ISAs can be seen as not distorting an individuals' choice over consumption in retirement relative to consumption today.⁷ However there may be

⁷ This is known as expenditure tax treatment. The alternative, where investment returns are taxed, is known as comprehensive income tax treatment. For more details see Chapter 6 of Banks and Tanner (1999), or chapter six of Bateman, Kingston and Piggott (2001). The majority of individuals in the UK are not constrained by the current ISA

good reasons for policies to influence behaviour away from this neutral position – for example if individuals are to be enticed into locking their funds away in a private pension, and pre-commit to purchasing an annuity when they withdraw their funds, then private pension saving needs to be treated favourably relative to other more flexible forms of saving (unless individuals prefer to save in a private pension as a commitment strategy).

A further consideration is that many individuals will experience changes in the rate of income tax they pay during their working lives, and some might experience changes in the income tax rate that they face during their retirement. For example some individuals might be a higher rate taxpayer during part of their working life but a basic rate taxpayer throughout their retirement. Individuals that see a fall in their marginal withdrawal rate in retirement will find that the tax system provides an incentive to switch from consumption during their working life in favour of retirement consumption. Crucially, as we describe in section 3.2, these incentives are not purely a function of the income tax system but are complicated further by the presence of tax credits and means-tested benefits.

2.3. Economic theory and the impact of additional information on retirement saving decisions

The lifecycle model requires individuals to have information over what income they can reasonably expect over their lifetime, to what extent they value consumption in the future relative to consumption today, and the interest rate at which they can borrow and invest, as well as the skills and understanding to make decisions based on this information. In practice acquiring this information will come at a cost (either monetary or time or both). Therefore individuals will need to decide how much they should invest in trying to work out what an appropriate saving strategy might be. This suggests that there could be a role for Government in assisting individuals to acquire this information – in particular if there is reason to believe that any rules of thumb over saving that people might tend to adopt otherwise are likely to be particularly imprecise. One possibility is that individuals look at the strategy employed by their parents which might lead to lower than appropriate levels of saving in an environment where state support was becoming relatively less generous over time and individuals were living longer than their parents.

Providing individuals with more information over retirement saving decisions cannot (assuming that the information is correct) make them worse off. However the actual impact on their consumption choices is somewhat complicated since it depends on how the information is enabling individuals to make appropriate choices, and whether they have the skills and time to make use of the information. Perhaps most obviously if an individual is underestimating their future consumption needs, or discounting future consumption too heavily, then providing them with more information could be expected to increase the amount that they choose to save. However it is also possible that providing additional information would have the effect of reducing the amount of

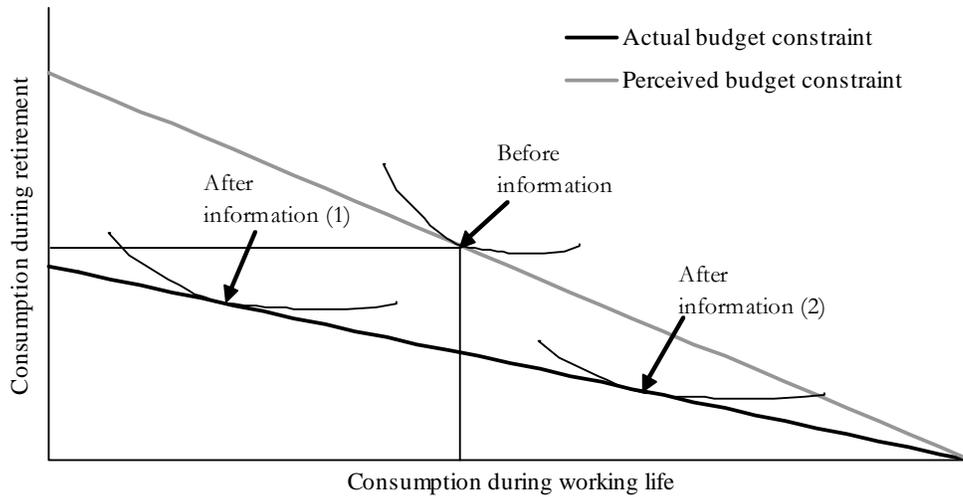
contribution limits in these vehicles and therefore potentially have access to expenditure tax treatment of their saving(s).

uncertainty that an individual perceives, and this could in turn lead to reduced saving due to a weakening of the precautionary motive to save.

A third, slightly more complicated possibility, is that individuals might be making inappropriate retirement saving decisions because they are misestimating the retirement income that a given amount of saving is likely to provide. For example this would be the case if they are not able to judge likely investment returns or annuity rates. Under this scenario, while still not making individuals worse off, the impact on saving of providing additional information is ambiguous. This is because there are two effects on current consumption which tend to operate in opposite directions. To take a concrete example, let us suppose that new information provided to individuals makes it clear that they have been overestimating annuity rates. Lower annuity rates reduce the value of lifetime income which will tend to reduce current consumption (and therefore increase saving). This is an income effect. However lower annuity rates also increase the price of future consumption relative to current consumption which will tend to increase current consumption (and therefore reduce current saving). This is a price effect. The net effect of these two mechanisms is therefore theoretically ambiguous. In other words, perhaps somewhat perversely, individuals who are currently over-optimistic about the amount of retirement income their saving strategy will deliver might actually reduce their saving were they to become better informed.

More detail on this point is provided in figure 2.1. Before the provision of information the individual thought that they were following an appropriate retirement saving strategy but had incorrectly assessed how much retirement income their planned saving would deliver. The provision of information in this example has informed them of the correct budget constraint. Depending on where their set of indifference curves lie they could choose to increase or reduce their consumption during their working life. If they move to the point marked 'after information (1)' then they would choose to consume less during their working life and save more for their retirement. However if they instead moved to the point marked 'after information (2)' then they would actually choose to consume more during their working life and therefore save less for their retirement.

Figure 2.1. The impact of providing additional information to an individual who was previously overestimating their retirement income could have an ambiguous impact on their retirement saving decisions.



The section has outlined some of the lessons from economic theory for individual retirement saving decisions. We now turn to looking at the incentives provided by the current UK pension system in section 3.

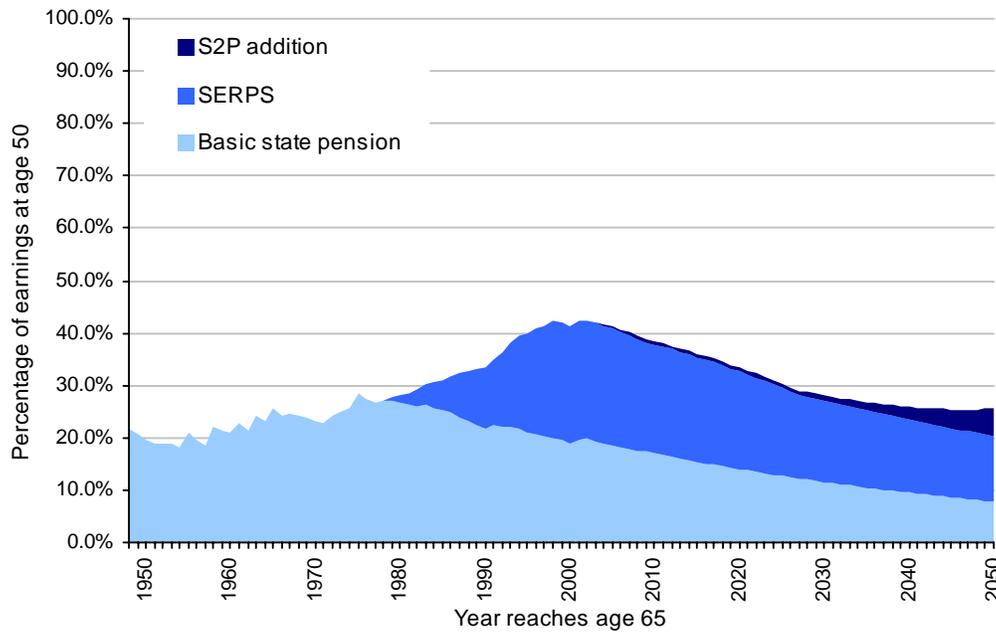
3. Strength of incentives to save privately for retirement in the UK

In the previous section we saw how an individual's incentives to generate private resources for retirement depend on the level of state financial support that they can receive during retirement (income effects) and also on the cost of transferring resources across the lifecycle (price or substitution effects). In this section we consider in more detail the income and price effects that are created by the UK's tax, benefit and pensions system. We begin by considering the level of state support that individuals can expect to receive from state pensions and pensioner benefits. We then consider the incentives that are created by the Pension Credit, and by the overall tax and benefit system. The final part of the section considers how many individuals are currently affected by different elements of the tax and benefit system.

3.1 Generosity of state pensions

As described in section 2 the life-cycle model predicts that the amount of income that an individual expects to receive in the future will affect their current saving decisions. For example the more generous state pensions are expected to be the less need there will be for individuals to save privately for their retirement. Furthermore the higher taxes required to finance higher state pensions will reduce individuals' ability, and potentially their (marginal) incentives, to save for retirement. Figure 3.1 shows how the generosity of state pension payments at age 65 has evolved for those on (age-specific) male median earnings throughout their working lives reaching age 65 between 1948 and 2050. The first thing to note from this figure is that throughout this period the replacement rates provided by the state are quite low and therefore individuals of this type are likely to want to save privately for retirement in order to maintain their living standards in retirement. Moreover state pension income as a share of earnings at age 50 peaked for individuals of this type around the start of this Century. This is because the declining value of the Basic State Pension seen since 1980 was, until 2002, outweighed by the impact of the introduction of the State Earnings-Related Pension Scheme (SERPS) (to which it initially took 20 years of contributions to become eligible for a maximum award). Looking forwards replacement rates for this type of individual are set to decline. This is despite the replacement of SERPS with the more generous State Second Pension (S2P). Therefore individuals of this type reaching age 65 beyond 2002 will be expected to want to save greater amounts for their retirement than their predecessors.

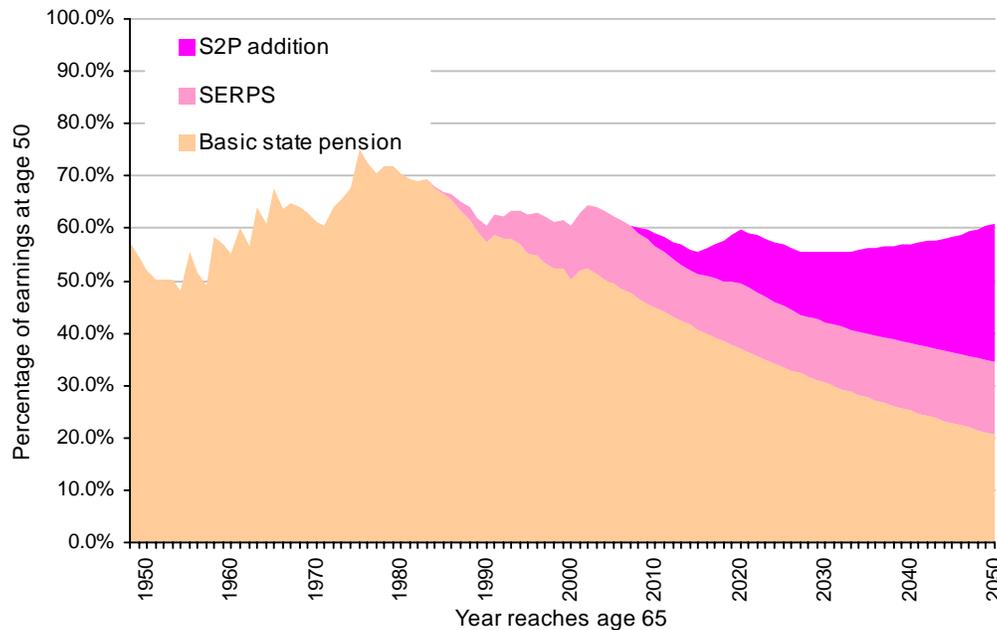
Figure 3.1. Simulated state pension at 65 for single male with median (age-specific) earnings, full employment history, and no private income, by year reaches age 65.



Source: Authors' calculations based on Disney and Emmerson (2005)

The pattern of low replacement rates from state pension income which are declining over time is not necessarily true of all types of individuals. Figure 3.2 presents the equivalent values to figure 3.1 for a much lower earning individual, namely someone on (age-specific) median female earnings throughout their working life. For an individual of this type, state pension income as a share of earnings at age 50 is much higher (since the flat-rate Basic State Pension represents a higher proportion of earnings) than for the individual considered in figure 3.1, and this relatively high replacement rate reduces the need for individuals of this type to save for their retirement. Moreover individuals of this type will benefit more from the replacement of SERPS with the State Second Pension since the latter is relatively more generous to those on lower earnings. Hence individuals of this type reaching age 65 over the next 20 years will not see the decline in replacement rates that was shown for those on (age-specific) male median earnings in figure 3.1.

Figure 3.2. Simulated state pension at 65 for single female with median (age-specific) earnings, full employment history, and no private income, by year reaches age 65.



Source: Authors' calculations based on Disney and Emmerson (2005).

Many individuals who are on a low income throughout their lifetime will be able to maintain their (low levels of) living standards throughout their retirement without any private retirement income. For example both men and women who are reliant on income from income support during their working lives could find that their income from the state rises at age 60 when they can become eligible for the Pension Credit Guarantee, which is set at a higher level than income support for those aged under 60. Conversely as was shown in figure 3.1 other, higher earning, individuals are provided with a very strong incentive to save for their retirement since state support is expected provide them with a low standard of living in retirement relative to what they had been used to during their working life.

3.2 The different incentives created by current policy

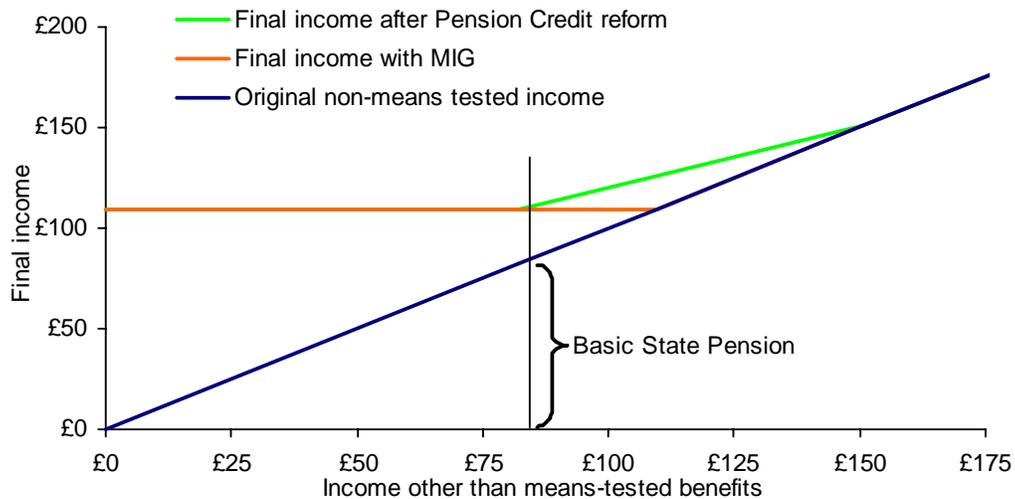
Having examined the income levels generated for pensioners by current policy, we now examine more fully the incentives (price and income effects) created by different elements of the UK tax, benefit and pensions system. We begin by considering the Pension Credit, which is a much discussed element of the system.

3.2(a) The incentive implications of the Pension Credit

An individual's budget constraints under a Pension Credit system of the kind introduced in the UK is shown in figure 3.3. An individual in receipt of a full Basic State Pension and no other income would, in 2005–06, receive £82.05 a week in income. The Pension Credit Guarantee (PCG) ensures that anyone who is prepared to claim this means tested

benefit will have their income topped up to at least this guaranteed level of £109.45 per week for a single individual in 2005–06. Before the introduction of the Pension Credit in October 2003, this flat means tested benefit was known as the Minimum Income Guarantee and was the only element of this income support type benefit for those aged 60 and over. For individuals who were (or who expected in retirement to be) on this line, there was no incentive for the household to obtain outside income, either by continuing to work, or through income generated from savings, unless they could increase their income beyond the point at which they were eligible for the MIG (£109.45 a week). The upward sloping green line shows how this changes after the Pension Credit reform. For individuals who are in receipt of a full Basic State Pension (or equivalent non-means tested benefit income from other sources), increases in their outside income do lead to an increase in their after benefit income.

Figure 3.3. Budget constraint for a single person aged 65 or over, without any means-testing, under the MIG regime and under the Pension Credit regime.



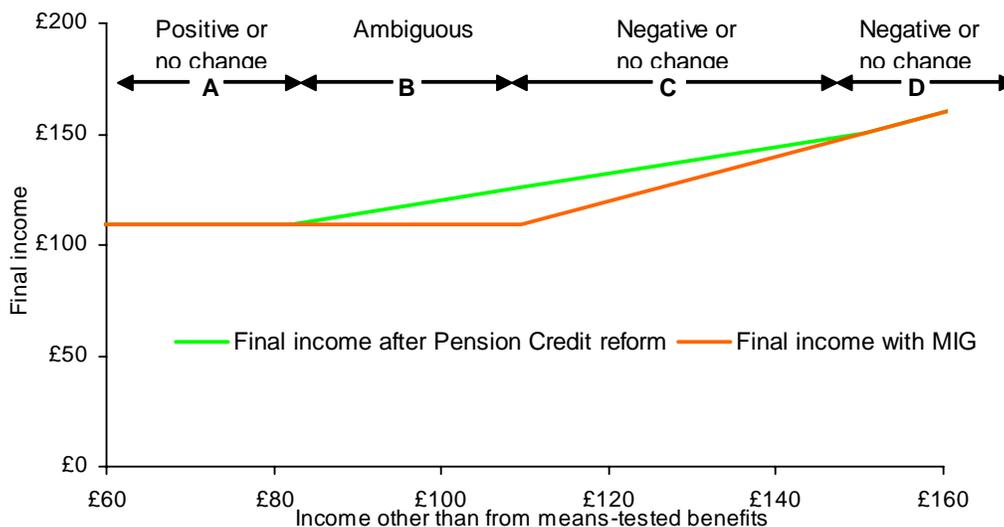
Note: Income disregards, taxation and other means-tested benefits ignored. Figures relate to 2005–06.

The incentive implications of this type of credit are considered in Figure 3.4. Using economic theory we can identify four different areas on the graph where incentives to work or save can be affected differently. In segment A, where individuals have an income of not more than the full Basic State Pension the Pension Credit reform does not directly increase their retirement income and if anything they face an increased incentive to save from the reform (as increases in their before benefit income might lead to a greater increase in their final income than it did before the reform). Hence individuals in this part of the budget constraint might choose to save or work more, or they might not change their behaviour.

In segment B the withdrawal rates are reduced (the reward to saving or working is increased). But the individual also has higher income in retirement as a direct result of the reform, as shown by the fact that the Pension Credit line lies above the MIG line. The substitution effect (lower marginal withdrawal rate) operates as an incentive to save/work more whereas the wealth effect induces individuals to save/work less. We

cannot say *a priori* which effect dominates – so for individuals in this range of income the impact of the Pension Credit reform on their incentives to work or save is ambiguous.⁸ This underlies the analysis we propose in section 4 below.

Figure 3.4 The key groups for whom economic theory suggests that the Pension Credit will alter retirement saving incentives.



Note: Income disregards, taxation and other means-tested benefits ignored. Figures relate to 2005–06.

For the remaining groups economic theory is (slightly) more conclusive about the direction of individual incentives to work or save as a result of the Pension Credit reform. Individuals who are further up the pensioner income distribution in segment C have become eligible for means-tested benefits as a result of the reform. Hence their marginal effective tax rate has increased and there is also a positive income effect. Taken together these effects imply that individuals in this area will either work or save less, or not change their behaviour at all. Those in segment D are not made directly better off as a result of the reform (there is no income effect) but they could choose to work or save less as doing so could result in a smaller drop in their income than it would have done before the Pension Credit was in place.

Taking these effects together, it is apparent that we cannot assert that the Pension Credit reform will increase aggregate private saving. Effects on different households are either unknown *a priori* or are associated with a disincentive to save. Furthermore there is the issue of how the £2bn a year net exchequer cost of the Pension Credit is financed. Assuming that borrowing and other public spending is left unchanged then the required increase in taxation makes it less likely that the introduction of the Pension Credit lead to an increase in aggregate private saving. This is because the increase in taxation will reduce the ability of the affected individuals to save (an income effect) and might also reduce their incentives to work or save (a substitution effect).

⁸ For further details see, for example, Brewer and Emmerson (2003), Clark and Emmerson (2003) or Disney and Emmerson (2005).

Naturally, this is a simplified model assuming that workers make saving decisions that are consistent with the budget constraint that they will face when retired. Saving is a forward-looking decision that, as described in section 2.1, involves a calculus not just of outcomes but of risks attached to outcomes. For example, if households thought that a future government might reverse current policy, positive saving could still be desirable despite the disincentives implicit in the current setup. On the other hand low-to-middle income working households might argue that a strategy of accumulating wealth through homeownership, as wealth held in an individual's own home is ignored in asset-tests for means-tested benefits, coupled with reliance on public pensions in retirement, is a desirable strategy.

3.2(b) Overall incentives to provide for retirement due to the UK tax, benefit and pension systems

There are also other Government policies that can affect the price of consumption in retirement relative to consumption during an individual's working life. If an individual's marginal tax rate is the same during their retirement and their working life then the tax treatment of ISAs (i.e. contributions made out of income after income tax, no income tax on returns and no income tax on withdrawals) does not distort between an individual's choice over consumption during their working life and consumption during their retirement. For many individuals funds placed in private pensions are relatively more favourably treated than this, in particular due to the fact that 25% of funds held in private pensions can be taken tax-free. For someone who gets basic rate tax relief on contributions to a private pension during their working life and who pays basic rate income tax on their pension income this tax-free lump sum will boost the value of their retirement income by 7.1% relative to what it would have been had they saved in an ISA.⁹

Other individuals will receive a larger or smaller boost to their pension fund as a result of the tax, tax credit and benefit system. This is because some individuals will face a different marginal withdrawal rate in retirement than the rate of relief that they receive at the margin¹⁰ on their contributions to private pensions. Table 3.1 shows the value of putting funds into a private pension relative to placing the equivalent funds into an ISA for 4 different situations during an individuals working life and 2 different situations during an individual's retirement (i.e. 8 outcomes in total). So, for example, an individual who is a basic rate taxpayer during both their working life and their retirement will receive the 7.1% boost outlined above (as shown in the second row of column B). However an individual who is a higher rate taxpayer during their working life but a basic rate taxpayer during their retirement will receive relief on contributions to a private pension at 40% but will pay income tax on pension income in retirement at 22%. This is known as tax rate smoothing. Table 3.1 shows that the tax system will boost these individuals' pension funds by 39.2% relative to funds held in an ISA (as shown in the

⁹ $(\frac{1}{4} + \frac{3}{4} (1-0.22))/(1-0.22) - 1 = 7.1\%$.

¹⁰ Here, and throughout this subsection, we will (unless otherwise stated) be referring to effective tax rates as they apply 'at the margin' – i.e. on the last or extra pound of income or pension contribution. These are generally the relevant rates to consider since incentives impinge on decisions about the 'marginal pound'. In much of the subsection the fact that we are considering marginal incentives will be left implicit in the terminology.

fourth row of column B).¹¹ This provides an additional incentive for individuals to reduce their consumption during their working life (i.e. increase their saving) in order to boost their consumption in retirement.

Table 3.1. Boost to pension fund (with tax free lump sum) on individual contributions from tax and tax credit system relative to ISA style expenditure tax treatment (TEE).

Working-age situation		Situation in retirement	
Reduction in net income from £1 saved	Tax / tax credit situation	Basic rate income tax (22%)	Higher rate income tax (40.0%)
		A	B
41.0p	Working tax credit taper plus basic rate income tax	103.7%	70.7%
78.0p	Basic rate income tax	7.1%	-10.3%
71.3p	Child tax credit taper plus basic rate income tax	17.1%	-1.9%
60.0p	Higher rate income tax	39.2%	16.7%
53.3p	Child tax credit taper plus higher rate income tax	56.6%	31.3%

Note: Boost from tax, and tax credit system show is relative to that achievable from saving in an ISA. Boost to employer contributions greater due to exemption of contributions from both employee and employer rates of National Insurance. Figures equal to $(\frac{1}{4} + (1-\frac{1}{4}) * (1-t_p)) / (1-t_e)$ where t_p is the marginal withdrawal rate on pension income and t_e is the relevant marginal withdrawal rate on working age income. $\frac{1}{4}$ is the proportion of a pension fund that can be taken free of income tax.

This is not the case for all individuals – some will, in fact, ‘tax rate climb’ as they move into their retirement. For example, an individual who received relief at the basic rate of income tax during their working life, but became a higher rate taxpayer in retirement, would find that the effect of pension tax relief is to reduce the value of their fund by 10.3% relative to what it would have been had they saved in an ISA (as shown in row 2, column B of Table 3.1). However as incomes in generally fall at retirement there will be very few individuals in this situation. The possibility of tax rate climbing is much more relevant for individuals who expect to be in receipt of means-tested benefits in their retirement. For example those who pay basic rate income tax in their working life but are on the taper of the Pension Credit (and not on the taper of any other means-tested benefits) in retirement will receive relief on pension contributions at 22% but will face a withdrawal rate on income in retirement of 40%.¹²

For individuals expecting to be on the taper of the Pension Credit in retirement the value of contributing to a private pension relative to placing the equivalent amount in an ISA depends on whether or not any accumulated funds in an ISA affect their entitlement to the Pension Credit. Table 3.2 shows the boost provided by the tax and tax credit system from placing funds in a private pension relative to an ISA under two different assumptions. First, in column C of Table 3.2, that funds accumulated in an ISA do not

¹¹ Further details can be found in Emmerson (2005).

¹² Those who are also on the taper of council tax benefit or housing benefit in retirement will face a larger withdrawal rate (potentially as high as 91%) on pension income.

affect their Pension Credit entitlement and second, in column D of Table 3.2, that the funds accumulated in an ISA are used to purchase an annuity which is then subject to the 40% Pension Credit taper.¹³

Table 3.2. As Table 3.1, but for individuals (only) on the Pension Credit taper in retirement.

Working-age situation		Situation in retirement	
Reduction in net income from £1 saved	Tax / tax credit situation	Pension Credit Savings Credit (only) (40%)	Pension Credit Savings Credit (only) (40%)
		ISA funds not subject to 40% taper in retirement	ISA funds used to purchase annuity and therefore subject to 40% taper in retirement
		C	D
41.0p	Working tax credit taper plus basic rate income tax	70.7%	143.9%
78.0p	Basic rate income tax	-10.3%	28.2%
71.3p	Child tax credit taper plus basic rate income tax	-1.9%	40.2%
60.0p	Higher rate income tax	16.7%	66.7%
53.3p	Child tax credit taper plus higher rate income tax	31.3%	87.5%

Note: Boost from tax and tax credit system show is relative to that achievable from saving in an ISA. Boost to employer contributions greater due to exemption of contributions from both employee and employer rates of National Insurance. Figures for column C equal to $(\frac{1}{4} + (1-\frac{1}{4}) * (1-t_p)) / (1-t_c)$ where t_p is the marginal withdrawal rate on pension income and t_c is the relevant marginal withdrawal rate on working age income. $\frac{1}{4}$ is the proportion of a pension fund that can be taken free of income tax. For column D we assume that both funds held in the ISA, and the tax-free lump sum from a private pension, are used to purchase an annuity which is then subject to the 40% Pension Credit taper in retirement: therefore the figures are equal to $1 / (1-t_c)$.

Under the assumption that funds accumulated in an ISA do not reduce eligibility for the Pension Credit Table 3.2 shows that, even after taking account of the tax-free lump sum, an individual paying basic rate income tax during their working life would find that their pension fund is worth 10.3%¹⁴ less than equivalent funds placed in an ISA (as shown in the second row of column C). The assumption that the asset test on the Pension Credit does not reduce their entitlement is crucial. This would hold if the funds were worth less than the asset limit (currently £6,000) or if they are moved into a form that is not subject to the asset test – for example durables or owner occupied housing (subject to the ‘notional capital’¹⁵ rules), or indeed if the funds are used to finance additional

¹³ In this scenario we also assume that the tax-free lump sum from a private pension is also used to purchase an annuity and is therefore also subject to the 40% taper. We are therefore assuming that the funds, however saved, are used to provide an income stream during retirement. This allows us to focus on differences in value that are created simply by the tax treatment of the different savings vehicles.

¹⁴ This is exactly the same as the -10.3% in the second row of column B of Table 3.1 since the marginal rates in working life (22%) and retirement (40%) are equivalent

¹⁵ The Pension Service (2005) states that “We may treat you as having notional capital if you have got rid of capital to get Pension Credit or to get more Pension Credit” and gives the example that “the decision maker may decide that replacing a car is reasonable, but buying a Rolls-Royce is probably not”.

consumption prior to retirement. In February 2005 70% of Pension Credit recipients aged 65 or over had capital worth less than the £6,000 limit, so many are likely to have some scope to increase their ISA balances without breaching this ceiling.¹⁶ Under the assumption that the funds held in an ISA are used to purchase an annuity then, as shown in column D of Table 3.2, private pension saving is relatively tax advantaged and boost to fund values that is provided by this tax advantage can often be quite strong.¹⁷

What is highlighted in Table 3.1 and Table 3.2 is that the incentive to save in a private pension provided by the tax, tax credit and benefit system varies considerably across different types of individuals. In particular those who are on the taper of the Working Tax Credit (which is withdrawn at 37% in addition to basic rate tax relief of 22%) will find that £1 placed in a private pension only reduces their net income by 41p, compared to 78p for a basic rate taxpayer (or indeed a non-income taxpayer or a lower rate income taxpayer since these individuals also receive relief on pension contributions at the basic rate of income tax). Individuals on the taper of the Working Tax Credit are being provided with a very strong incentive to place funds in a private pension, which will provide an incentive to boost retirement consumption relative to working age consumption.¹⁸ This is true even if they are on the taper of the Pension Credit in retirement.

The figures presented in Table 3.1 and Table 3.2 only apply to contributions made by individuals to private pension funds: contributions made by employers are relatively more tax advantaged because employer contributions to private pensions are not subject to either employer or employee National Insurance Contributions. For those individuals who receive employer pension contributions (potentially financed by a reduction in current pay) Government policy is providing a relatively stronger incentive to save in a private pension.¹⁹

The discussion in this section has made the comparison between the generosity of the relief on contributions to a private pension during an individual's working life and the tax rate that they will face during their retirement. Many individuals might see their marginal tax rate change during their retirement. For example if the Pension Credit Guarantee is indexed in line with average earnings but state and private pension income in receipt is typically indexed in line with prices then many individuals whose incomes are too great to be on the Pension Credit taper at the start of their retirement might well fall onto it later in their retirement.²⁰

¹⁶ Source: Table PC10.1 of Department for Work and Pensions (2005).

¹⁷ An alternative assumption is that the funds held in an ISA exceed £6,000 and are subject to the Pension Credit asset test (rather than being used to purchase an annuity) would make ISAs even less attractive. This is because the asset test reduces benefit entitlement by more than annuity income of equivalent value.

¹⁸ This point was made in the first report of the Pensions Commission (2004).

¹⁹ See Emmerson and Tanner (2000) for more details.

²⁰ This point was made with respect to the Minimum Income Guarantee (the predecessor of the Pension Credit Guarantee) in Disney, Emmerson and Tanner (1999).

Equivalently many individuals will see variation during their working lives in the generosity of relief that they receive on personal contributions to private pensions. Graduates might typically start in the labour market as basic rate taxpayers but become higher rate taxpayers later in their working life, and many individuals might find themselves on the Working Tax Credit when they first have children. These individuals could benefit from placing any retirement saving initially into an ISA and then moving it into a private pension at the point in their lives when they receive the most generous tax treatment. So, for example, those who are basic rate taxpayers but expect to become higher rate taxpayers later have an incentive to delay moving retirement savings into a private pension. Similarly those who are on the taper of the Working Tax Credit have an incentive to move as much of their lifetime retirement saving as possible into a private pension at this point. The new pension tax arrangements which come into force from April 2006, which will see a large increase in the annual pension contribution limits for most individuals, will make this type of behaviour more viable for many people. This is because individuals will be able to contribute up to 100% of their gross earnings (or £3,600 if earnings are lower than this, subject to a cap of £215,000) into a private pension, which is considerably greater than the pension contribution limits that are faced by most individuals under the current regime.²¹ The fact that an optimal pension savings strategy for many individuals will be to save for retirement in an Individual Savings Account until such a time that they receive the most generous treatment from the state (either because they find themselves on the WTC taper or because they become a higher rate taxpayer) is an extremely complicated (and possibly overly complicated) incentive for individuals to react to.

3.3 How many people are there of each person type?

Section 3.2(b) has described the magnitude of incentives to save for retirement in a private pension for individuals of different types. What matters for the overall impact on retirement saving is how many individuals there are of each type and how responsive their saving behaviour is to the incentives provided by the tax, tax credit and benefit system. This section presents some new empirical analysis of the likely numbers of each type beginning with the Pension Credit (section 3.3(a)) and then the tax and tax credit system more generally (section 3.3(b)). Section 4 goes on to describe what is known about the extent to which individuals respond to these types of incentives.

3.3(a) Eligibility for the Pension Credit among the current pensioner population

First we consider Pension Credit. As explained in section 3.2(a) we can identify four different levels of retirement income, other than that from means-tested benefits, where incentives to work or save can be affected differently. This was seen to depend on the positioning of the start and the end of the Pension Credit taper. Looking back to figure 3.4 this depended on whether an individual had Pension Credit assessable income in ranges A, B, C or D. These same areas are marked on both figures 3.2(a) and 3.2(b) which show the distribution of (assessable) incomes in relation to the position of the

²¹ Further details can be found in Emmerson and Wakefield (2003).

taper for pensioners in 2003–04. The separate parts of the figure are distinguished by whether the individual is single (3.5(a)) or in a couple (3.5(b)). The areas show where the start and the end of the Pension Credit taper would lie for those who do not qualify for any premia – for example for having certain disabilities or caring responsibilities.

The key issue is how an individual would choose to change his or her assessable income in the light of these incentives. This income is made up of some non-discretionary items which mainly consist of state pension provision and some that are easier to adjust. The two figures separate individuals at each point in the assessable income distribution according to whether they have some private income. It is mainly only those sources of income which could be considered open to adjustment. As we have highlighted earlier, such adjustment to savings may occur through the delaying retirement or through the reduction of consumption before retirement.

In total some 59% of single pensioners and 31% of those in couples are assessed to be eligible for the Pension Credit. Figure 4.2a shows that while only a small number of single individuals (6.8% of single individuals) have an assessable income below the start of the savings credit taper there is a relatively large number of individuals at the point where the taper begins (10.5% of single individuals²²). This is probably due to a large number of single individuals having entitlement to a full Basic State Pension and no other significant income sources. As described in figure 3.4 and the surrounding text, economic theory suggests that these individuals would either increase or not change their income as a result of the incentives provided by the introduction of the Pension Credit (i.e. group A in figures 3.4 and 3.5a). A further 18.0% of single pensioners lie above the start of the start of the savings credit taper but below the Pension Credit Guarantee level (i.e. group B in figures 3.4 and 3.5a). These are the individuals that economic theory is ambiguous about whether the Pension Credit will lead to individuals choosing to save less, the same or more than they otherwise would have done. Less encouragingly for incentives to increase saving a further 23.4% of single pensioners are above the level of the Pension Credit Guarantee but below the end of the savings credit taper (group C in figures 3.4 and 3.5a). These are the individuals for whom the incentive effects of the pension Credit are less ambiguous – economic theory suggests that these individuals will either not change or will choose to reduce their savings in the light of the Pension Credit. Moreover as the figure shows many of these individuals have private sources of income which suggests that they might have some scope to reduce the level of income that they receive in the light of the incentives that they face.

²² In fact this is the proportion who were thought to have assessable income of between £77 and £80.5 per week in 2003–04. The large number in this group is almost certainly due to a large number of people being eligible for the full basic state pension (£77.45 in 2003–04), but with little or no other income.

Figure 3.5a Distribution of Pension Credit assessable incomes for single people aged 65 or over, 2003–04, by whether have any non-benefit income

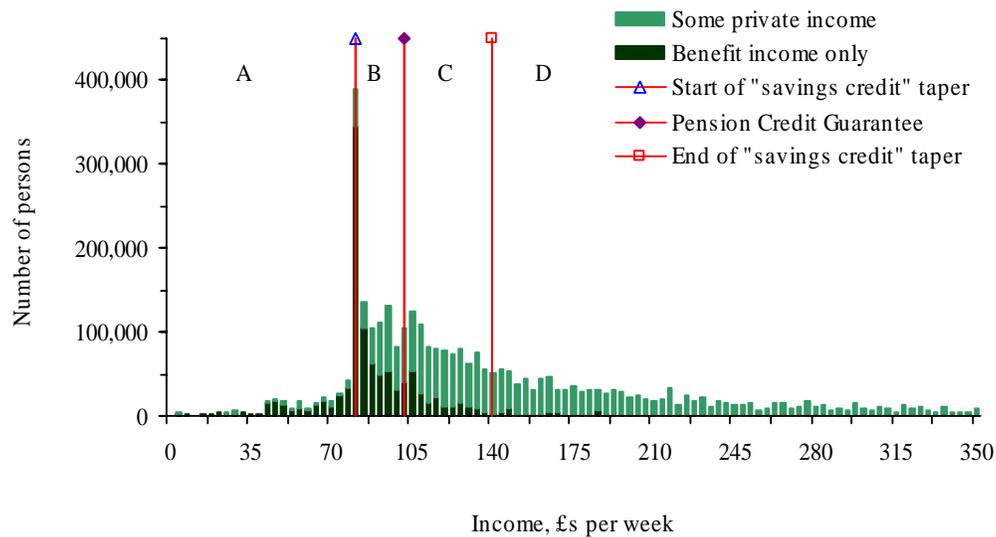
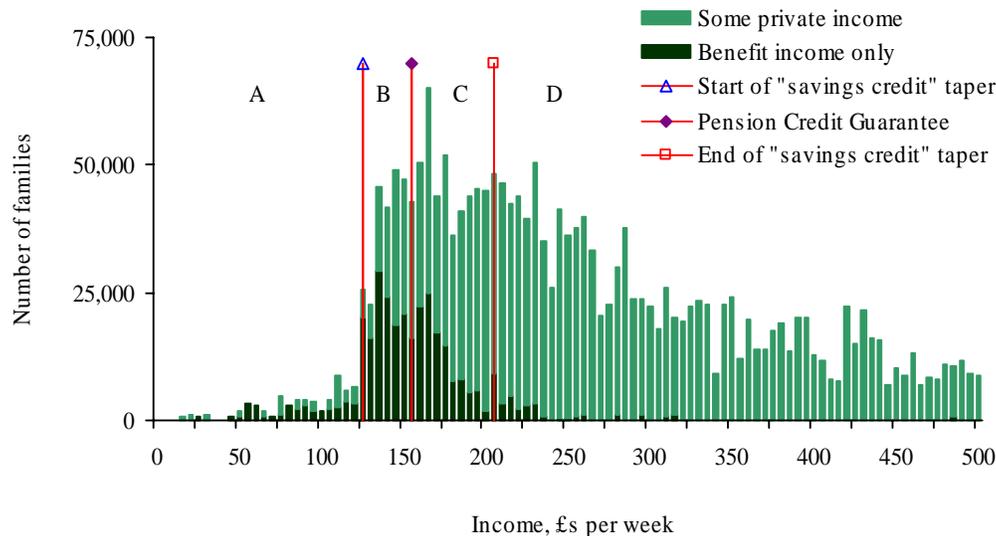


Figure 3.5b Distribution of Pension Credit assessable incomes for couples containing at least one individual aged 65 or over, 2003–04, by whether have any non-benefit income



Notes: In 2003–04, eligibility for the Pension Credit savings credit for singles began at a level of income of £77.45 per week, and extended to approximately £139.00 pounds per week. For couples the equivalent figures are £123.80 and £203.80 pounds per week. Income measure used is total benefit unit income that is subject to the Pension Credit means test. Approximately 375 thousand single pensioners, and 538 thousand pensioner couples, are excluded from the figures as their incomes exceed £350 and £500 per week respectively.

Source: Authors' calculations using income data derived from the Family Resources Survey 2003–04 using the IFS tax and benefit simulation model TAXBEN.

While fewer individuals in pensioner couples are found to be eligible for the Pension Credit one quarter are found to have an assessable income between the Pension Credit Guarantee and the end of the savings credit taper. This means that despite fewer

individuals in pensioner couples being eligible for the Pension Credit than single pensioners a similar proportion face a diminished incentive to save for retirement as a result of the reform (i.e. group C in figures 3.4 and 3.5b). As was the case with single pensioners many of these pensioners receive private incomes which could perhaps be more easily adjusted in the light of the changed incentives.

It is important to note that Figure 3.5 (a & b) displays the income distribution of existing pensioners in 2003–04. Previous savings decisions cannot be changed by the Pension Credit and, for many of these retired individuals, adjusting their labour supply will not be practical. Therefore the main margin will be through changes in their portfolio – for example choosing whether to hold income bearing financial assets or durable goods. Those just below the state pension age might also often need to adjust their labour supply behaviour (perhaps by delaying or bringing forward their retirement) if they are to adjust their retirement income. Thus for older workers, any responses to the incentives created by the Pension Credit might involve changes in labour supply by those who have some flexibility to adjust the amount that they work. For younger individuals, labour supply responses might have less of a role since for these individuals relatively small changes in saving each period will cumulate into relatively large changes in retirement income.

A recent study by Sefton, *et al*, (2005) uses simulation techniques to assess the impact of the introduction of the Pension Credit on both individuals saving and labour supply decisions. They find an ‘insubstantial fall in aggregate population savings’ since the predicted fall in saving among those in area C is almost entirely offset by an increase in predicted retirement saving by those in area B. In contrast their model predicts an increase in aggregate labour supply particularly among those aged between 60 and 64. This arises from a large predicted increase in labour supply among those individuals in area B that more than offsets the predicted reduction for those in area C. Small effects of the Pension Credit on those in areas A and D are predicted.

Over time the number of individuals in each of the areas marked A, B, C and D figures 3.5a and 3.5b will depend in part on how the three vertical lines in those figures are indexed. For the purposes of the long-term spending projections the Department for Work and Pensions assumes that the Pension Credit Savings Credit remains linked to the Basic State Pension and is indexed in line with prices, and that the Pension Credit Guarantee is indexed in line with average earnings. If this materialises then, relative to earnings, the first vertical line would fall the left, the second vertical line would remain fixed and the third vertical line would move to the right. Therefore, *ceteris paribus*, the numbers facing an unambiguously positive incentive to increase their retirement income would shrink (group A) while the numbers for whom the impact on retirement saving incentives is either ambiguous (group B) or negative (group C) would grow.

3.3(b) Numbers of individuals facing different incentives to contribute to a private pension among the working age population

The percentage of individuals aged between 16 and the State Pension Age qualifying for each of the five possible levels of relief on pension contributions in 2003–04 is shown in Table 3.3. This shows that over three quarters (77.8%) of those aged between 16 and the

State Pension Age in 2003–04 could receive relief on individual contributions to a private pension at the basic rate of income tax. For these individuals a 78p reduction in current income is required to make an individual contribution of £1 to a private pension. The remaining 22.2% could receive greater relief than this. In particular 11.7% of individuals were thought to live in families with incomes that would put them on the 37% taper of the WTC or CTC, and if they were receiving this benefit they would only need to reduce their current income by 41p in order to make an individual contribution of £1 to a private pension. A further 8.5% of individuals were higher rate taxpayers for whom current income would be reduced by 60p for each individual contribution of £1 to a private pension.

Table 3.3. Percentage of individuals qualifying for relief on pension contributions at different rates, those aged 16 to State Pension Age only, 2003–04.

	Reduction in net income from £1 saved	Percentage of individuals
Working tax credit/ Child tax credit 37% taper, plus basic rate income tax relief	41.0 p	11.7 %
Basic rate income tax relief	78.0 p	77.8 %
Child tax credit taper plus basic rate income tax relief	71.3 p	1.4 %
Higher rate income tax	60.0 p	8.5 %
Child tax credit taper plus higher rate income tax	53.3 p	0.7 %
<i>All</i>		<i>100.0 %</i>

Note: Figures may not sum due to rounding, and also because there are a very small number of people who are higher-rate income taxpayers but who are on the 37% taper of WTC/CTC.
Source: Authors' calculations using the IFS tax and benefit model and data from the Family Resources Survey 2003–04.

As discussed in section 3.2 (b) it is not the current generosity of the tax relief on private pension contributions that should matter, but the maximum level of generosity that individuals can receive during their working lives. For example large numbers of basic rate income tax payers might reasonably expect to either move onto the taper rate of the Working Tax Credit, or to become a higher rate taxpayer at some point in the future. Table 3.4 shows evidence that a not insignificant percentage of non-higher rate income taxpayers in 1991 paid higher rate income tax at some point over the period from 1991 to 2003. For example 17.3% of non-higher rate income tax payers aged 30 to 39 in 1991 became higher rate income taxpayers at some point in the following 12 years. While this might sound like a relatively small proportion of the total it is important to note that it is of all non-higher rate income taxpayers which will include the vast majority of those who are permanently out of the labour market. Taking those basic rate taxpayers who in 1991 were aged 30 to 39 and had an income in excess of £10,000 one-in-three (32.5%) became higher rate taxpayers at some point over the period from 1992 to 2003.²³

²³ Sample size = 372 observations.

Table 3.4. Percentage of non-higher rate income taxpayers in 1991 becoming a higher rate taxpayer over the period 1992 to 2003, by age.

Age in 1991	Never higher rate income taxpayer between 1991 to 2003 (inclusive)	Sometimes higher rate income taxpayers between 1991 to 2003 (inclusive)	Sample size
16 to 29	85.5%	14.5%	820
30 to 39	82.7%	17.3%	813
40 to 49	86.1%	13.9%	818
50 to 59	91.9%	8.1%	580
60 and over	97.5%	2.5%	733
<i>All</i>	88.3%	11.7%	3,764

Note: Sample comprises individuals whose age and income is available in all years from 1991 to 2003. Unweighted. Rows may not sum to 100% due to rounding.

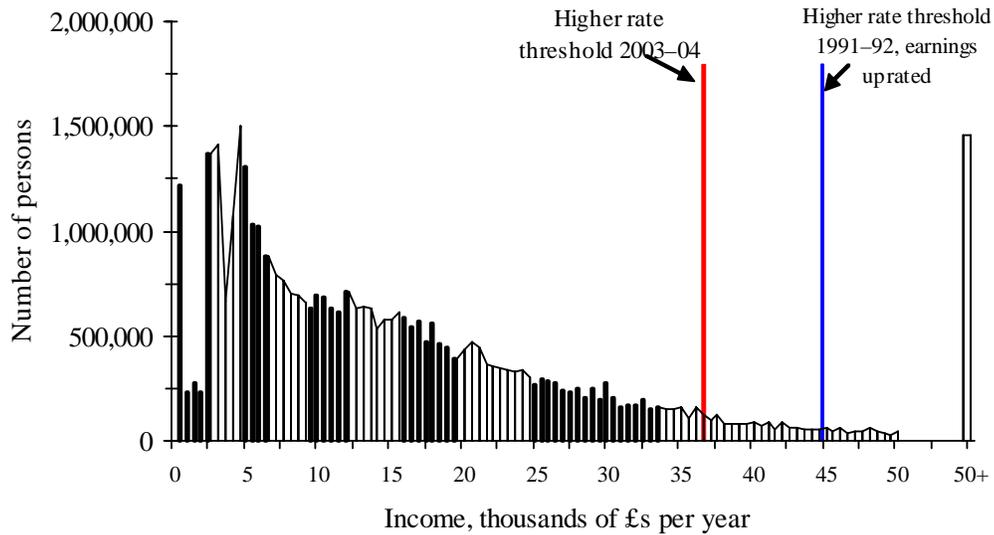
Source: Authors' calculations using data from the British Household Panel Survey.

Whether we could expect similar percentages of current basic rate income taxpayers to become higher rate taxpayers over the next 12 years will depend in part on the density of the income distribution relative to the point at which higher rate tax becomes payable (Higher Rate Threshold, HRT). Figure 3.6 shows the distribution of individual pre-tax incomes in the UK in 2003–04, with the dark and light shading denoting the range of income covered by each income decile group of the population. Also marked on the figure is the income level of the HRT for 2003–04, and the value that this limit would have reached if it had increased in line with average earnings since 1991–92. It is clear from the picture that the income distribution is more densely populated around the 2003–04 HRT than it is around the earnings uprated value of the 1991–92 HRT.²⁴ Therefore, compared to the figures for the period 1992–2003, we might expect rather more of the current stock of basic rate income taxpayers to become higher rate taxpayers at some point during the next 12 years. Of course it is possible that the HRT will not continue to be indexed in line with prices. For example when forecasting the public finances the Treasury assumes that it will be price indexed for the next five years but with a “a comprehensive form of ‘real indexation’” thereafter.²⁵ Over the eight years since Labour came to power in May 1997 the HRT has been indexed in line with inflation seven times and cut in real terms once.²⁶

²⁴ To the extent that earnings growth has not been uniform across the income distribution, showing the earnings uprated value of the HRT will not accurately capture the density of the 1991–92 income distribution around the then HRT. However, it seems unlikely that allowing for this effect could reverse the finding the current income distribution is denser around the HRT than was the case in the early 1990s.

²⁵ See footnote 13, page 51, of HM Treasury (2004).

Figure 3.6. Distribution of income in 2003–04 with both 2003–04 higher rate threshold and earnings updated 1991–92 higher rate threshold highlighted.



Notes: The HRT that applied in tax year 1991–92 (£26,995) is updated to reflect the 63% growth in average earnings in Great Britain that occurred between April 1991 and April 2003, (this figure is derived from the whole economy seasonally adjusted index for average earnings including bonuses, which is Office for National Statistics series LNMQ in Economic Trends). Income measure used is total individual income that is potentially subject to income tax.

Source: Authors' calculations using income data derived from the Family Resources Survey 2003–04 using the IFS tax and benefit simulation model TAXBEN.

This section has considered the incentives to provide for retirement that are created by the current UK tax, benefit and pensions system. We now turn to considering what is known about how strongly individuals respond to incentives that might affect saving and retirement behaviour.

²⁶ Budget 2002 implemented a real cut in the HRT in April 2003.

4. How do people respond and what do they expect?

In the previous section we outlined what is known about the incentives to save and provide for retirement that are created by the current institutional set up that governs pensions and savings in the UK. The institutions that we discussed included not only state and private pensions, but also other savings instruments and tax and benefit profiles that affect the effective return to saving for people with different circumstances. We saw that this combination of different institutions can create quite different incentives to provide for retirement for people depending on the level of resources that they have and the profile of income receipt that they experience over their lifetime.

When assessing how important these different incentives are, and whether or not there could be beneficial policy reforms that would adjust incentives, it is important to know how people respond to the different incentives that they face. There is empirical evidence that indicates that when deciding how to provide for their retirement individuals do respond to financial incentives that are created by policy, and the aim of this section is to outline what is known about the nature and strength of these responses. Investigations of these issues have come from a broad range of countries. However, since institutional (and possibly also cultural) differences make it difficult to translate conclusions across national boundaries, we mention US and other international evidence only to complement the relatively sparse UK evidence that is our main focus.

Much of the evidence on how individuals' retirement provision decisions respond to incentives, can be thought of as falling into one of two categories. The first set of evidence examines how financial incentives to save – often created by tax rules that increase the effective interest rate for certain types of saving – affect saving behaviour. In the UK instruments such as tax favoured private pensions, and TESSAs, PEPs and subsequently ISAs, offer opportunities for research of this kind. The second set of evidence examines how people change their decisions about retirement provision in order to accommodate the retirement incomes that they will receive from the state as pensions or social security benefits. In this section we will discuss each of these categories of evidence in turn and we shall see that many of the studies in both categories exploit policy reforms as a means to identify how people respond to incentives. When individuals respond to policy reforms they are responding to their own beliefs and expectations about how the reforms will affect them; to acknowledge this fact a third subsection will discuss what data is available on how accurately people assess the implications of policy when they form their expectations.

4.1 Responses to (tax) incentives to encourage saving

A clear example of individuals responding to a tax incentive to save is the introduction of personal pensions in the UK in 1988. When it first became possible to opt out of SERPS into a (defined contribution) personal pension scheme, those who followed this course of action received a rebate on their National Insurance payments that was worth 5.8% of their qualifying earnings, plus an extra state contribution worth a further 2% of qualifying earnings. This extra 2% gave some previously contracted in individuals a clear incentive to opt out of SERPS, and the power of compound interest meant that relative to possible

SERPS accruals the expected value of investing the rebate in a private pension was particularly large for younger workers. Disney and Whitehouse (1992) explain exactly how generous these incentives were for workers of different ages and also present evidence that indicates that individuals responded to the incentives: by 1990 2 million workers had opted to take out personal pensions, which was some eight times more than the number expected by the then DSS; furthermore – reflecting the age structure of the incentives provided – one half of these individuals were aged under 30. While this evidence indicates that there was a strong response to the incentives provided when personal pensions were introduced, it is worth noting that the fact National Insurance rebates were a large proportion of the early contribution to these pensions suggests that initially at least contributions to personal pensions did not represent a significant addition to national saving (see sections 4 and 5 of Disney, Emmerson and Wakefield, (2001)).

It is perhaps unsurprising that individuals were seen to respond to financial incentives as strong as those provided when personal pensions were introduced in Britain. The introduction of Stakeholder Pensions in 2001 was associated with a more incremental effect on the financial incentives for most individuals: the only statutory change that directly affected the financial incentives for individuals to contribute to private pensions, was an increase in the maximum limits on tax relieved pension contributions that affected only those with zero, low or moderate earnings. In a recent econometric analysis of this reform package, Chung, Disney, Emmerson and Wakefield (2005) employ a difference-in-differences methodology that compares lower earners to higher earning individuals who are assumed not to have been affected by the reform. The analysis indicates that the group for which stakeholder pensions may have led to an increase in pension coverage is a group characterised by lower earnings levels than the approximately £9,000–£18,500 range of the original target group for the stakeholder products.²⁷ Thus the authors conclude that if the change in coverage is due to an element of the reform, then it is most likely to be due to the change in financial incentives that operated through the change in limits on tax relieved contributions.

The UK also provides examples of the introduction of non-pension accounts that have provided tax relief on the returns accruing to savings, first with Personal Equity Plans (PEPs) and Tax Exempt Special Savings Accounts (TESSAs), and more recently with the more flexible Individual Savings Accounts (ISAs). Data limitations make it hard to conduct thorough econometric analysis of the UK experience of these accounts, but descriptive evidence is available in Attanasio, Banks and Wakefield (2005). Aggregate evidence on the balances held in TESSAs indicates that these balances tended to jump immediately when new contributions to accounts could be made in a new year, and also that average contributions were often close to the maximum amounts that could be deposited in accounts. This, it is argued, is at least consistent with a pattern of individuals largely reshuffling existing wealth into TESSAs, rather than making new savings.

The authors also present microeconomic data on the experience of ISAs which indicate that while the take-up of ISAs was quite high, there is no strong evidence that this had much affect on overall ownership of non-pension financial assets or on levels of saving

²⁷ See paragraph 27, page 5 of Department of Social Security (1998).

among those with such assets. However there is some evidence of an increase in ownership of financial assets among low education groups and the young. This could suggest that ISAs were successful in being more attractive to low income savers than TESSAs or PEPs had been (Chapter 5 of HM Treasury, 2000). There has, however, been at least one study using micro-data to examine the effects of ISAs which argued that the products were little better than TESSAs and PEPs at reaching some low-income groups (Paxton, 2003).

Attanasio, Banks and Wakefield argue that the UK evidence that they present is consistent with US evidence concerning tax deferred “Individual Retirement Accounts” (IRAs) that is drawn directly from Attanasio and DeLeire (2002). Attanasio and DeLeire use short horizon panel data on consumption and argue that while around 40% of contributions to IRAs in the 1980s may have been additional personal saving, once account is taken of the cost of tax relief then less than one dollar in ten of contributions could be considered to be new national saving. Thus, for the cases that they consider, Attanasio, Banks and Wakefield conclude that “only relatively small fractions of the funds going into tax-advantaged savings vehicles can be considered to be ‘new’ saving. As such, the best interpretation of the evidence is that such policies are expensive ways of encouraging savings.”

While the results of Attanasio and DeLeire point to a clear conclusion, it is by no means the case that all analyses of the US experience of tax deferred retirement accounts – IRAs and employer sponsored 401(k)s – have led to the same answer to the question of whether or not tax incentives are an effective means to encourage saving. Indeed, different analyses of the same data have sometimes led to opposite conclusions and this lack of consensus is exemplified by a symposium in the *Journal of Economic Perspectives* (Fall, 1996). In this symposium Engen, Gale and Scholz (1996), drawing heavily on their own work, argue the case for why relatively little of the contributions to tax deferred retirement accounts could be new saving. Poterba, Venti and Wise (1996), also drawing heavily on their own previous work, argue why the evidence was consistent with the view that a large portion of these contributions represented new saving. Hubbard and Skinner (1996), in the first article in the symposium, take the compromise line of arguing that the truth could be somewhere between the conclusions of the other two papers.

Since 2002 low and middle income families contributing to certain private pension schemes in the US were able to receive a ‘Saver’s Credit’. Evidence presented by Duflo, *et al*, (2005) suggests that this credit did lead to an increase in pension contributions among the eligible group (although not necessarily total saving). The increase in pension contributions is small relative to the very strong financial incentives provided by this policy. The authors argue that this is due to the fact that ‘both the equivalent match rate and the maximum eligible contribution are not easy to decipher’.

The evidence we have summarised in this section clearly suggests that individuals do respond to financial incentives designed to affect their saving behaviour. However, evidence on whether tax incentives to save can lead to significant increases in national saving is at best weak, and it seems that tax incentives may often be an expensive means to encourage new saving. This is not to say that there is no place for these tax breaks as a

policy tool. While these tax breaks might not lead to new national saving, they could lead to some individuals having increased personal savings and we have said nothing about the distributional properties of this possible outcome. In addition, and as described in Section 2.1, tax incentives that remove tax on returns to saving (for example ISAs) can remove distortions in favour of consumption today over consumption in retirement. Finally, while tax breaks might be an expensive method to generate new saving, it may be that individual responses to other policies mean that other methods of boosting saving and retirement provision are equally costly (or alternatively that the ‘deadweight loss’ is deemed to be desirable redistribution).²⁸ The next subsection considers some of the individual responses to public pensions that might increase the cost of delivering retirement incomes through state benefits.

4.2.1 Responses of private savings to state transfers

In this subsection we first consider what is known about whether individuals have offset to past changes in UK state pensions by adjusting their private saving behaviour. We then consider whether there may soon be the scope (and available data) to examine whether recent changes to tax credits in the UK have had the types of effects on private saving that were described in section 3.2(b).

(a) Existing evidence

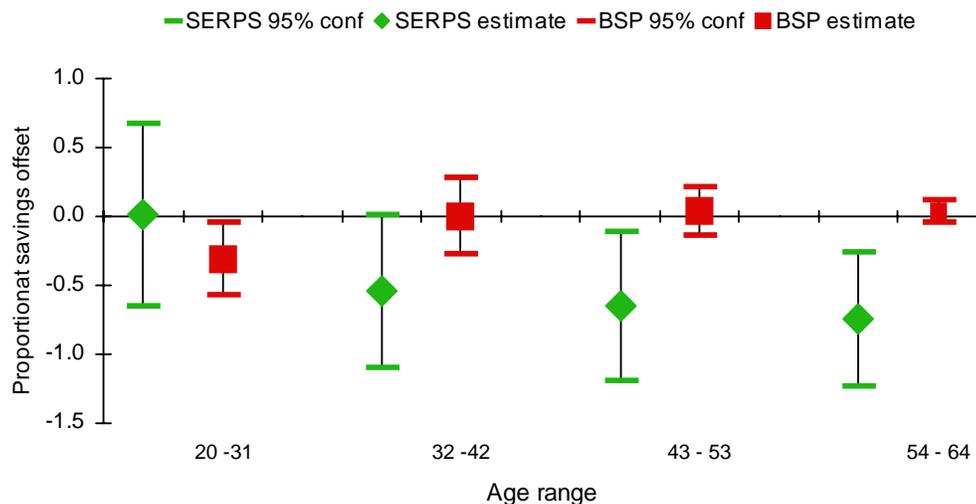
State pensions and incomes generated from private savings are the main sources of income that many individuals will have once they reach retirement. Since the state and private income sources are alternative means to achieve a given income in retirement, it is possible that individuals will offset a more generous state system by reducing their private saving. Indeed a key finding of a cross country study by Disney and Johnson (2001) is that, with the possible exception of Australia, the average incomes of pensioners relative to non-pensioners are strikingly similar across countries with extremely different state pension systems. However there is considerable variation in the composition of that income (those countries with more generous state pension arrangements have lower levels of private pension income), and the distribution of that income.

In the UK pension system, the responsiveness of private saving to the generosity of state pensions is perhaps likely to be strongest amongst individuals in the middle of the lifetime income distribution who have sufficient resources to be making non-negligible retirement savings and whose retirement income will be significantly affected by a change in the state pension system. For example in 2003–04 nearly 40% of the income received by pensioner couples in the middle quintile of the pensioner couples income distribution was from private sources.²⁹ In this subsection we look at empirical evidence on whether or not individuals do seem to offset state pensions by adjusting their consumption and saving behaviour while they are working.

²⁸ Equivalently the removal of existing incentives to save in a private pension might not have a large impact on overall saving but would also have involve redistribution away from those who currently benefit.

Recent UK evidence on this issue is presented by Attanasio and Rohwedder (2003), who look at the extent to which the consumption and saving behaviour of past cohorts during their working lives was affected by the announcement of the successive pension reforms through the 1970s and 1980s. Exploiting the fact that these reforms hit different cohorts at different ages, they estimate the degree to which public pensions (in various forms) crowd out private saving at different points in the life-cycle. Their evidence, presented in Figure 4.1, suggests that when SERPS was introduced middle-aged households offset around two-thirds of the implied new state pension wealth by adjusting other forms of saving, and the offset was more complete for older households. This suggests that income effects (and not just substitution effects) importantly affect households' decisions on saving for retirement. Moreover, given that the increase in generosity of state support implied by SERPS was in part consumed by working age individuals, this raises the possibility that individuals might respond to reductions in the generosity of the state pension system by choosing to save more. However, one important caveat is that while Attanasio and Rohwedder find a significant impact of the introduction of SERPS on saving, they find little evidence of any impact of the 1981 decision to reduce the generosity of the basic state pension by indexing it to price growth rather than to the greater of the growth in prices or earnings.

Figure 4.1: Evidence on the substitutability of state pensions and private saving from Attanasio and Rohwedder (2003)



Source: Authors' calculations based on Attanasio and Rohwedder, (2003).

One possibility is that the generosity of the introduction of SERPS was more widely understood than the reduction in the generosity implied by changing indexation. This could be related to the amount of publicity surrounding the two reforms or to public perception over how permanent the changes were likely to be – particularly as SERPS was introduced with cross party support whereas opposition parties have often been in

²⁹ Source: Table 19 of the Department for Work and Pensions Pensioner' Income Series (http://www.dwp.gov.uk/asd/asd6/pensioners_income.asp).

favour of indexing the Basic State Pension in line with earnings. An alternative explanation put forward by Attanasio and Rohwedder is that the differences could be explained by certain types of individuals being liquidity constrained. In particular those aged 20-31 might have not been able to increase their consumption in the light of increased generosity of SERPS (and hence the lack of a significant effect of the change on this group). In addition Attanasio and Rohwedder argue that lower-income individuals who may have been relatively more affected by the less generous indexation of the Basic State Pension might not have chosen to reduce their consumption in response since they were already liquidity constrained and therefore already consuming less than they would ideally like to.

If individuals do not fully adjust their personal wealth to accommodate social security wealth, then this may show up in consumption patterns later in life. Banks, Blundell and Tanner (1998) exploit exactly this insight and examine how consumption changes around the time of retirement. The fact that consumption falls in retirement is well known. But this does not necessarily mean that individuals had not saved enough – some part of the drop in consumption may be planned. By modelling individuals' life-time consumption plans, around two-thirds of the drop in consumption growth at retirement that occurred for those cohorts retiring in the 1970s, 1980s and early 1990s can be explained within the context of an optimal consumption plan. The residual third remains a puzzle, with one possible explanation being that at least some individuals had not saved enough. Evidence from panel data (Smith, 2004) suggests that it is those who left the labour market as a result of an employment or health shock who experienced a decline in their food spending and potential indicators of their well-being around the time they left paid employment.

(b) Scope for analyses of new credits in the UK?

Next we turn to the incentives underlying WTC/CTC. Section 3.2(b) showed that those who were on the taper of the WTC/CTC faced a particularly strong incentive to save in a private pension. Whether or not individuals are responding to this incentive can in principle be investigated by comparing the pension choices of those who are eligible to be on the WTC/CTC taper to those whose assessable income means that they are just above the taper. This section presents some preliminary analysis from 2003–04 when the tax credits were first introduced. This is done using data from the *Family Resources Survey* (FRS) to look at private pension coverage among those whose assessable income puts them within £5,000 above or below the top of the WTC/CTC taper. Among this group as a whole 43.6% of individuals report that they are currently a member of a private pension. Coverage is found to be higher among the 2,973 individuals whose assessable income puts them between £0 and £5,000 a year above the WTC/CTC taper than among the 2,035 individuals whose assessable income puts them on the WTC/CTC taper but within £5,000 a year from the top of the taper (47.0% compared to 38.7%).

While this could suggest that individuals are not responding to the greater incentive to save in a private pension provided to those on the WTC/CTC taper these differences could be due to other differences between the two groups. In order to control for other observable characteristics which might be related to private pension coverage we run a probit model with whether or not an individual is a member of a private pension as the

dependent variable. The second column shows that after controlling for various characteristics such as gender, age, education and household composition those who are on the taper are, if anything, less likely to contribute to a private pension. This difference of 7.5 percentage points is statistically significantly different from zero at conventional levels (but is smaller than the 8.3 percentage point difference observed in the unconditional analysis). However this regression does not control for the fact that those just above the taper have higher levels of assessable income and therefore might have been more likely to contribute to a private pension. As shown in the third column once one controls for both earnings and family income the coefficient for those on the taper changes sign to be +2.6 percentage points, although this difference is not statistically significantly different from zero at conventional levels. However the positive sign of the coefficient is consistent with what economic theory suggests (as discussed in section 3.2(b)), and an effect of the order of magnitude indicated by the point estimate would be a moderately strong response – in particular given that the data is taken from the first twelve months after the reform.

Table 4.1 Probit regression of whether contributing to a pension on characteristics, including whether eligible for WTC/CTC 37% taper.

	Marginal effects	(<i>s.e.</i>)	Marginal effects	(<i>s.e.</i>)
Male	0.050 ***	(0.016)	0.016	(0.017)
Quartic in age	Jointly significant		Jointly significant	
Couple	-0.967 ***	(0.063)	-0.960 *	(0.076)
No. of children	0.032 ***	(0.010)	-0.039 **	(0.017)
Child age < 1	0.050	(0.038)	0.051	(0.040)
Child age 0-4	0.054 **	(0.026)	0.044	(0.027)
Educ post-16	0.041 ***	(0.016)	0.045 ***	(0.017)
Employed	0.417 ***	(0.014)	0.343 ***	(0.021)
Hours of work	-0.008 ***	(0.002)	-0.006 ***	(0.002)
Partner:				
Quartic in age	Jointly significant		Jointly significant	
Educ post-16	0.054 ***	(0.019)	0.053 ***	(0.019)
Employed	-0.093 ***	(0.023)	-0.016	(0.024)
Hours	0.008 ***	(0.002)	0.007 ***	(0.002)
Earnings/1000	–	–	0.884 ***	(0.141)
(Earnings/1000) ²	–	–	-0.120	(0.274)
Family inc/1000	–	–	0.026 ***	(0.008)
(Family inc/1000) ²	–	–	-0.000 ***	(0.0001)
On taper	-0.075 ***	(0.015)	0.026	(0.023)
	Pseudo R ² : 0.1184		Pseudo R ² : 0.1508	

Note: Number of observations: 5,008 (2,035 eligible to be on the WTC/CTC taper (but less than £5,000 from the top of the taper) and 2,973 above the WTC/CTC taper (but less than £5,000 from the taper)). *** denotes that the coefficient is statistically different from zero at the 1% level; ** at the 5% level and * at the 10% level.

Further research on this issue would be helpful as the finding is extremely sensitive to both how income (and earnings) is controlled for and the precise sample used in the analysis. Moreover further research on this could potentially exploit pre-reform data to carry out a difference-in-differences analysis. The use of later years of FRS data, when this becomes available, might also be more appropriate as it would allow individuals more time to have adjusted their behaviour in the light of the change in incentives arising from this reform.

4.2.2 Responses of retirement behaviour to state pensions

As we have argued, besides adapting consumption behaviour, individuals can also alter their labour supply behaviour in response to the incentives provided by state pension and benefit systems. Postponing retirement reduces the number of years of retirement during which one needs to fund consumption, and also allows an individual to increase their earned lifetime income and perhaps save a little more for their retirement. If individuals seem not to fully offset changes in state pension wealth through their private saving, this may in part be because they also intend to adjust their labour supply in later life.

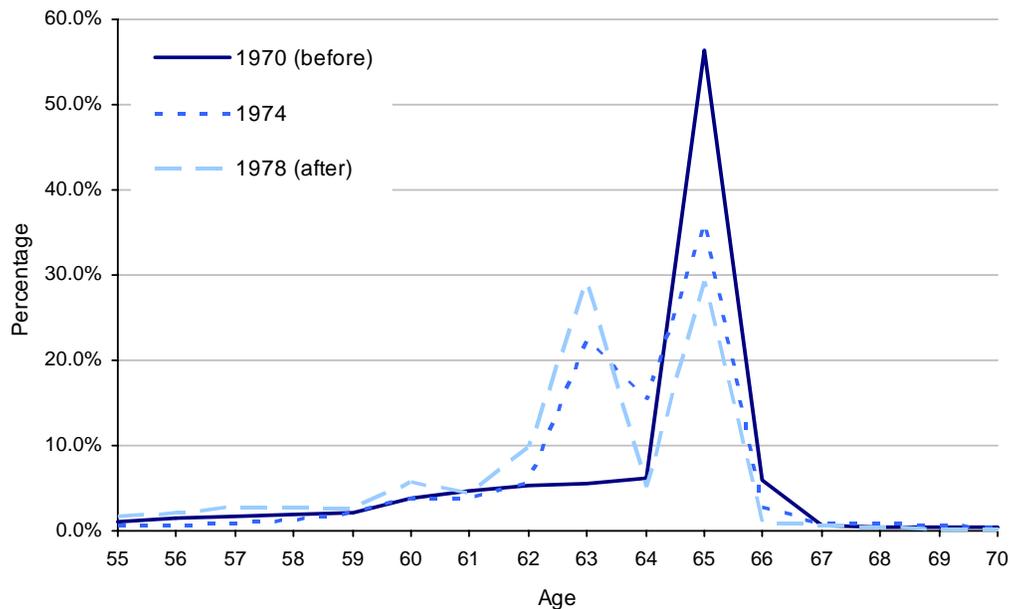
Meghir and Whitehouse (1997) provide evidence that financial and economic incentives do in general matter for retirement decisions, at least for men, in the UK. They use the employment histories of men aged 55 to 69 in the 1988–89 British Retirement Survey to construct a ‘duration’ analysis of labour market transitions in the 1970s and 1980s. Their estimates lead them to conclude that within their sample, higher earnings on the job would tend to reduce the probability of leaving work, while higher benefit payments could reduce the probability of moving back into work after a spell out of paid employment. Other non-financial factors, such as age, health, and the state of the macro-economy, were found to have effects on the likelihood of leaving or re-entering work in the directions that one would expect. The effects of these non-financial factors were often more precisely estimated than the effects of earnings and benefits. The authors therefore argue that while their results suggest that economic incentives do matter, to more precisely pin down their effects would require better data on, for example, earnings histories and pension scheme rules. Using evidence from Britain in the 1990s Disney and Emmerson (2001) find that those individuals who chose not to join their employers’ occupational pension scheme were subsequently more likely to move jobs. Given that most occupation pension schemes were of a defined benefit nature this is consistent with the financial incentives in pension arrangements affecting individuals’ subsequent job mobility (although causality could run in both directions).

A more clear-cut illustration that incentives matter for the labour supply decisions of those near retirement is provided by Disney and Smith (2002), who analyse the 1989 abolition of the earnings rule which limited the amount that individuals could earn while receiving their state pension. Disney and Smith point out that the abolition of the earnings rule actually had ambiguous implications for work incentives, since it would mean that some individuals would be able to increase their labour supply without this affecting their pension eligibility, but others who before the reform had chosen to forego (or defer) their pension may now be able to reduce their hours of work and let their pension top up their labour income. Despite this ambiguity Disney and Smith use a

difference-in-differences approach and find that ‘abolishing the earnings test had a positive effect on the hours and earnings of men, although the evidence for women is inconclusive’, and that the increase in hours among older men was, on average, between 3 and 4 hours a week.

Perhaps the strongest evidence that state pension systems affect retirement behaviour is to be found simply by observing how many individuals retire at the state pension age (which is used as the normal retirement age in many private sector pension schemes). Sixty-five remains the modal retirement age for men in the UK even though the majority of men have retired before this age.³⁰ Even clearer evidence comes from cases when retirement ages shift immediately after countries adjust the rules governing when state pensions can be claimed. A very powerful example of this happened in West Germany in 1972 when new provisions for ‘flexible retirement’ allowed individuals with a long service history to claim old-age pensions from age 63 instead of age 65 (see Börsch-Supan and Schnabel, 1998). The strong effect of this reform can be seen in figure 4.2 which plots the retirement ages of older West German men in 1970, 1974 and 1978. In 1970 (i.e. before the 1972 reform was implemented) the majority of West German men retired at age 65. Looking just six years after the reform (in 1978) as many men retired at age 63 as retired at age 65. A similar response occurred to a reform implemented in the United States in 1961. This reform allowed men to claim state retirement benefits from age 62 instead of from age 65. In 1960 the modal retirement age of men was 65 but by 1980 the most common age for men to retire was 62 (Burtless and Moffitt, 1984 and see also figure 12, page 17 of Gruber and Wise, 1999).

Figure 4.2. Distribution of male retirement ages in West Germany before and after the 1972 reform.



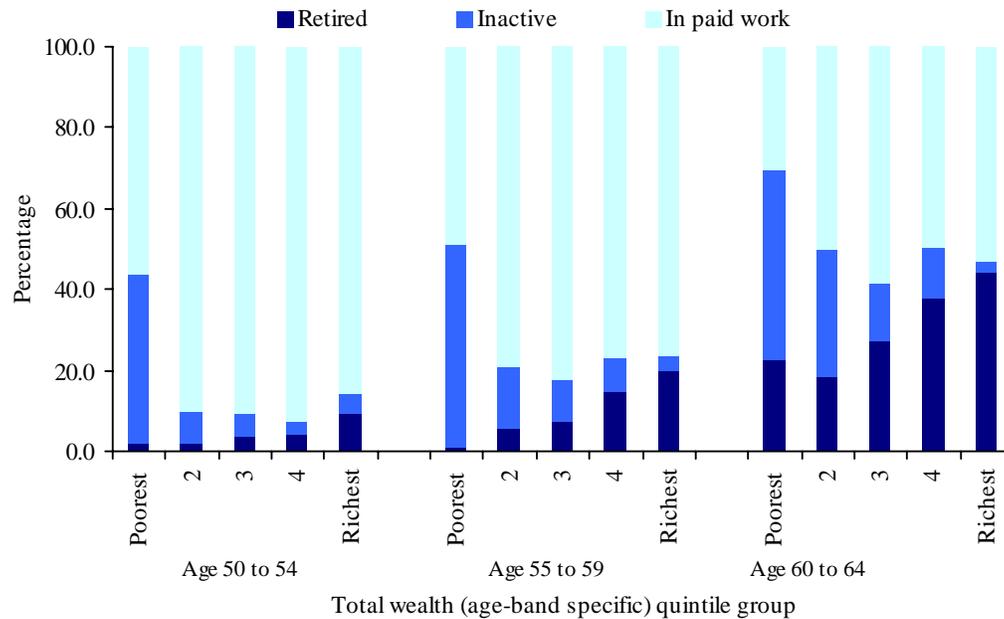
Source: Börsch-Supan and Schnabel, (1998).

³⁰ See, for example, figure 3.4 of Banks, Blundell, Disney and Emmerson (2004).

In recent years some countries have been doing – or announcing plans to do – the opposite of the West German 1972 reform, and increasing pension ages. In New Zealand the pension age increased from 60 to 65 between 1991 and 2001. The early evidence (Section 8.5 of St. John, 2001) from this episode suggests that the change has had some effect on increasing the labour market participation of older New Zealanders, thus proving that actual retirement ages can go up as well as down. A cross country comparison has shown that those with higher wealth levels tend to retire earlier and those facing accrual incentives to leave work (i.e. a smaller financial incentive, typically generated by final salary pensions, to remain in work) tend to do so (Gruber and Wise, 2004). Similar findings from the UK can be found in Blundell, Meghir and Smith (2002) and Banks and Casanova (2003). It is also the case that retirement ages in the UK have gone up as well as down: Banks and Blundell (2005) document the increase in employment rates that has occurred among both older men and older women in the UK since the mid 1990s.

Further analysis of retirement behaviour in England will be aided by the new *English Longitudinal Study of Ageing*. The first wave collected information on the health, income, wealth and social and family circumstances of around 12,000 individuals aged 50 and over in households in England between March 2002 and March 2003. Figure 4.3 shows how the economic activity of male respondents to ELSA in 2002 varied by the level of their current total wealth (including both non-pension and pension wealth) and (five year) age-band. This shows that within each age-band those who are in the middle of the wealth distribution are found to be most likely to still be in paid employment. Among those not in employment the self-reported activity varies significantly across the wealth distribution: those with relatively high levels of wealth are much more likely to report that they are ‘retired’ while those with relatively low levels of wealth who are not in employment are more likely to be inactive but not retired.

Figure 4.3. Economic (in)activity among men aged 50 to the State Pension Age in England in 2002, by (age-band specific) quintile of total wealth.



Notes: Total wealth includes pension (state and private), plus non pension wealth. Sample size = 852 individuals aged 50 to 54, 986 aged between 55 and 59 and 788 aged 60 to 64.
Source: Authors' calculations using ELSA data. For more details of wealth data used see Banks, J., Emmerson, C., Tetlow, G. and Oldfield, Z. (2005).

Recall from the discussion on page 29 that those just below the state pension age might also often need to adjust their retirement age if they are to adjust their retirement income. To the extent that those individuals in the poorest wealth quintile will be those likely to end up with the lowest non means-tested retirement incomes (section A in figure 3.4) this suggests that there might be scope for increased employment rates in response to the improved incentives created for individuals in this group by the Pension Credit, (although this would also depend on the extent to which employment opportunities exist for these individuals). Similarly those whose incentives to save are weakened by the Pension Credit (section C in figure 3.4) are likely to be those who are currently in or just below the middle of the wealth distribution. Since these individuals are most likely to still be in paid employment at older ages this suggests that the Pension Credit could lead to a fall in an employment rates alongside any increase in pre-retirement consumption. The strength of the ELSA data is that these individuals will be re-interviewed every two years so that, among other things, the determinants of retirement can be examined in much more detail than is possible with existing UK datasets.

4.3 Evidence on expectations for retirement

When discussing the analysis of Attanasio and Rohwedder in section 4.2.1, we suggested that one reason why individuals might have responded more fully to the introduction of SERPS than to the reduction in the BSP was that they more fully understood the former reform. When individuals respond to the pension system and reforms to it, and indeed when they respond to tax incentives, they will be responding given their own

understanding, beliefs and expectations about the systems and reforms that they are faced with. It may be that those beliefs and expectations do not fully capture the nature of a particular part of the pension system, either because individuals do not fully understand some element of the system or because they believe that some part of the system is not credible or will not endure. If beliefs and expectations do not wholly reflect the current rules of the system, then we cannot expect to observe responses to all elements of the system that would accord with the predictions of an economic theory that is predicated on a full understanding and belief of current rules. It is therefore interesting to attempt to learn about how well individuals understand the pension system, and what they believe about how the system will affect them.

Unfortunately, at least until very recently, there has been little UK data relating to individuals expectations that are relevant for their retirement savings decisions.³¹ Evidence from ELSA suggests that on average men and (in particular) women aged 50 and over underestimate their chances of survival to older ages (Banks, Emmerson and Oldfield, 2004). However expectations of being in paid employment at older ages are, on average, similar to the current proportions of older individuals who are in paid work (Banks, Emmerson, Oldfield and Tetlow, 2005). In addition individual's expectations of remaining in the labour market at older ages appear to square up with the marginal financial incentives to remain in work: relative to those in SERPS those aged 50 to 54 who are currently in a defined benefit pension on average report that they are less likely, and those who are currently in a defined contribution pension on average report that they are more likely, to still be in paid work five years prior to the State Pension Age (Banks, Blundell and Emmerson, 2005). There is also evidence that, on average, individuals are, if anything, over-optimistic about the amount of private pension income that they can expect to receive (Banks, Emmerson, Oldfield and Tetlow, 2005).

Good data on expectations of outcomes from pensions is not only interesting in itself, but may also be informative for assessing why individuals respond to the pension system in the way that they do. For example, by using data on a recent period of state pension reforms in Italy, Bottazzi, Jappelli and Padula (2005) are able to assess how these reforms affected expectations and then to infer how fully individuals' changes in behaviour reflected their new beliefs. To do this, these authors exploit data that include information on expected retirement age and replacement rates, as well as on household wealth and demographics. They conclude that individuals did not immediately fully internalise the implications of a series of pension reforms in their expectations of retirement outcomes, and that even their expectations about changes in social security wealth were not fully accommodated through changes in private wealth accumulation.

³¹ This is now starting to change with wave 11 (2001) of the British Household Panel Survey (BHPS) containing a question on individuals self-reported chance of living to age 75 (for those aged under 65) and questions on expected private pension income. In addition the new English Longitudinal Study of Ageing (ELSA) contains information on individual's expectations over a range of relevant events including chances of surviving to older ages and chances of being in paid employment at older ages.

5. Conclusions

Much of the pensions policy debate in recent years has focussed on the financial incentives to save for retirement provided by the tax, tax credit and benefit system. For example the interim report from the Pensions Commission published in the Autumn of 2004 described how the combined effects of income tax, tax credits and means tested retirement benefits, create incentives to save for retirement that vary substantially with an individual's current and (expected) future circumstances. In this paper we describe some of the incentives that are created by the tax, tax credit and benefit system in the UK, and also document what is known about how many people face different types of incentive. In addition we also discuss what is, and what is not, currently known about how individuals have responded to these kinds of financial incentives in the past and also present some new empirical evidence from the UK.

When examining retirement saving decisions it is important to consider both saving decisions and also the choice of retirement age. New evidence from the English Longitudinal Study of Ageing (ELSA) shows that it is low and high wealth individuals who are most likely to be out of the labour market prior to the State Pension Age. This suggests that if retirement incomes of those with low wealth are to be increased then, to the extent to which these individuals are unable to reduce their (already low) consumption, increased labour market participation is the obvious margin for them to adjust. The incentive to work for this group is potentially affected by two recent UK reforms: the introduction of the two new tax credits (Working Tax Credit and Child Tax Credit) in April 2003 and the introduction of the Pension Credit in October 2003. In addition to seeing an increased reward from delayed retirement those on the taper of the WTC/CTC will face a particularly strong incentive to contribute to a private pension at this point. We find that in cross-section there are currently more individuals who are eligible to be in this situation (11.7%) than there are higher-rate taxpayers (8.5%). We present some preliminary evidence on whether this incentive has boosted participation in private pensions among this group, the results of which are somewhat inconclusive and are worthy of further research.

Examining the distribution of current pensioner incomes with respect to the incentives induced by the Pension Credit reform we find that many single pensioners will see an unambiguous increase in the incentives to increase their retirement income (through having saved more or retired later). However there are still large numbers of single pensioners who see a reduction in the incentive to increase their retirement income (through having saved more or retired later), the majority of whom have private income which they might decide to reduce. Fewer individuals in pensioner couples are eligible for the Pension Credit. Despite this we find that a similar proportion faces a reduced incentive to acquire greater income as we did for single pensioners.

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