Financial incentives to save for retirement

Elaine McCauley and Will Sandbrook
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Summary

This paper looks at the incomes individuals can expect from pension saving under the reformed pension system described in *Security in retirement: towards a new pension system*. This opening chapter summarises the key messages in this document, and in particular:

• Recaps on the background and context to reform.

• Explains that rational choices about saving for retirement will depend on personal preferences and plans for retirement but are underpinned by two financial factors. First, the need to transfer resources from periods when an individual is working to their retirement. Second, by the payback the individual can expect after taxes, benefits and charges. The balance between these factors will differ between individuals…

• …But that whether a person actually starts saving is also affected by practical barriers to rational action, such as inertia and the complexity of the pensions system.

• Describes modelling which shows that while the payback depends on factors such as investment performance, for a large majority of potential savers in personal accounts the payback they can expect, net of tax and benefit effects, is very positive – a payback of £2 or more plus inflation for every £1 an individual saves could be expected by many.

• Shows that even the very small minority of pensioners who could face higher withdrawal of benefits during some part of their retirement could see higher payback from their saving by taking a lump sum, potentially reducing interaction with benefit entitlement.

• Shows that the proposed reforms substantially improve the expected payback on pension saving compared to the current system, while overcoming barriers to saving to enable people to take advantage of these benefits.
The final decision on saving rests, as it should, with the individual, and information will be available to support them in making that decision. This document looks at illustrative individuals given a set of assumptions, and does not constitute advice to individuals. Nor does it represent a government guarantee of a level of payback. However it does show that, subject to these assumptions, a large majority of individuals can expect a good payback from saving for retirement in personal accounts or similar schemes.

Background and context

In 1997, the immediate challenge for the Government was to tackle the unacceptable levels of pensioner poverty. The introduction of the Minimum Income Guarantee ensured that no pensioner had to live on less than £75 a week in 1999, a level which was then uprated in line with earnings rather than prices as with the previous Income Support.

The Minimum Income Guarantee was a vital step in tackling pensioner poverty. But it didn’t tackle directly the problem of those who made moderate additional provision for their retirement often seeing that saving taken into account pound-for-pound in the calculation of benefit entitlement. In 2003, the Government introduced the Pension Credit. The Guarantee element replaced the Minimum Income Guarantee, while a savings element ensured those with small savings above the basic State Pension saw a reward for their savings, receiving 60p for every £1 above the basic State Pension up to the Guarantee credit level (£114 in 2006/07). Above this level, the amount of Savings Credit reward gradually decreases until entitlement ceases. This improved the savings incentives for those likely to be on low incomes in retirement.

The Government’s policies to tackle pensioner poverty have helped to lift 1 million pensioners out of relative poverty since 1997. We are now spending an additional £10bn each year on pensioners compared to where we would have been if we had continued with the system we inherited in 1997. All pensioners have benefited from these and other pensions policies in this period, with the poorest benefiting the most.

But the 2002 Green Paper and subsequent reports of the independent Pensions Commission have made clear that there is another, longer-term challenge to face – that of undersaving for retirement. Whilst people at present will generally benefit from having saved, problems within the current system cloud the decision to save for many. If current arrangements persisted into the future, people could have contributed to their state pension entitlement for most of their lives and still not retired clear of means-tested benefits. And (partly as a result), the payback from saving, whilst reasonable, may not be attractive enough for many for them to start saving.

1 Detailed in Appendix A.
Security in retirement discussed in detail the problem of undersaving for retirement, and outlined our proposed responses to this challenge. The reforms will ensure that people who contribute for most of their lives will have state pension entitlement sufficient to get them clear of entitlement to means-tested benefits. The expected payback from saving will increase considerably, so that a median earner retiring in 2055 might see an expected payback rising from £1.13 for each £1 saved without reform to £2.55 in the reformed system.

Even where there is a strong economic case for individuals to save, many do not because of the behavioural barriers that they face – crucially, inertia and the complexity of the pensions system and of long-term financial decisions. The reforms work together to tackle these barriers.

The Government’s proposals for reform

Box 1 Summary of reform package
A new scheme of personal accounts, which will provide a straightforward opportunity to contribute to a high-quality, low-cost savings vehicle.
Automatic enrolment for eligible employees into either a personal account or other good employer-sponsored scheme.
Contributions on earnings between around £5,000 and £33,000 a year
Four per cent from employees
One per cent from tax relief
Three per cent from the employer

Reform state pensions to make them simpler, fairer and more generous, providing a solid foundation for private saving:
Linking the basic State Pension to earnings during the next parliament
Reform State Second Pension (S2P) into a simple, flat-rate top-up to the basic State Pension
Restrict the spread of Pension Credit to ensure it continues to be focused on those with small savings
Reform the contributory principle to better recognise contributions to society alongside paid work

Support and encouragement to extend working lives
Increase State Pension age in line with life expectancy
Support longer working

Streamline the regulatory environment for private pensions
Abolishing contracting out for defined contribution pensions alongside the earnings-linking of the basic State Pension
Legislation to allow conversion of Guaranteed Minimum Pension rights
Deregulatory Review
Re-examining the regulatory landscape
At the heart of the package for reform lies the proposal to introduce automatic enrolment for employees, into either a suitable work-based pension or a new low-cost personal account. Saving is an individual choice, and it will remain so under our reforms. The reforms are about supporting people in making these choices and overcoming the barriers to their doing so that exist at present. Evidence suggests that automatic enrolment can be a highly effective way to boost scheme participation through overcoming inertia.

At present, the starting point for most people is one of not saving for retirement. Introducing widespread automatic enrolment will mean that in future for most employees it will instead be one of saving, helping to overcome many of the barriers which today prevent people saving even when it is in their interest to do so. But importantly, under the new system people will retain the right to opt out of pension saving – saving will remain a question of personal choice.

At the moment, saving will be a worthwhile decision for many people. But expected payback on saving would be low enough for some that, on balance, we do not judge that it would be appropriate to seek to overcome inertia through the introduction of widespread automatic enrolment in isolation from other measures. Our wider reforms to the state pension system, and to private provision with the introduction of a minimum employer contribution, will considerably improve the payback that many people can expect to see.

Some people will have a higher payback than others from having saved in personal accounts. The figures in this paper do not represent forecasts or guarantees of outcomes for individuals. Rather, the analysis shows that people’s expected payback from saving will generally be improved as a result of reform, with the large majority of people able to expect a payback of at least £1 plus inflation for each £1 that they save. This is the context within which we are introducing automatic enrolment.

There is a risk that with the benefit of hindsight some people may get a lower payback from saving. But there is also a considerable risk to society and to individuals from a substantial number of people seeing significant and unplanned falls in their standards of living when they retire. Automatic enrolment shifts the default position to one of saving, and our reforms mean that for the vast majority this default position will see them better off in retirement for having saved. There are not centrally identifiable groups in working age who may see a lower payback at retirement such that those people should be excluded from automatic enrolment. But of course, it will be vital to give people information to help them to identify whether this might be the case for them and to support them in their choice over whether to remain in a pension.

The reforms set out in *Security in retirement*, by improving the case for saving for many, mean that in the large majority of conceivable cases people can expect to be better off for having saved for retirement. And we judge on this basis that the introduction of automatic enrolment is a legitimate aspect of these reforms.
Why do people save?

Rational choices about saving depend on two factors: the need to smooth income from periods where it is higher to periods where it is lower (known as the income motive); and the payback that a person can expect to receive in return for their saving (the price or substitution motive).

Income motive

By deferring the ability to spend money now, people should expect to see an increase in their ability to spend in the future. This is known as income smoothing. People’s incomes will vary at different points in their life-cycle. It is unlikely that they will want their standard of living to fluctuate in line with their income, but instead will prefer a smoother pattern of consumption than if they simply spent their money as they earned it. People can smooth consumption by saving money in periods of higher income to spend in periods of lower income. Retirement saving is a good example of this. People’s incomes while they are in work will tend to be higher than when they have retired. So if they want to ensure that their consumption doesn’t fall off dramatically when they retire, it makes sense for them to defer some of their consumption to this later period by saving.


Price motive

In addition, saving should represent good value to people – that is, they should consider the payback that they might expect in retirement from saving £1 today as worth giving up the ability to spend that £1 now. Again, people will have different views as to what represents good value – because of the need to smooth consumption, some people will want to save even where the payback they can expect from doing so is apparently quite low. They might, for example, be perfectly
willing to save £1 today to provide less than an extra £1 in retirement if the alternative is an unacceptably low level of income later in life. Likewise, those already expecting their income to be relatively high in retirement may not wish to save even if the payback might be very high.

**Barriers to saving**

Different people will place different levels of importance on these different factors. But in addition, at present many people’s decisions are unlikely to be fully informed and fully rational. The complexity of the state pension system makes planning for retirement income difficult. Even where there is an apparently strong economic incentive to save based on these factors, inertia makes it less likely that many people will voluntarily start saving, while for many moderate earners, providers are reluctant to seek out their custom given the difficulty in keeping products profitable within the existing charging structure. People also place an exaggerated value on spending now when compared with spending a long way into the future.

**Payback from pension saving**

This paper looks at the payback that people might expect to see from saving in the future. The analysis in the paper shows that under the reformed pension system, the expected payback on saving in a large majority of conceivable cases is good. We can be confident that most people can generally expect to be better off for having saved, and this provides an environment suitable for the introduction of automatic enrolment.

The analysis in this paper is based on outcomes that can be projected for people who have saved in a personal account or an equivalent exempt scheme, and hence retiring a considerable distance into the future. With projections of this nature there is inevitably a degree of uncertainty. In order to produce projections of this nature assumptions need to be made about investment growth, earnings levels etc which are likely to be increasingly unstable if rolled forward over a significant period. And it is also unlikely that there will be no further changes to the tax and benefit system in the next 50 years – the levels of income-related benefits in particular may well change and this will impact on the payback that a person will see. It will be significantly more difficult for future governments to change entitlements derived from private savings, although like other forms of private saving they may be subject to risks around investment and longevity.3 This analysis does not purport to predict how some of these variables may play out, and nor can any reasonable test of the appropriateness of the widespread use of automatic enrolment. So both the analysis and the benchmark applied can only relate to reasonable assumptions based on what we know today.

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3 These risks will take different forms for different types of investment. Returns from an annuity will depend upon the length of time it is received, while the longevity risk around other investments is that an individual may outlive the investment, or, for fear of outliving it, may spend it more slowly than they could.
When people save in a pension, they benefit from tax relief and any investment growth, and in future most people will also benefit from the presence of an employer contribution. These factors between them, for someone saving throughout their working life, might be expected (subject to investment fund growth and other factors) to roughly quadruple the value of their original contribution – so £1 saved might be worth nearly £4 in real terms by the time they retire. But there are also factors that operate in the opposite direction to reduce this amount. For example, pension funds are subject to charges, and once drawn down may be taxable and/or result in lower benefit entitlements. So we have analysed, after these factors are taken into account, what people can expect to get back. For example, whether they can buy as much or more in retirement with the money they have saved than if they had spent it during their working life. We have used the term ‘payback’ to describe the increase in income that might be expected over the length of retirement after all these factors have been taken into consideration, to distinguish it from the return achieved on the investment which is only one part of the calculation.

The analysis in this paper shows that, under the reformed pension system, the large majority of people can expect to get a payback of more than inflation. It also shows that the perception that possible entitlement to Pension Credit makes it not worthwhile to save is unfounded. It has never been the Government’s intention that a significant majority of pensioners should be entitled to Pension Credit, and the reforms announced in Security in retirement will ensure that this indeed never comes to pass, but Pension Credit has a vital continued role to play in tackling pensioner poverty. The analysis in this paper demonstrates that most of those entitled to Pension Credit in the future can still expect a significant payback from saving. A long-term saver in personal accounts receiving Savings Credit (but no other benefit) in retirement, for example, could expect to get back around £2 in real terms for every £1 they have contributed after taking account of the benefit system. Someone who is above the threshold for Pension Credit entitlement altogether can expect a still higher payback than this. And even someone starting a pension late in life and gaining little or no investment growth could, thanks to the matching contribution, expect to gain an extra 20 per cent even if they were on savings credit in retirement.4

It is also important to recognise that Pension Credit will be playing a subtly different role in the future to the one it plays now. At present, many lifetime low earners retire with some Pension Credit entitlement because historically it has been difficult for them to build a substantial second pension. The introduction of S2P means that current low earners are much more likely to retire with a state entitlement that takes them above the means-tested level. Increasingly, Pension Credit will operate more as an insurance against certain life events – severe disability, caring responsibilities in old age – that are not necessarily predictable at the point that someone takes the decision to save. By 2050, approaching half of those entitled to Pension Credit will be in receipt of a higher applicable amount.

4 Assuming they have no other tax or benefit offsets, and subject to annuity rates.
Table 1.1 shows the rates of payback (increase in net income over retirement per £1 contributed) which might be expected in personal accounts for some illustrative individuals, subject to factors such as investment performance. It assumes they are single and have no other savings (except as stated). All these individuals can expect to receive more in real terms than they have contributed, and most can expect to receive significantly more. Other characteristics, such as previous saving or being in a couple will tend to increase the payback further in most cases. Of course, the payback an individual can expect will depend on many factors such as investment performance, and the figures presented in this document do not represent a specific prediction or a guarantee. Details of the assumptions made are in Annex A.

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Men Age in 2012</th>
<th>Women Age in 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td>55 with saving</td>
</tr>
<tr>
<td>£6,000</td>
<td>£1.99</td>
<td>£1.19</td>
</tr>
<tr>
<td>£15,000</td>
<td>£2.52</td>
<td>£1.67</td>
</tr>
<tr>
<td>£23,000</td>
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<tr>
<td>£33,000</td>
<td>£2.57</td>
<td>£2.09</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: The saver is assumed to have previous pension savings which would represent a pension of £50 a week (around £50,000). The payback quoted relates to the payback on their extra personal accounts or exempt scheme saving only.

A median earner contributing 4 per cent of earnings from age 25 could expect to increase their income at retirement by almost a third through saving in personal accounts or a similar scheme.

Fluctuations in investment growth and annuity rates, different life expectancies and other factors mean that the rate of payback cannot be guaranteed. Also, a small number of people may see a lower expected payback due to complex circumstances such as entitlement to Housing Benefit and Council Tax Benefit as well as Pension Credit. Many of these will have only small, if any, personal accounts pension. Where they do have limited amounts of saving, they are likely to be able to take their pension as a lump sum, which may improve the payback that they get.5

5 Under the ‘trivial commutation’ rules, people are allowed to take pension pots below £15,000 as a lump sum. Those with larger funds may take 25 per cent of the fund as a lump sum. Pension Credit entitlement is calculated with a capital disregard of £6,000. So a significant proportion of any lump sum taken is likely not to be taken into account for these purposes.
Those entitled to the Guarantee element of Pension Credit only in the reformed system (around 6 per cent of pensioners in 2050) could potentially see 100 per cent withdrawal rates – their income from saving will be taken into account pound-for-pound when calculating benefit entitlement. However, these groups will have severely deficient contribution records – under the reformed pension system, anyone accruing state pension by working or caring for 24 years or more will be lifted above this level on retirement on their state pension alone. People with less entitlement than this are unlikely to have spent long periods having been automatically enrolled or having had significant opportunity to save. Again, they may be able to improve the payback they receive by taking their pension as a lump sum.

These figures do not take account of any increase in tax credit or benefit during working age due to making pension contributions. If the low earning 25 year old male shown above were eligible for tax credits for 15 years, then considering his contributions net of any offsetting increase in tax credit payments could increase his expected payback from £2.52 to £2.81 per £1.

Expected payback for those with non-standard careers, such as those taking long periods out of the labour market due to caring responsibilities, is also good under the reformed system, and significantly higher than without reform.

Some people may choose not to save despite being able to expect a good payback, for example those with expensive long-term debt may be better off paying back debt before beginning to save. It will be important to provide the right information to enable people to make appropriate choices.

This analysis supports the Government’s belief that the introduction of automatic enrolment into personal accounts is the right approach. A large majority of people can expect a good payback and will benefit from a higher income in retirement. However a level of payback cannot be guaranteed, and the choices and characteristics which may leave a small number of people at higher risk of low payback may not be apparent to either individuals or Government during working life. The risk an individual may fall into one of these groups must be weighed against the risk of undersaving if the reforms are not introduced. Automatic enrolment is likely to maximise their overall welfare. Those who wish not to save for retirement, or to save in another form, are not precluded from doing so by automatic enrolment. Where particular characteristics do point to the potential for a lower payback it will be important to ensure information is provided to enable them to choose appropriately, taking into account the likelihood that circumstances will change and the possibility of taking a pension as a lump sum.

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6 Pension contributions are deducted from income taken into account by many benefits and tax credits.
The impact of reform on the payback from saving

The reforms that were outlined in *Security in retirement* work together to enhance the payback that people can expect from saving, and make clearer to them what to expect in retirement in terms of income from the state. This in turn will help them to plan for what more they need to do for themselves through saving and working. Lower charges and the presence of an employer contribution will directly enhance the value of pension funds. And a more generous state pension that takes more people above the threshold of entitlement to income-related benefits will also increase the expected payback for many people. Table 1.2 shows the expected payback under the reforms and the expected payback if no reforms were implemented for someone aged 25 in 2012.

**Table 1.2 Projected real payback assuming no reform and after reform**

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Men Without reform</th>
<th>Men With reform</th>
<th>Women Without reform</th>
<th>Women With reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>£6,000</td>
<td>£1.15</td>
<td>£1.99</td>
<td>£1.14</td>
<td>£2.02</td>
</tr>
<tr>
<td>£15,000</td>
<td>£1.15</td>
<td>£2.52</td>
<td>£1.14</td>
<td>£2.57</td>
</tr>
<tr>
<td>£23,000</td>
<td>£1.13</td>
<td>£2.55</td>
<td>£1.13</td>
<td>£2.64</td>
</tr>
<tr>
<td>£33,000</td>
<td>£1.11</td>
<td>£2.57</td>
<td>£1.11</td>
<td>£2.65</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: The ‘without reform’ columns assume the system continues as currently legislated, but with the standard guarantee credit continuing to be earnings uprated. It does not represent payback from saving in the years prior to 2012.

The reforms to the state pension system strike a balance that reflects the key trade-offs at the heart of state pension reform and the impact that state pension entitlement has on savings incentives. Spending on the state pension cannot be without limit, and the gains that we have made against pensioner poverty must be maintained. Targeting pensioner benefits on those who need them the most balances this need for affordability and for an adequate response to pensioner poverty. But income-related benefits may reduce the payback from saving and, if they were to spread to a significant majority of pensioners, might affect perceptions of the benefits of saving for retirement which might discourage saving even where the potential payback remains high. So contributory state pensions need to be set at a level which balances affordability with the extent of entitlement to means-tested benefits to ensure that incentives overall remain good. The proportion of pensioners
on income-related benefits is already lower than it has been in the recent past, and reforms will prevent Pension Credit spreading up the income distribution in the future.\(^7\)

A more generous state pension system than the one that we propose might further increase the payback that some could expect from saving. But it would reduce incentives in other ways. A state pension paid to all at the level of the Guarantee Credit would add considerably to the cost of reform – perhaps by around £20 billion or more per year in the early years. This would require increased tax rates elsewhere in the economy, which could damage incentives both to work and to save. Further, the higher state pension could also reduce the income incentive to save, since people would be more willing to rely on state pension only in retirement.

A less generous system could see increased entitlements to income-related benefits and a reduction in the price incentive. By contrast, the system that we propose, in combination with the introduction of personal accounts, will see the large majority of people, including the majority of those in receipt of Pension Credit, expecting a payback well in excess of £1 plus inflation for each £1 that they save, subject to factors such as investment growth and fluctuation in annuity rates. We believe this provides an environment suitable for the introduction of automatic enrolment whilst not placing an excessive burden on public spending. The decision to remain in a pension will remain with individuals, who are best placed to judge whether their own circumstances mean that they should opt out.

### The impact of other choices and characteristics

The figures/tables presented in this paper inevitably make a number of assumptions. The tax and benefit system of the future will depend upon the policies of the government of the day, the value of investments may fall as well as rise, and the total pension received will depend on the length of life, amongst many other variables. The figures presented here, therefore, cannot be taken as showing results that will definitely be achieved. Chapter 4 of this paper looks at the impact on our estimates of varying some of these assumptions.

### Summary and conclusions

Saving in a pension will not be the right thing for all people, all of the time. For a very small number of people, saving in a personal account may simply not be the right decision. Factors such as personal debt, other forms of saving and sources of retirement income, expectations for income in retirement and simply the affordability

\(^7\) Source: Pensioners’ Income Series. Approaching 60 per cent of pensioners were receiving means-tested benefits in the early 1980s and nearly 40 per cent in 1996/97, falling to 34 per cent in 2004/05, the latest year for which figures are available.
of saving will mean that for some, a personal account or similar employer scheme is not the right option. These people can choose to opt out, and it will be important to provide the right information to enable people to make the right choice for them, including information about situations where saving may not be the best choice, and about the possibility of taking some or all of a pension as a lump sum.

What is clear is that most people, having saved in a personal account, can expect not only to have increased their income in retirement but to have done so with a reasonable payback on their contributions, subject to factors such as investment growth. The Government has a responsibility, in introducing automatic enrolment, to be confident that saving in a pension can be expected to benefit a large majority of those eligible for automatic enrolment, and that there are clear opportunities for those who want to opt out, and we believe those tests are met by this policy.
1 Why do people save for retirement?

1.1 Chapter summary

People are subject to different influences and constraints on their decisions about whether and how much to save for their retirement. This chapter outlines in more detail the range of considerations that may affect people’s decision to save. There are two main components to the economic incentive to save for retirement:

• The income incentive concerns the desire to smooth consumption across a lifetime when income is often higher in some periods of life than in others. People generally have higher incomes in working age than in retirement, and so will have an incentive to save some of their working age income to consume later in life.

• The price or substitution incentive concerns the payback on saving – how much income someone can expect in retirement if they save £1 today. A person is more likely to save for retirement if the payback they can expect is high, ie if the price of increasing retirement income by £1 payback is lower.

In pure economic theory, people will make decisions about how much to save based on these economic incentives. But even where there is a strong incentive to save on this basis, practical barriers to doing so may result in someone not saving, or not saving enough, for their retirement:

• Even where incentives are strong and someone has identified a need to save, inertia over long-term financial decisions can prevent them from doing so.

• Complexity, particularly in the state pension system, can make it difficult for people to know what to expect from the state when they retire, and therefore to plan for what further provision they may want to make for themselves.
• Providers find it difficult to profitably serve low-moderate earners within the existing charging regime, due to the low level of their contributions and lack of persistency of their savings.

• The reforms to the state system, and the introduction of automatic enrolment into low cost personal accounts, are designed to improve the economic incentives to save and overcome the practical barriers to saving for retirement. However the final decision rests with the individual.

1.2 Why do people save?

There are a myriad of potential factors that influence whether someone starts, stops or continues to contribute to a private pension arrangement or other retirement savings plan. The most basic test of whether it is worthwhile saving for retirement is whether saving successfully transfers some resources to later life, and at what payback. But people also consider non-economic factors such as their plans for retirement and the degree of responsibility they feel for providing for themselves in retirement as well as financial or economic considerations such as the affordability of saving.

1.3 Economic motives for saving

In standard economic terms, there are two broad reasons why people might want to save in a pension, which might loosely be termed as price and income motives. The income motive is connected with the degree to which people feel they need to forego consumption today in order to boost their consumption in retirement. The price or substitution motive is more concerned with the payback that an individual gets from saving – people will want to get a good payback on their investment.

1.3.1 Income motive

The most basic test of whether it is worthwhile saving for retirement is whether saving successfully transfers some resources to later life. This will be the case for the vast majority of people.

Individuals who do not make any private provision will have to rely on state entitlements in retirement, whether from contributory state pension or income-related benefits. Some people may consider this sufficient, but for many people it will represent a significant drop from the income which they are used to. In order to avoid this drop in income, people may sensibly wish to save during periods of higher income to increase their income and living standards in retirement, smoothing their income and consumption over their life-time. This is referred to as the income motive.

Replacement rates can be used to look at how much income an individual may want in retirement. They measure gross income at retirement compared to in-work income, and the Pensions Commission has suggested benchmark replacement rates
varying from 80 per cent for those on the lowest incomes (under £9,500 in 2004) to 50 per cent for those earning over £50,000. Needs change over time, so some reduction in gross income on retirement may not necessarily mean a fall in living standards compared to earlier years – mortgages may have been paid off, children may have become financially independent, people may now be prepared to draw on savings rather than building them up, and of course they are no longer making pension contributions.

It is worth noting that a higher contributory state pension may have a negative impact on the income incentive to save. A higher state pension income in retirement will reduce the amount that someone needs to save in order that they meet a given level of total retirement income. In this sense, reforms to the state pension system are balancing a number of considerations. At the heart of the reforms is a trade-off between the economic efficiency of targeting pension benefits and the potential for targeting to reduce the payback that people might see from their private saving. Removing means-testing altogether is not a viable proposition financially without an accompanying increase in the numbers of poor pensioners. And paying everyone a much higher state pension at the level required to do this would not only be very expensive for the taxpayer but could also reduce incentives to save and work through higher taxes, and to save through the reduced income incentive to save.

*Economic and social welfare impacts of pension reform* looks in more detail at the benefits of income smoothing. It shows that there will be significant welfare gain to society from pension reforms through enabling people to smooth their income better and postpone consumption to retirement. People are likely to have lower incomes in retirement than they do during working age, and therefore are likely to value their consumption more highly. So £1 will often be worth more to someone in retirement than earlier in their life, suggesting that smoothing consumption is likely to provide a welfare gain even before taking account of any potential increase in consumption due to the payback on saving.

**1.3.2 Price/substitution motive**

Another motive for investing is to gain a payback on that investment. This is called the price or substitution motive as it reflects the amount of extra income in retirement produced by each £1 of contribution. A positive real payback means that the investment has returned more (in real terms) than the individual contributed. The payback will take into account the employer contribution and taxpayer match and also the effect of any charges, tax liability and benefit offset in retirement. This publication focuses primarily on this motive.

A business would typically choose to invest in a project if it generated a return equal to, or in excess of, a given ‘hurdle rate’, where this would usually (though not always) be set at the cost of capital. For individuals, there is no such obvious hurdle. The decision to save will depend on personal preferences and circumstances. It may take into account wealth held outside pensions, other income sources, expected calls on income now and in the future, plans for retirement and affordability of saving, as
well as the expected payback. Most people prefer, other things being equal, to spend now rather than in the future – this preference can be expressed through discount rates\(^8\) – but this should be set against the benefits of smoothing income. In a survey nearly half of people agreed that it was more important to live well now than save for the future, but half disagreed.\(^9\) However, most people will see the payback on retirement saving – the amount of extra income they can expect to receive from their saving – as one of the key considerations. This publication describes the payback that can be expected in personal accounts.

1.4 Barriers to saving in practice

In practice, there are many barriers to saving which prevent people acting as the standard economic theory suggests they should. *Security in retirement: towards a new pensions system* set out the evidence underlying our analysis of these barriers.

Box 2 sets out the barriers to saving faced by individuals. This is compounded by the high costs which providers face in selling to individual consumers. The Pensions Commission’s research suggested that it costs around £800 to sell a personal pension to someone working for a medium size employer, and that more than a third of all personal pensions contracts lapse after four years.\(^{10}\) This has two effects. The first is high charges, which despite the falls associated with the introduction of stakeholder pensions, can reduce the funds by up to 20 per cent compared with the lower charges available in some occupational schemes and potentially in personal accounts. The second is that providers may not find it economic to sell to low-moderate earners, who are likely to have lower funds generating lower revenue than higher earners.

Existing occupational pensions can provide good low-cost pensions for groups of people of all earnings levels. But since the 1970s employers have been retreating from occupational pensions, with many (though not all) either switching from Defined Benefit to Defined Contribution schemes and lowering their contribution rates, or ceasing to contribute to employee pensions altogether, as increasing life expectancy and the end of the high equity market in the late 1990s pushed costs higher than had been anticipated when the schemes were designed.

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\(^9\) Retirement Planning Monitor 2005, Marketing Sciences Ltd. The survey is among 1,000 people aged 22–64 who take financial decisions within the household.

\(^{10}\) *Pensions: Challenges and Choices: The First Report of the Pensions Commission.*
Box 2 Barriers to saving for retirement

Conventional economics suggests that people should try to smooth their spending over their lifetime. However, actual spending tends to track income more closely than these theories would suggest.

Behavioural economics is the combination of psychology and economics, and helps to explain people’s decision making. It has identified a number of reasons why people do not save for retirement, even when it is in their interest to do so. People may realise they should save for retirement but lack the willpower to change their behaviour appropriately. Inertia often leads people to follow the path of least resistance in decision making, making the easiest rather than necessarily the best decision, and procrastination can lead to them not making any decision at all.

Attitudes will also influence savings behaviour although the relationship between attitudes and behaviour is complex. Some people live for today and struggle to see what their future needs might be. In a recent survey 11 47 per cent of people agreed that ‘it’s more important to live well now than to save for the future’. However, 50 per cent disagreed. Similarly 86 per cent disagreed with the statement ‘I think it’s too early to start saving for my retirement.

These responses suggest that while many people recognise the importance of retirement saving in principle, other considerations act as barriers. One is perceived affordability. A number of surveys have found the reasons most frequently given for not having a pension are insufficient earnings/inability to afford one.12 This applies both to people who have never had a non-state pension and those who had one in the past but no longer contribute.13

Trust and confidence may also act as a barrier to saving for retirement through a pension. In 2005 almost one third of people (31 per cent) disagreed that ‘a pension is the best way to provide for retirement’, although 56 per cent of people agreed with the statement.14 A significant minority – 13 per cent were unable to answer the question, reflecting a further barrier to saving for retirement – low levels of knowledge and understanding of pensions. Sixty-seven per cent of people agreed that ‘I find all pensions confusing’.

11 Retirement Planning Monitor 2005, Marketing Sciences Ltd. The survey is among 1,000 people aged 22-64 who take financial decisions within the household.


Box 3  Estimates of the number of undersavers

Security in retirement: towards a new pensions system defined undersavers as “those who are likely to receive an income that does not provide for their reasonable expectations of quality of life during retirement.” As expectations vary amongst individuals and data is limited measurements of undersaving are problematic to derive. However using the most robust data now available, DWP estimates based on analysis by the Institute of Fiscal Studies suggest that seven million people are not saving enough to give them retirement incomes they are likely to consider adequate. But producing estimates of this nature are difficult and so the estimate could be as high as those made by the Pensions Commission.

While the exact number may be difficult to estimate, these estimates agree that without reform, millions of people could face unexpected and unwelcome drops in their income in retirement.

1.5  Pension reform and the case for saving

1.5.1  Automatic enrolment and personal accounts

Each employee will have the opportunity to opt out of personal accounts (or choose to save if they are not automatically enrolled into a pension). Economic theory would suggest that each individual could therefore decide whether the expected payback on his or her own savings and the value of these savings is sufficient for him or her to wish to save, and act accordingly. In reality, however, few people perform such calculations before making financial decisions, and many people, faced with a difficult decision about long-term saving, take no action at all. Automatic enrolment is a powerful tool which enrols those who make no active decision into a pension, so the default is to be saving rather than not.

Economic and social welfare impacts of pension reform shows that there will be significant welfare gain to society from pension reforms through enabling people to smooth their income better and postpone consumption to retirement. This is separate to the question of what rate of payback they can expect. We have looked at the impact on the population as a whole, and on groups within that population, to ensure that there are no significant groups of people being automatically enrolled against their best interests. As discussed in the Summary, it is inevitable that some people will see a lower payback than others. But most people will be able to expect

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15 Even pension experts tend not to perform such calculations in an exact manner. This may be through inertia, or through a rational approach which suggests that, given the uncertainties, the time involved in producing such calculations may outweigh the expected benefit of choosing the economically optimal decision rather than deciding through more generic means.
a reasonable payback on their savings in personal accounts and equivalent exempt schemes, and in general it will not be possible to identify in advance those groups which are at more risk of a lower expected payback.

The analysis in this paper looks at the expected payback after taking inflation into account. A payback equal to inflation would mean that the individual can expect to get out, in real terms, exactly what they put in, that is they can expect to increase their consumption over the length of their retirement by exactly the amount they have postponed in making contributions. It does not take into account changes in their level of income or calls on that income over their lifetime, just the changes in net income in retirement for each £1 contributed.

This does not show whether any particular individual rationally should or should not save. Someone otherwise likely to face very low replacement rates might want to save even if £1 contributed gets less than £1 real increase in retirement income. Conversely, those with a high expected replacement rate from other sources might not want to save even for a much higher payback. Also, results will depend on factors such as the growth of the investments, which will depend on the choices individuals make as well as possibly variability in stock market growth (individuals will be able to choose to invest in a low-risk fund) and variations in annuity rates.

However it provides a reasonable approach to analysing the benefits of saving, and automatic enrolment. Someone getting out exactly the same in real terms as they put in has the same opportunity to consume over their lifetime. By saving they have simply moved that ability to consume from working life to retirement. A payback above inflation would mean that they have increased their ability to consume over their lifetime, a below-inflation payback would mean they have postponed some ability to consume (as discussed above, the value of that extra consumption may be greater in retirement when incomes tend to be lower) though the expected absolute level of consumption would be lower.

As part of their consideration of the payback, people will want to consider the impact of any withdrawal of income-related benefits, and the risks and limitations of each income source. Some people may prefer the flexibility and security of a private income, for example if they do not plan to spend their retirement in the UK, or if they want flexibility around retirement ages. Personal accounts will provide choice between relatively safe investments and the option to take greater risks in the hope of greater rewards.

The analysis in this document shows the expected payback after taking into account any benefit offset, and while outcomes are always uncertain, reasonable expectations of the payback available seem sufficiently high to make saving appear worthwhile for most people.

Personal accounts, together with existing private provision, can provide accessible, low-cost saving for all. The automatic enrolment element recognises that inertia and lack of understanding are key barriers to individuals saving although economists
might say they rationally should. Automatic enrolment means that for employees, the default option will be to be saving for retirement. Many people may want to save at more than the default rate to meet all their expectations for retirement, but employees who make no active decision will, under reform, have some private pension in retirement.

### 1.5.2 State pension reform

There are also concerns around inequalities in the state system. The Government set five tests for reform, which any new pensions package must meet:

- **promote personal responsibility**: tackling the problem of undersaving for retirement;
- **be fair**: protecting the poorest, and being fair to women and carers, to savers, and between generations;
- **be simple**: clarifying the respective roles of the State, the employer and the individual;
- **be affordable**: maintaining macroeconomic stability and striking the right balance for provision between the State, the employer and the individual; and
- **be sustainable**: setting the basis of an enduring national consensus, while being flexible to future trends.

*Security in retirement: towards a new pensions system*, building on the work of the Pensions Commission, set out a proposed package of reforms. These reforms work together to meet the five tests for pensions reform, a key part of which is ensuring a sound basis for saving.

The reforms will support saving in a number of ways. A more generous state pension system will lift more people out of entitlement to income-related benefits, improving the rates of payback that they can expect to see on their savings. By 2050, those with a full or nearly full National Insurance record from work or other social contributions will have sufficient state entitlement to ensure that on retirement, they are taken clear of Pension Credit entitlement entirely. By 2050, only a third of pensioners are forecast to be entitled to Pension Credit under the reformed system, and approaching half of these will be those who are eligible for more than the standard rate due to additional needs such as disability. **Crucially, only around six per cent of pensioners will be entitled to the guarantee credit only – those who are eligible for savings credit in retirement can expect to see a positive real payback on their investment.** And by simplifying the state system, they will help people to plan for their retirement with a greater sense of what they can expect from the state and therefore what more they will need to do for themselves to provide an income in retirement that meets their expectations.

Saving is already worthwhile for many people under the current system. But these reforms, by providing this solid foundation for saving with a restricted role for
Pension Credit, the state system further supports the achievement of a good payback for those saving privately. Perhaps just as importantly, it avoids the perception that saving is less worthwhile under Pension Credit, which can damage savings incentives among those with less knowledge of the pensions system by more than would be justified by the impact on the payback.

However the final decision rests with the individual. The Government believes it is right that individuals should take personal responsibility for their own retirement plans, and each person should weigh up their short-term and long-term interests before deciding whether to opt out of (if automatically enrolled) or opt in to (if not) personal accounts.
2 The impact of pension saving

2.1 Chapter summary

When an employee contributes to a personal account, they receive an employer contribution and tax relief that between them double the amount of money going into the account. The balance of that account is then subject to investment performance and the expected payback will depend upon the annuity rates available. With these elements taken into account, someone saving over a full working life might see a fund worth close to £4 plus inflation for every £1 they have put in.

But the fund is also subject to charges, and on retirement the income drawn down is taxable and may also lead to reduced entitlements to income-related benefits. The vast majority of people – anyone who is not on 100 per cent marginal deduction rates – will be better off in retirement from having saved. A large majority can expect to receive more than £1 plus inflation. And many of those who would face high marginal deduction rates will be able to benefit from rules which allow small pension pots to be paid out as a lump sum, potentially reducing any interaction with benefit entitlement and so increasing the payback.

Other factors can also affect the level of the payback that people may get. For example, as many benefits are calculated at a household level, living with a partner can improve the payback on saving. Under a number of simplifying assumptions about these factors, though, our analysis shows median earners saving in a personal account for most of their working lives can expect to see a significant improvement on their incomes in retirement as a result of saving, with incomes increasing by around one third. Falls in possible consumption during working age are small compared to the increases people see in retirement.

Subject to factors such as investment growth, an average earner might expect to see £2.55 in real terms in retirement for each £1 saved during working life. In addition,
consumption in retirement when incomes tend to be lower could be more valuable to people than equivalent consumption in working age. And these figures also take no account of the fact that many working age benefits disregard pension contributions in assessing income, offsetting to a degree the extent of consumption foregone. So the ratio of £1:£2.55 is likely to be an understatement of the improvement in welfare that someone might expect to see from saving. Income levels, age when someone joins the scheme and the presence of prior saving can all affect the payback that people get, but most individuals continue to see a positive expected payback from saving when these factors are adjusted. A long-term saver eligible for savings credit (but no other benefit) in retirement could still expect to get over £2 for every £1 contributed.

A median earner saving from age 25 could increase income at retirement by almost a third by saving at the default level in personal accounts.

Chapter 1 of this paper discussed the main incentives for saving for retirement. This chapter looks in more detail at the financial incentives to save for retirement under the system proposed in *Security in retirement: towards a new pensions system*.

Overall the rate of payback on pension saving is affected by a number of factors. The most obvious is the return received on investment, but also important is the impact of the tax and benefit system both in working life and in retirement (which depends on household characteristics as well as the structure in place), the life expectancy of the saver, and choices around retirement and annuitisation.

Inevitably, then, this and the following analysis make several simplifying assumptions. Full details are given in Annex A, but some of the most significant are:

- The base case presented is single, with median earnings.
- The individual has no other savings or income in retirement other than state pension and any entitlement to the standard rate of Pension Credit and Council Tax Benefit. Any entitlement to income-related benefits during working life is not included.
- He or she is inactive (and not accruing state pension entitlement) from 18 to 25 then works until state pension age, so has full basic State Pension and good but not maximum State Second Pension entitlement.
- The pension fund grows at 3.5 per cent a year above inflation\(^{16}\).
- Age of death reflects the Government Actuary’s Departments’ estimate of gender-specific life expectancy at retirement, and annuities are based on currently-available rates adjusted in line with these life expectancies.

Chapter 4 shows the effect of varying these assumptions.

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\(^{16}\) Based on Pensions Commissions analysis, assuming a fund invested 60 per cent in equities, 20 per cent corporate bonds, and 20 per cent government bonds.
The first example shown is for a man. Figures for women are similar (the only difference is due to differing life expectancies and therefore annuity rates), and the main results are also presented for women.

The expected payback on saving is shown in real terms, to show the ability to consume in retirement gained from a reduction in consumption during working life. Levels of income however are shown in earnings terms, as this gives a better picture of an individual’s standard of living relative to the standard of living of the population as a whole.

**Box 4  Real terms and earnings terms**

The most appropriate way to compare purchasing power across time is in real terms, that is in today’s prices. This makes allowances for inflation, so a pension of £20 in real terms in 2055 would be able to buy approximately the same level of goods and services as £20 today. This makes it easy to see the effect of saving on people’s ability to consume goods and services; someone with a real payback of £2 per £1 contributed would be giving up consumption in working life to consume twice as much in retirement.

Historically, average earnings have risen significantly faster than prices, and this is expected to continue. This has led to rising living standards for the population as a whole. Someone whose income stayed level in real terms over many decades would therefore find their living standards falling in comparison to people whose income was rising in line with earnings. The difference can be large – in 1970 average weekly earnings were around £277 in today’s prices, and today average earnings are over £500.17 Figures for incomes are shown in today’s earnings terms to reflect how they will compare to incomes in the whole population at that time.

Under the proposed reforms, the basic State Pension will be linked to earnings growth during the next parliament, and accrued State Second Pension is already uprated in line with earnings growth up to the date of retirement. Under the assumptions used in this publication, this might give a pension worth over £350 in today’s prices by 2055. This may seem a significant amount to today’s younger workers. However an average earner choosing to rely only on state entitlement can expect that as time passes his or her earnings and living standards will increase so that on reaching state pension age this level of state entitlement would mean a significant fall from the income to which they had become accustomed, and would be lower than that of others who had saved. Research by the Pensions Commission18 suggests that the majority of people would prefer a higher replacement rate than this strategy would give them.

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17 Average gross weekly full-time earnings for men and women, uprated to 2005 prices in line with the RPI all-items index. The average used is the mean due to data limitations, but elsewhere this analysis uses median earnings to show a more typical earner.

2.2 Building up a personal account

Under the proposed private pension reforms, each eligible employee will be automatically enrolled in a pension (either personal accounts or a suitable work-based alternative) with contributions equal to eight per cent of their wages within a band of earnings - just under four per cent from the employee’s wages, one per cent from tax relief and three per cent from the employer.\(^{19}\)

These contributions will be invested. The return on investment is uncertain and the value of investments may fall as well as rise but under reasonable assumptions, an individual joining personal accounts at the beginning of his or her working life might almost double the real value of their fund through investment growth (assuming 3.5 per cent real growth and 0.5 per cent charges).

So, at the point of contribution, an employee’s investment is immediately doubled – for every £1 he or she contributes, £2 will go into the fund – and with investment growth they may increase this to nearly £4 in their fund at retirement for every £1 contributed.

2.3 Tax and benefit in retirement

After annuitisation, the pension income may be subject to tax or may affect entitlement to means-tested benefits. Most people can expect to see a significant payback after these are taken into account.

The most basic test of whether saving is worthwhile is whether an individual benefits from his or her savings in retirement. This should happen unless, after saving, the individual remains below the savings credit threshold in Pension Credit, and so faces a 100 per cent benefit offset through Pension Credit – a 100 per cent marginal deduction rate (and many of those who are below the savings credit threshold could benefit through trivially commuting their pension – see Box 7 for details. This part of Pension Credit provides a safety-net for a very small group with a severely deficient state pension record and/or additional needs, and small or no private savings and it is not something many people will plan to receive.

If the whole of a personal account pension was subject to basic rate tax, for example, someone achieving the returns described above could expect a payback of around £3 for every £1 contributed, after annuitising and with average life expectancy. If the pension were covered by savings credit, which gives 60p for each £1 of pension, they might expect to receive over £2 net increase in income for each £1 contributed. Even if they received little or no real investment growth at all and were on savings credit (but not other benefits) they could expect to receive 20 per cent more in real terms than they put in.

\(^{19}\) Those paying higher rate tax will pay three per cent, with two per cent coming from tax relief.
Many people will achieve a better payback than this. The Government estimates that only around a third of pensioners will be entitled to Pension Credit in 2050 before taking account of personal accounts, while in 2003/04, only 30 per cent of pensioners paid basic or higher rate tax (projections of taxpayers to 2050 are not available). Other groups, such as those with a poor state pension record and no other savings, may see a lower payback – Chapter 4 looks more closely at factors which may give rise to this. Overall, however, a large majority of people automatically enrolled in to personal accounts can expect a good payback under reasonable assumptions.

Box 5 Tax and Benefit effects

Contributions to defined contribution pension schemes such as personal accounts are automatically given tax relief at least at the basic rate level. For every 78p of net income contributed, tax relief of 22p is added to the pension fund – a 28 per cent increase. Higher rate taxpayers can claim a further refund via their tax payback, so that each £1 of contribution costs them a net 60p. For basic and higher rate taxpayers this is the equivalent of exempting their pension contributions from tax. Starting rate taxpayers and non-taxpayers gain the benefit of basic rate tax relief although they have not paid basic rate tax on their income.

Returns on the pension fund are tax free and on retirement up to 25 per cent of the fund can be taken as a tax free lump sum. The remainder of the fund is taken as an income and subject to tax in the normal way. Pensioners are less likely to pay tax than non-pensioners due to a combination of lower incomes and more generous personal allowances, suggesting the tax due on the pension is likely to be at a lower rate than the tax relief received in working life. However this will depend on the tax system applying during their retirement – it is possible the pension income could be taxed at a higher rate than tax relief has been given. The analysis in this document assumes that tax rates do not change and tax bands rise in line with earnings.

The value of contributions can also be taken into account in benefit calculations. For those on Working Tax Credit, for example, the income level used in the calculation is the income after any pension contributions, so the amount of benefit received can be increased by the appropriate taper rate meaning a £1 of contribution costs them just 63p net income. For Housing Benefit, half the value of the contribution is used. For people in this situation, their contribution increases the value of their pension fund and also their benefit entitlement.

In retirement, the pension paid out is taken into account in calculating benefits and so can reduce benefit entitlement.
2.4 The impact of household formation

The majority of the analysis in this publication looks at the expected payback for a single person. We know that many people plan their finances as part of a couple, and both the net payback they can expect on saving and the need and affordability of saving for retirement may depend on household as well as individual circumstances.

Household formation will not affect an individual’s pension, but Pension Credit and other benefit calculations take into account a partner’s income. This means that someone in a couple will tend to have a higher rather than lower payback as they are less likely to have benefit entitlement (but they each get their individual tax allowances). By 2050, we estimate that less than ten per cent of Pension Credit recipients will be couples. This is considered further in Chapter 4.

The presence of other people outside the immediate family may affect entitlement to household level benefits such as Council Tax Benefit, but will not affect Pension Credit entitlement.

2.5 The impact of saving on retirement income

Figure 2.1 shows the expected impact of saving in a personal account or equivalent exempt scheme on lifetime income for a single male median earner, using the same assumptions on investment growth etc as before. It shows that making contributions during working life has only a small effect on his working age income but in retirement he gains a significant boost, increasing his income at retirement by almost a third. A female median earner retiring at the same age would see a smaller increase in annual income in retirement but for more years; by delaying her retirement to reflect her longer life expectancy she could increase her income in retirement to reach the same as the male example.
Figure 2.1  Projected net weekly income with and without saving for a male median earner aged 25 in 2012 over his whole lifetime

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: Income falls slowly in earnings terms over retirement as the State Second Pension and private annuity are assumed to be linked to prices, while the basic State Pension is linked to earnings.

Figures 2.2 and 2.3 show the effect of a personal account or equivalent on income at retirement for a variety of earnings levels. The first chart shows the benefits at retirement from saving in today’s earnings terms, while the second shows the total as a percentage of the individual’s earnings in his last year of work.

A median earner who has a good working history could expect an income around a third higher at the point of retirement through saving than if he had not saved, increasing his replacement rate from 35 per cent to 46 per cent.
Figure 2.2 Total income at retirement

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: Income includes Council Tax Benefit
Figure 2.3 Replacement rates

[Graph showing replacement rates with and without saving for different earnings levels]

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: Income includes Council Tax Benefit

Saving at the default rate makes a significant difference to incomes for most earnings levels. Those on the lowest incomes – just over the lower threshold – make much smaller contributions since default contributions are only made on income above the lower threshold, and this is reflected in the smaller improvement for these people. For very low earners, replacement rates are over 100 per cent from state entitlement only, which is one of the reasons we have proposed a lower income threshold for automatic enrolment.

Analysis by the Pensions Commission suggests that many people would like a higher replacement rate than those shown above. These people may wish to save further in a personal account, another pensions vehicle or through non-pension saving. However others may find saving at the default rate sufficient.

Lower earners may wish to save despite their high replacement rates before saving. They may still want more income in retirement than their state entitlement, particularly if their earnings at a particular point in time are not a good reflection of their long-term standard of living. Chapter 5 looks in more detail at this group.
2.6 Payback on saving – the price motive

The example above shows an average earner saving around four per cent of earnings and gaining a 30 per cent increase in retirement income. His contributions total around £130,000 in cash terms. At the point of retirement he is assumed to buy an index-linked annuity. Under these assumptions about investment growth, annuity rates and life expectancy, in retirement he increases his net income by £700,000 over his retirement, after taking into account any tax due on the pension and any reduction in benefit entitlement due to the extra pension. However if we take inflation into account and express these amounts in today’s prices, we get a contribution equivalent to £52,000 and £133,000 of extra income. For every £1-worth of contributions, this person has received £2.55 real increase in total in his expected net retirement income.

This does not take into account the value of the money to the individual at each stage of his life. Most people have a higher income during working life than in retirement, so £1 may be worth more to them in retirement than the same (real) amount in working life. Nor does it use any discount rate to reflect people’s time preference for money – that is that, all other things being equal, most people will prefer money now rather than money in the future.

It does not take into account any impact on benefit entitlement during working life. Where income-related benefits disregard the value of any pension contributions, an individual may contribute £1 but see a benefit offset which partially compensates for this.

2.7 Payback under the reformed pension system

This £2.55 can be split down to see how various factors contribute to this payback. Each change is taken in turn and assumes earlier changes are in place – so the figure for investment growth includes investment growth on the tax relief and employers contributions, charges are charges on the whole fund, and so on.
For this long-term saver, the greatest effect on their payback is from investment growth. The match from employer contributions and tax relief is also significant. The main offsetting effect is from other income-related benefits – Council Tax Benefit in this case – but this is small compared to the size of the increase in value. There is a small reduction in entitlement to Pension Credit because it is assumed that towards the end of his life this person would become entitled to a small amount of savings credit if he did not save in personal accounts, reflecting the earnings uprating of the Pension Credit standard minimum guarantee compared to the price uprating of his State Second Pension in retirement.
The base analysis in this publication assumes that individuals are entitled to Pension Credit and Council Tax Benefit if their income is sufficiently low (it also assumes they have no other savings which might lift them out of benefit entitlement). It assumes they are not entitled to any income-related benefit at any point during working life. This represents a conservative assumption – in practice some individuals will receive extra benefit during working life (i.e. reducing the impact of contributions) which has not been taken into account in the analysis on the payback presented here.

Figure 2.5 shows the expected payback for a lower earner. Income-related benefits are slightly more important (though state entitlement is still sufficient to keep him clear of Pension Credit at retirement), but other factors have the same impact as for a median earner, and he still gains significantly more in retirement than he has contributed.

**Figure 2.5**  Projected real payback for a £15,000 earner aged 25 in 2012

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.
Figure 2.6 shows the expected payback for an older person on median earnings but with no other savings. Assumed investment growth is lower because the fund has fewer years to grow, and more of his pension is offset by a reduction in benefit entitlement. However he can still expect to receive more than £1 plus inflation for every £1 saved. The employer/tax relief match ensures his contribution is immediately doubled and he is then assumed to get some investment growth, which under these assumptions is more than enough to offset the reduction in benefit entitlement. If he did not save, he would be eligible for both Pension Credit and Council Tax Benefit (CTB) throughout retirement, while with a personal account or similar pension he is eligible for CTB throughout retirement and would be eligible for some savings credit later in retirement.

Figure 2.6  Projected real payback for a median earner aged 55 in 2012 with no other savings

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

These examples have assumed no saving for retirement outside personal accounts. Even for younger groups this is a very cautious assumption – nearly half of those aged 30–39 have a private pension – but for those in older groups it is least realistic.20

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20 Source: Family Resources Survey 2004/05.
Eighty-five per cent of people aged 50 to state pension age have either a private pension or have savings of over £6,000. Figure 2.7 shows the payback from saving in a personal account or similar exempt scheme that could be expected by someone with previous pension savings which would represent a pension of £50 a week (around £50,000).

**Figure 2.7  Projected real payback for a median earner aged 55 in 2012 with some existing pension savings**

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

**2.8  Payback by age and income**

This section looks at the overall expected payback for other ages and income levels, using the same assumptions otherwise (listed in Annex A). Each point shows the expected payback per £1 contributed – the equivalent of the right-hand green bar in the charts above.

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21 English Longitudinal Study of Ageing 2002/03. £6,000 is the level at which savings begin to affect entitlement to Pension Credit.
Individuals with small pension pots may be able to increase expected payback by taking some or all of their pension as a lump sum, though there may still be some tax liability or benefit impact. Figure 2.9 shows the expected returns assuming each individual takes as much as possible of their pension as a lump sum and spends most of it immediately. Other possibilities are shown in Table 4.2.

---

**Figure 2.8** Projected real payback by age and income

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

---

22 Tax rules allow individuals to take 25 per cent of their pension pot as a tax free lump sum, and those with total pension worth less than £15,000 may take their whole pension as a lump sum through ‘Trivial Commutation’ rules – see Box 7 for further details. There may still be some tax liability or benefit impact.

23 Assuming no benefit impact through deprivation of capital rules.
This shows that these hypothetical individuals can expect to get more out of a personal account than they put in, in real terms, after accounting for any tax or reduction of benefit entitlement.

The figures are the results of several complex interactions. The lowest payback belongs to those who are older in 2012, and of low-moderate (but not very low) earnings. An older person is assumed to contribute to his pension for fewer years, and so both his contributions and the eventual size of his pension are small compared to those contributing for longer. State Second Pension was introduced in 2002 to boost the state additional pension rights of low-moderate earners (and to extend entitlement to those with caring responsibilities or a long-term disability), but older people who have spent a significant part of their working life before 2002 on low earnings may have relatively low state additional pension entitlement. However the employer contribution and tax relief give an immediate boost to contributions, and since they are nearer to retirement they will have less time to wait before seeing
the benefit of their savings. Lower earners with additional savings outside personal accounts tend to have a payback closer to those with higher incomes, as their non-personal accounts saving effectively acts in a similar way to higher earners’ higher contributions into personal accounts.

Older workers in 2012 on the lowest earnings retain some guarantee credit entitlement at retirement even when saving at the default rate and so do not see any tapering of their Council Tax Benefit. Those with slightly higher earnings, who therefore have more SERPS entitlement, have sufficient state entitlement to take them above the standard guarantee credit level, but see both their Council Tax Benefit and their Pension Credit reduced. The tapers on these benefits are low enough to ensure he sees an above-inflation payback, but it is lower than for those either side. Those on above average incomes during their working life have higher SERPS so less benefit entitlement before saving, and therefore see lower benefit offsets (though may have higher tax liabilities).

For younger groups, the maturing of the State Second Pension keeps even the non-savers clear of Pension Credit at retirement, and any loss of entitlement to Council Tax Benefit is likely to be small in comparison to the pension they can build up over 40 years.

The examples do not take into account other significant factors such as those retiring in a couple. These are more complex and are discussed in Chapter 4.

### 2.9 Payback for women

An employee contributing to a personal account will receive the employer/tax relief matching contribution and will face the same investment choices irrespective of gender and household formation. A woman’s longer life expectancy reduces the annuity rate she receives, compared to a man of the same age, but increases the length of time she can expect to receive that income. This will affect the interaction with the tax and benefit regime (may either increase or decrease the expected payback), the time available for investment growth and the number of years over which the gain is spread. However, the payback is usually close to those for a man with a similar career, and therefore most of the following analysis gives the payback only for a male example individual.

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24 Households in receipt of the guarantee element of Pension Credit (including those with guarantee credit entitlement due to additional needs) are entitled to the full amount of Council Tax Benefit. Income over the guarantee level will lead to offsetting of Council Tax Benefit and savings credit.
Table 2.1 Projected real payback for men and women

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Men Age in 2012</th>
<th>Women Age in 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>£6,000</td>
<td>£1.99</td>
<td>£1.42</td>
</tr>
<tr>
<td>£15,000</td>
<td>£2.52</td>
<td>£1.52</td>
</tr>
<tr>
<td>£23,000</td>
<td>£2.55</td>
<td>£1.97</td>
</tr>
<tr>
<td>£33,000</td>
<td>£2.57</td>
<td>£2.09</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: The saver is assumed to have previous pension savings which would represent a pension of £50 a week (around £50,000). The payback quoted relates to the payback on their extra personal accounts or exempt scheme saving only.

Table 2.1 assumes the same state pension entitlement and personal account contributions for women as for men. Chapters 3 and 4 look at the rate of payback for other assumptions.

2.10 Other factors

This analysis has focused on single people. Those in a couple tend to have a higher expected payback, as benefit entitlement is shared but each partner has their own tax allowances and bands.

In addition, some people may prefer to take a lump sum, either the 25 per cent lump sum option or through trivial commutation. The trivial commutation option is likely to be particularly relevant for older people on low-moderate incomes with no other pension, as they are most likely to have small pension funds.

These options are discussed further in Chapter 4.

2.11 Impact of saving on replacement rates

An individual deciding whether or not to save should look at both the expected payback and the expected income in retirement – both the cost of saving and the need for saving. Table 2.2 shows this for our main (male) cases.
Table 2.2  Projected impact of saving

<table>
<thead>
<tr>
<th>Age in 2012</th>
<th>Earnings</th>
<th>Payback per £1</th>
<th>Replacement rate without saving</th>
<th>Replacement rate after saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>£6,000</td>
<td>£1.99</td>
<td>130%</td>
<td>132%</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£2.52</td>
<td>52%</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£2.55</td>
<td>35%</td>
<td>46%</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£2.57</td>
<td>24%</td>
<td>36%</td>
</tr>
<tr>
<td>40</td>
<td>£6,000</td>
<td>£1.42</td>
<td>128%</td>
<td>129%</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£1.52</td>
<td>52%</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£1.97</td>
<td>35%</td>
<td>42%</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£2.09</td>
<td>26%</td>
<td>32%</td>
</tr>
<tr>
<td>55</td>
<td>£6,000</td>
<td>£1.33</td>
<td>122%</td>
<td>122%</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£1.12</td>
<td>52%</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£1.04</td>
<td>36%</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£1.63</td>
<td>28%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

This shows that saving in personal accounts or a similar exempt scheme can significantly increase replacement rates, particularly for younger age groups who have more time to save. Given the assumption of constant earnings over a whole life those on the lowest incomes have high replacement rates without saving, but also have high expected rates of payback. For these examples, only one of the two main economic justifications for saving for retirement is in place. However many people on low earnings will not fit these assumptions – they may be temporarily on low income and benefiting from assets built up at other times, or they may have access to other income during working life such as a partner’s earnings, and so may want to save for retirement. Again, the individual will be able to opt out if that suits their personal circumstances, and it will be important to provide clear information about what they can expect to receive from the state to enable them to decide whether they wish to save to boost their retirement income. Chapter 5 provides further analysis on income transitions and affordability for low earners.

In practice of course people’s careers tend to be more complex and unpredictable than this, the assumptions underlying these calculations may not hold, and few people have the time or the inclination to calculate their expected payback and replacement rates in this manner. However this analysis shows that for a large range of cases, saving in personal accounts is likely to be worthwhile. The Government recognises the importance of providing clear information to help people take responsibility for their own retirement saving and to enable them to save appropriately to meet their retirement expectations.

Chapter 4 presents sensitivity analysis, showing the effect of varying the assumptions used here.
Summary

The analysis in the previous chapter looked at the payback that people might get from saving once the reforms set out in *Security in retirement* are in place – i.e. assuming that people start to save in 2012 and retire into the reformed state pension system.

The proposals in *Security in retirement* were intended to promote personal responsibility by improving the case for saving, both in terms of improving the economic incentives to save and by tackling the behavioural barriers to saving. Personal accounts will tackle inertia, through the use of automatic enrolment, and will reduce the charges that people face on personal pension saving. Employer contributions will further enhance incentives. Reforms to the state pension system will reduce the extent of income-related benefit entitlements, further enhancing the payback that people may get from saving. And in simplifying the system, they will make it easier for people to predict what they may get from the state and, therefore, to understand what more they need to do for themselves through saving.

These reforms are complementary parts of a coherent whole – without the positive benefits to incentives that result from our state pension reforms, we could not be confident in automatically enrolling people into a pension. Without automatic enrolment the barrier of inertia would remain. And economies of scale in personal accounts would be smaller meaning charges could be higher, dis-incentivising saving. The expected payback on saving is, under the current system, positive for most people. But it will be higher under reform. It is this which gives us the confidence to introduce automatic enrolment.
Security in retirement: towards a new pensions system set out a package of reforms to encourage and enable saving for retirement. The discussion so far has presented the payback which can be expected from saving assuming all these reforms are enacted. We can use similar methodology to look at what payback an individual could expect if some or all of the reforms were not introduced.

Figure 3.1 shows how the payback for a male median earner would look if we did not enact any of the proposals. The underlying assumptions are the same as for Figure 2.4: this person could expect a payback of £2.55 per £1 under the reformed system. It assumes that the standard minimum guarantee element of Pension Credit is increased in line with earnings after 2008. If it were increased only in line with prices those on lower incomes might see a slightly higher payback, but there would be a reduction in the protection the system offers pensioners against relative poverty with the poorest pensioners being significantly worse off.

**Figure 3.1** Projected real payback assuming no reform for a median earner aged 25 in 2012

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

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Charges are assumed to be at the stakeholder cap level.
Under the system as currently legislated, but with the standard guarantee credit continuing to be earnings uprated, Pension Credit spreads up the income distribution, so even a median earner saving all their life (at the default total contribution) would be entitled to some Pension Credit. This was never the Government's intention. The chart shows that this person could expect £1.13 in retirement from each £1 saved, and saving would help him to smooth his income across his lifetime. However we know that in fact many people do not choose to save sufficiently for retirement, either because they do not judge it worthwhile or because of other barriers to saving. The reforms double the expected payback on saving for retirement for this median earner, as well as helping to overcome other barriers through automatic enrolment.

These figures do not apply to someone who begins saving prior to the reforms coming into force as such a person would still benefit from the proposed reforms to the state pension system, and, if they chose to save in a personal account after 2012, from the boost given to that part of the pension by the employer contribution (and potentially lower charges). Savings made before 2012 may see a good payback as they can expect many years of investment growth. A 25 year old saving in a stakeholder pension from now until 2012 could expect a payback of around £2.59 per £1 contributed over these six years before taking into account any tax deduction or benefit offset – the extent of these would depend upon his other income in retirement. If the pension fell in the basic rate tax band, he would gain £2.02.

Figure 3.2 looks at how the elements of the proposed reform package work together to increase the expected payback. Each bar represents the total return per £1 – the equivalent of the right hand green bar in the charts above – for that system. The figures show the cumulative effects of the reform from left to right, so the second bar shows the impact of an employer contribution assuming no state reform, while the fourth bar shows the impact of state reform assuming the employer contribution is in place.
Figure 3.2  Impact of reforms on projected real payback for a male median earner aged 25 in 2012

The reforms affect total income as well as the expected payback. Figures 3.3 and 3.4 show the effects of the whole reform package, including personal accounts, for a low and median earner retiring in 2050 (under the unreformed system) or 2053 (after reform including state pension age increase). They show reforms increase retirement income.

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

26 These charts are those used in the regulatory impact assessment published alongside this document. They use a slightly different time period (retiring in 2050 or 2053) and earnings levels (£230 a week and £440 a week) to the base case in this analysis, which is driven by the personal accounts start date and earnings bands.
Figure 3.3  Projected retirement incomes at retirement for a low earner

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.
Each aspect of the reform will be more important for some earnings levels than others, but most people can expect a higher payback under the reformed system. Table 3.1 shows the impact of the whole package for men of other ages and income levels.

**Table 3.1**  Projected real payback per £1 with and without reform, assuming participation in personal accounts or an equivalent exempt scheme but no other saving

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Men Without reform</th>
<th>Men With reform</th>
<th>Women Without reform</th>
<th>Women With reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 £6,000</td>
<td>£1.15</td>
<td>£1.99</td>
<td>£1.14</td>
<td>£2.02</td>
</tr>
<tr>
<td>25 £15,000</td>
<td>£1.15</td>
<td>£2.52</td>
<td>£1.14</td>
<td>£2.57</td>
</tr>
<tr>
<td>25 £23,000</td>
<td>£1.13</td>
<td>£2.55</td>
<td>£1.13</td>
<td>£2.64</td>
</tr>
<tr>
<td>25 £33,000</td>
<td>£1.11</td>
<td>£2.57</td>
<td>£1.11</td>
<td>£2.65</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.
Table 3.1  Continued

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without reform</td>
<td>With reform</td>
</tr>
<tr>
<td>40</td>
<td>£6,000</td>
<td>£0.94</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£0.94</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£0.92</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£0.87</td>
</tr>
<tr>
<td>55</td>
<td>£6,000</td>
<td>£0.79</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£0.79</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£0.73</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£0.65</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Under these assumptions most people can expect a payback close to or above inflation under the current system, but some groups see a lower expected payback. Older people are likely to have less time for investment growth to increase their fund and, without the proposed reforms, may see a benefit offset greater than their gain from tax relief and investment growth. This does not automatically mean these people should not save; that would depend on their desire to smooth their income and on other characteristics and plans. The example assumes that the individual has no other savings or sources of income outside his state benefits, while in practice over 85 per cent of older people have some savings or private pension. It also assumes that they retire at state pension age and are single. Varying these assumptions could increase (or decrease) the final payback. In addition, those with small total pension funds might be able to increase their payback by trivially commuting any pension. However this analysis does suggest that automatically enrolling people like this without reform to the state pension system over the long term would risk enrolling some people against their best interests.
Box 6  External research on the impact of tax and benefits

Recent evidence from the Institute of Fiscal Studies\textsuperscript{27} shows that decisions about retirement savings are influenced by marginal withdrawal rates from the tax, tax credit and benefit system. Saving requires an individual to be forward-looking, and to adequately consider both the outcomes and risks associated with this.

The National Institute of Economic and Social Research report\textsuperscript{28} regarding means-testing suggests found that the shift from the Minimum Income Guarantee (MIG) to Pension Credit was welfare enhancing overall but that incentives would be damaged if Pension Credit were allowed to spread further up the income distribution.

This analysis takes into account the wider trade-offs inherent in designing any welfare system: a more generous system in retirement will require higher tax rates elsewhere in the economy, which may then damage incentives to work and save. The Government must strike a balance between affordability, the need to protect pensioners (and others) from poverty, and ensuring the correct incentives are in place to encourage people to take appropriate responsibility for their own retirement plans.

3.1  Impact of reform on women with significant caring breaks

A key objective of the pension reforms is to deliver fairer outcomes for women and carers. The reforms will improve state pension coverage and provide a more generous and simpler state pension, within which working and caring are rewarded equally and saving incentives are improved. \textit{The Gender Impact of Pension Reform} presents detailed analysis of the impacts of these measures.\textsuperscript{29}

Around a third of all women from the Lifetime Labour Market Database analysis\textsuperscript{30} had work histories in which at least 15 years of the previous 20 were spent in work and in many cases all 20 years were spent in either employment or self-employment. Working for this sort of time period is the most common single example of a career history for women.

\textsuperscript{27}  Blundell R., Emmerson C and Wakefield M, 2006, \textit{The Importance of Incentives in Influencing Private Retirement Saving: Known Knowns and Known Unknowns} IFS WP06/09.


\textsuperscript{29}  \textit{The Gender Impact of Pension Reform}, DWP 2006.

\textsuperscript{30}  The Lifetime Labour Market Database (LLMDB2) is created using a one per cent sample taken from the new National Insurance Recording System (NIRS2).
There are of course many women who have periods out of the labour market for whom this may not be a typical working life.

Table 3.2 looks at the impact of reform on expected payback for three illustrative women who spend long periods outside the labour market. It shows all three can expect good payback under reform. Before reform, each could expect to get back about the same as she contributed plus inflation, and they might choose to save in order to smooth their income. They could expect a better payback if they were in a partnership in retirement.

The reforms significantly increase the expected payback in all cases, ensuring all three of these cases can expect a good payback from saving.

Table 3.2  Projected real payback for women with fragmented work histories

<table>
<thead>
<tr>
<th>Without reform Payback per £1</th>
<th>With reform Payback per £1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low earner with short career breaks and part-time working</td>
<td>£1.13</td>
</tr>
<tr>
<td>Carer, who because of her age and the ages of her children has missed out on some S2P credits.</td>
<td>£0.99</td>
</tr>
<tr>
<td>Long career break of 25 years to care for children</td>
<td>£0.99</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: Full details of the careers chosen are in Appendix A.
4 Impact of other choices and characteristics

Summary

The analysis earlier in this paper is based on a range of assumptions about individual characteristics such as age, earnings profiles and work histories, partnering and about other factors such as the rate of investment growth. These assumptions are generally conservative.

Varying these assumptions and considering the option of taking a lump sum leads to some different results in the payback that people may get from saving for retirement. People retiring in couples, for example, are likely to see a higher payback as a result of benefit entitlements being calculated on a household basis.

A small group with incomplete state pension entitlements and/or multiple benefit entitlements (such as those on Housing Benefit) may see a lower payback. In many cases, these people are unlikely to have been automatically enrolled for long periods and will have only small if any private savings. They are likely to benefit from high replacement rates from the state, and may also be able to improve the payback that they can expect on what savings they do have by taking some or all of their pension as a lump sum.

A range of other factors can also affect outcomes. Decisions at retirement such as when to annuitise and whether to defer state pension entitlement, investment returns and investment strategies and choosing to pay additional contributions can all significantly change the payback that people can expect to get.

Under most assumptions though, most people can expect to see a positive real payback from saving in a personal account or exempt scheme.
The analysis so far has looked at single employees with a reasonably full career but with no saving or pension other than the default level of personal accounts. It has assumed earnings rise in line with average earnings, and that investments grow at 3.5 per cent in real terms. Finally, it assumes that the whole fund is annuitised. This chapter looks at the impact of varying these assumptions.

The factors affecting the build-up of the fund are relatively straightforward. The timing of contributions will affect the time available for investment growth, and varying the assumption on investment performance will change the size of the final fund. Being eligible for a higher rate tax during working life will increase the value of tax relief. Moving in and out of entitlement to benefits or tax credits during working life will not change the pension received per £1 of contribution, but may mean that that contribution increases entitlement to benefits and credits during working life as well as increasing income in retirement.

In retirement the situation is more complicated. By 2050, state entitlement will be sufficient to keep an individual with a good record of work or social contributions clear of standard Pension Credit entitlement at retirement but there may be entitlement to Council Tax Benefit and, if the individual is a tenant, Housing Benefit. Before the state pension reforms are mature, where the individual has a partial National Insurance record, or where they are entitled to Pension Credit premia there may be some Pension Credit entitlement. This will depend on the individual’s income from state and private pensions and from any other sources, and on the existence, income and needs of any spouse or other household members.

4.1 Couples

The majority of pensioners will reach retirement as part of a couple – 70 per cent of people aged 65–69 are married. This tends to increase the expected payback as the combined state and private income from a couple is likely to lift them above the limits for income-related benefits, but tax is calculated on an individual basis so is not affected.

Table 4.1 shows the payback an individual would face given certain assumptions about his or her partner’s income in retirement. Results are given for both men and women, given these assumptions – they do not represent two halves of a couple. For all these cases, the combined state entitlement of the two partners takes them out of Pension Credit entitlement throughout their retirement, although if they do not save they may have some entitlement to Council Tax Benefit. Where the other

31 It assumes he takes the full 25 per cent tax free lump sum, but this is then converted into a voluntary annuity. This will face a lower tax charge than the main annuity as that part of the annuity which is a return of capital is not taxed.

32 Mid-2003 population estimates for England and Wales, Office for National Statistics.
member of the couple has the same income, the calculation assumes that either both save or neither saves. In all these cases the expected payback is high, and higher than the equivalent single examples.

Table 4.1  Projected real payback for members of a couple assuming no other saving

<table>
<thead>
<tr>
<th></th>
<th>Age in 2012</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td>40</td>
<td>55</td>
</tr>
<tr>
<td>Base case – single person, median earnings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man</td>
<td>£2.55</td>
<td>£1.97</td>
<td>£1.04</td>
</tr>
<tr>
<td>Woman</td>
<td>£2.64</td>
<td>£1.92</td>
<td>£1.07</td>
</tr>
<tr>
<td>Median earnings, partner on same income in retirement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man</td>
<td>£3.22</td>
<td>£2.67</td>
<td>£2.02</td>
</tr>
<tr>
<td>Woman</td>
<td>£3.36</td>
<td>£2.64</td>
<td>£2.04</td>
</tr>
<tr>
<td>£15,000 earnings, partner on same income in retirement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man</td>
<td>£3.26</td>
<td>£2.54</td>
<td>£1.77</td>
</tr>
<tr>
<td>Woman</td>
<td>£3.36</td>
<td>£2.48</td>
<td>£1.82</td>
</tr>
<tr>
<td>Contributes for ten years from age 37 to 46. Couple has no benefit entitlement in retirement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man</td>
<td>£4.07</td>
<td>£3.84</td>
<td>N/A</td>
</tr>
<tr>
<td>Woman</td>
<td>£4.22</td>
<td>£3.80</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: The expected payback shown for members of a couple assumes they remain in the couple until death. If they became single part way through retirement their payback in the remaining years would be like those of the equivalent single person.

The final example represents someone who cares for children from age 25 to 37, works for ten years, then is inactive and not receiving state Pension Credits. The payback is higher than for the previous example because contributions are invested for longer on average but the overall pension will be lower because lower contributions have been made. It is assumed their state pension combined with their partner’s income is sufficient to lift them off benefits.

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33 Other characteristics are as described in Appendix A. The returns for each individual assume that they remain in the couple until death.
4.2 Lump sums and trivial commutation

The foregoing analysis has assumed the fund was converted into an index linked, single life annuity. Choosing to take part of this as a lump sum, either through the 25 per cent tax free lump sum or through trivial commutation, will affect the way in which the tax and benefit system treats the income. Choosing a level annuity and/or a joint annuity will again change the profile of the income received and affect interactions with the tax and benefit system.34

Box 7 Lump sums and trivial commutation

The tax regime for pensions allows 25 per cent of the value of a pension fund to be taken as a tax free lump sum. In addition, if the total value of an individual's pension is less than 1 per cent of the lifetime limit (£15,000 in 2006/07), it can be ‘trivially commuted’, meaning the whole pension is taken as a lump sum. In this case the remaining amount after the deduction of the 25 per cent tax free element will be taxed.

Any resulting lump sum is treated by the benefits system as any other savings. In Pension Credit, that means that the first £6,000 of savings will not affect benefit entitlement. Those with small pots and low levels of other savings may therefore take some of their pension as a lump sum, free of any benefit offset.

A lump sum would affect entitlement to benefits in the same way as any other capital. For Pension Credit, capital of under £6,000 does not affect benefit entitlement, while any capital above that is taken into account at a rate of £1 per week per £500. Capital of more than £16,000 currently excludes an individual from Council Tax Benefit unless they are getting the guarantee credit. In each case it is assumed there is no other saving. The size of the lump sum reaches over £25,000 for the high-earning 25 year old taking the 25 per cent tax free lump sum. Table 4.2 shows the potential payback for each of these cases – so for example the 55 year old low earner could expect a payback of £1.12 if he annuitised his whole fund, but could increase this to £1.47 by taking the 25 per cent lump sum (assuming no other savings) and up to £2.42 if he took the whole pension as a lump sum.

34 Choosing to take as much as possible of the pension on retirement and spending it quickly often gives the highest possible return in this analysis, but in reality there are many more considerations which will influence an individual's decision making and this may not be the best choice overall. It might also be considered as deprivation of capital under benefit rules, though this would depend upon the use to which it was put.
### Table 4.2  Projected real payback for lump sums and trivial commutation

<table>
<thead>
<tr>
<th>Age in 2012</th>
<th>Earnings</th>
<th>All income annuitised (base case)</th>
<th>Tax free lump sum taken and spent gradually$^{35}$</th>
<th>Tax free lump sum taken and spent in year of retirement</th>
<th>Whole pension commuted and spent gradually</th>
<th>Whole pension commuted and spent in year of retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>£6,000</td>
<td>£1.99</td>
<td>£2.40</td>
<td>£2.46</td>
<td>Up to £2.84*</td>
<td>£3.75</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£2.52</td>
<td>£1.65-£2.64*</td>
<td>£2.82</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£2.55</td>
<td>£2.44-£2.70*</td>
<td>£2.86</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£2.57</td>
<td>£2.64-£2.73*</td>
<td>£2.83</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>40</td>
<td>£6,000</td>
<td>£1.42</td>
<td>£1.86</td>
<td>£1.86</td>
<td>£2.71</td>
<td>£3.01</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£1.52</td>
<td>£0.85-£1.70*</td>
<td>£1.85</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£1.97</td>
<td>£1.31-£2.06*</td>
<td>£2.20</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£2.09</td>
<td>£1.83-£2.18*</td>
<td>£2.31</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>55</td>
<td>£6,000</td>
<td>£1.33</td>
<td>£1.62</td>
<td>£1.62</td>
<td>£2.49</td>
<td>£2.49</td>
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<tr>
<td></td>
<td>£15,000</td>
<td>£1.12</td>
<td>£1.47</td>
<td>£1.47</td>
<td>£1.45-£1.87*</td>
<td>£2.42</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£1.04</td>
<td>£1.37</td>
<td>£1.39</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£1.63</td>
<td>£1.78</td>
<td>£1.81</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Notes: It is assumed no deprivation of capital rules apply. ‘Gradual spending’ assumes ten per cent of the remaining sum is spent each year.

*The capital limits for Pension Credit and Council Tax Benefit are not currently regularly updated. Where this has a significant impact on the payback, a range is shown, representing all options between the limits being frozen in cash terms and them being uprated in line with earnings as with the tax system. The analysis elsewhere in this document assumes these limits remain frozen in cash terms. The individual would be able to take account of the benefit system at retirement before deciding whether to take a lump sum.

This shows that the option to take a lump sum has the power to significantly increase the payback for those who might otherwise see high marginal deduction rates on their income. These results are for people with good state entitlement and a consistent savings record. Those who do not fit these assumptions, because they have only a few years saving and/or many years in which they neither worked nor made social contributions, may particularly benefit from the lump sum options as they will tend to have smaller sums which are less likely to breach benefit capital limits.

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$^{35}$ Ten per cent of the remaining sum is spent each year.
### Impact of other earnings profiles

Projected returns during the build up of the fund are sensitive to the timing of contributions, but not their absolute level or to the personal characteristics of the individual. Varying the assumptions on earnings patterns therefore affects overall payback through the average length of time contributions are in the fund and benefiting from our assumed investment growth. Someone who makes most of their contributions early in their working life is likely to see more investment growth and therefore a higher pension than someone making the same level of contributions later in their life, other things being equal. Someone contributing only in later years will receive the matching contribution, but will have fewer years of investment growth so the ultimate fund is likely to be smaller than for someone contributing earlier in their life. The exact impact of this on the net payback will then be influenced by the effect of the tax and benefit system. The exception to this is where an individual moves into or out of the higher rate tax band during working life, as tax relief is worth more to a higher rate taxpayer.

Although the person contributing only in the first part of his life can expect to see higher payback per £1 than someone contributing their whole life, as he has contributed significantly less overall he will of course have a lower income in retirement.

The following extreme examples show the payback for contributing in only one of the first or second half of working life (assuming working life is age 25 to state pension age, as in the other examples). In years when they do not contribute, they are assumed to be maintaining their state entitlement through work or credits.

#### Table 4.3 Projected real payback for partial careers

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Payback per £1</th>
<th>Net income in retirement</th>
<th>Replacement rate</th>
<th>Payback per £1</th>
<th>Net income in retirement</th>
<th>Payback per £1</th>
<th>Net income in retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>£6,000</td>
<td>£1.99</td>
<td>£153</td>
<td>132%</td>
<td>£2.73</td>
<td>£151</td>
<td>£1.45</td>
<td>£151</td>
</tr>
<tr>
<td>£15,000</td>
<td>£2.52</td>
<td>£172</td>
<td>62%</td>
<td>£3.40</td>
<td>£165</td>
<td>£1.73</td>
<td>£162</td>
</tr>
<tr>
<td>£23,000</td>
<td>£2.55</td>
<td>£199</td>
<td>46%</td>
<td>£3.58</td>
<td>£178</td>
<td>£1.85</td>
<td>£171</td>
</tr>
<tr>
<td>£33,000</td>
<td>£2.57</td>
<td>£217</td>
<td>36%</td>
<td>£3.58</td>
<td>£187</td>
<td>£1.88</td>
<td>£178</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: Results are shown for those aged 25 in 2012 only, as older groups will spend the early part of their career before the introduction of personal accounts. As with the main tables, the small increase in income for the lowest earner reflects their very small default contribution since most of their income is below the lower limit for personal accounts.
Taking some years out of employment, for example to care for others, will affect the payback in the same way – the overall size of the pension will be lower, but the expected payback per £1 contributed may be either higher or lower, depending on investment growth and on the tax and benefit system.

Personal accounts can be taken from job to job and continued during out of work periods with no transfer fees.

4.4 Impact of incomplete state entitlement and multiple benefit entitlement

The impact of the employer/tax relief match means that even without any real investment growth those receiving some savings credit can expect to get back more than they contributed.36 A long-term saver with the benefits of investment growth as well as the matching contribution can expect to get over £2 net increase in income, after taking account of savings credit offset.

A very small group are at risk of a low payback due to high benefit withdrawal rates – those who end up on 100 per cent withdrawal rates due to severely deficient state entitlement and those with high withdrawal rates due to multiple benefits (or additional amounts) or a combination of tax and benefit withdrawal. These benefits are intended as a safety-net and younger people are unlikely to plan to face these multiple tapers. Many of those who do face these high tapers on personal account income will face them only on part of the income and only in part of their retirement.

Figure 4.1 estimates the proportion of the pensioner population entitled to Pension Credit. It does not include the effect of Personal Accounts, which could further reduce the number. Those on the guarantee credit only at retirement will have a severely deficient state pension record – by 2050 just 24 years of state pension entitlement from work or caring will be sufficient to lift someone out of this group at retirement.

By definition, people with few years of state pension accrual have not spent many years automatically enrolled into a personal account. If they have a small pension pot they may be able to take it as a lump sum through ‘trivial commutation’ rules and benefit from it in that way.37 If their total savings remain below the Pension Credit capital limits (currently £6,000) they will not face any benefit offset and so will benefit from the full value of their fund subject to any tax liability.

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36 Provided the value of the investment does not fall and there is no other tax or benefit withdrawal.

37 Someone on the National Minimum Wage saving at the default rate for 24 years could expect to build up a pension fund of £11,000-£13,000 in today’s earnings terms, below the current trivial commutation limit.
The proportion projected to be on Pension Credit and the proportion projected to be on guarantee credit only, are higher in 2020 and 2030 than in later years, but these groups will largely be those who have retired before being able to build up a significant personal accounts pension.

Figure 4.1 Proportion of pensioners eligible for Pension Credit over time

A further group who may potentially face 100 per cent deduction rates on some of their private income are those who have a higher Pension Credit guarantee level, for example because they are severely disabled and qualify for an additional amount, and their pre-benefit income is between the standard minimum guarantee and their own level of guarantee including their additional amounts. It is expected that 1 per cent of pensioner households may be in this position in 2050, but many of them will not have been eligible for these additional amounts until later in retirement.

We can look at some examples of cases that may face higher withdrawal rates. The proposed reforms ensure that these are rather extreme examples, and should not be taken to be typical or common. For example, an individual who has been automatically enrolled into personal accounts but retires onto guarantee credit only might have worked for only 15 years. For the other years he or she does not accrue state pension entitlement – they are not working and not caring for young children or disabled adults or receiving jobseekers allowance (which would give state Pension Credits). They are not married nor in a civil partnership, nor are they in a partnership at retirement (spouses and civil partners will be entitled to a partial pension based on their partner’s record or inherit rights if separated or widowed). It could be someone who acquires a significant sum, stops working, but spends the whole sum before retirement, or who spends that much of his life abroad but does not accrue any pension or savings there.
A household with high withdrawal rates due to multiple benefit entitlement might be a married couple where one partner has been a low earner and the other has never worked nor received credits for caring or from working-age benefits, and who are eligible for Housing Benefit and Council Tax Benefit as well as Pension Credit. If this couple saved and were not on working age benefits in working life, they would increase their retirement income but could expect to get back less in real terms than they contributed during working life. With other assumptions as before, they could expect around 50p per £1 contributed if they took the whole pension as an annuity. However this could be increased if they took part of their pension as a lump sum, and by contributing to a pension they might have increased their benefit income during working age. If this couple were owner-occupiers they could expect a payback of over £1.50 for every £1 contributed.

Around 18 per cent of over-60 households are eligible for Housing Benefit, but younger age groups are more likely to own their own houses and so will not be on Housing Benefit in retirement. Less than 20 per cent of those aged 45 to 59 currently do not own their own home, compared to 31 per cent of those aged 75 to 84. As with any long term saving, it will not be possible to identify with certainty the impact of saving for a given individual. Circumstances change, and future plans may not be known. It will be important to provide appropriate information to enable those with characteristics that would suggest they are at risk of a lower payback, such as a couple who are lifetime renters with no savings and poor state entitlement, to judge whether or not to opt out and, if they do remain opted in, on their options to take all or part of their pension as a lump sum.

As shown in Chapter 2, the impact of the employer/tax relief match means that even without any real investment growth those receiving some savings credit (and not in the above group and not on a combination of benefit tapers/tax liability) can expect to get back more than they contributed provided the value of their investment does not fall.

It is also important to recognise that Pension Credit will be playing a subtly different role in the future to the one it plays now. At present, many lifetime low earners retire with some Pension Credit entitlement because historically it has been difficult for them to build a substantial second pension. The introduction of S2P means that current low earners are much more likely to retire with a state entitlement that takes them above the means-tested level. Increasingly, Pension Credit will operate more as an insurance against certain life events – severe disability, caring responsibilities in old age – that are not necessarily predictable at the point that someone takes the decision to save. By 2050, approaching half of those entitled to Pension Credit will be in receipt of a higher applicable amount.

38 Family Resources Survey, 2004/05, table 4.3.
4.5 Impact of benefit entitlement in working life

Individuals on income-related working age benefits may find that the cost of their contributions to a personal pension is offset by an increase in their benefit entitlement during working life. Pension contributions are deducted from income taken into account by many benefits, so these people may increase their benefit entitlement in working life through saving for retirement. Tax credits disregard the whole of any pension contribution, while Housing Benefit takes half the value of the contribution into account.

The previous analysis has made the conservative assumption that there are no such offsets during working life. Figure 4.2 shows the expected payback for a low earner per £1 contribution net of any offsetting benefit effect is £2.81, compared to £2.52 with no such offset.

Figure 4.2 Projected real payback for a low earner net of tax credits

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: This assumes that the individual is entitled to tax credits for 15 years.
4.6 Retirement and annuitisation

The analysis so far has assumed individuals retire and take their pension at the state pension age. Alternative retirement decisions may affect the final payback in several ways:

- Working longer may increase the size of the pension fund by giving more time to make contributions and more time for investment growth on contributions made in earlier years.

- Those choosing to defer their state pension get generous increments of 10.4 per cent for every year of deferral or a lump sum, which may have knock-on effects on the tax and benefit offsets faced by private saving. There is no facility to take state pension early, but working-age benefits may be available.

- Annuity rates are generally higher for those annuitising at older ages (though annuity rates, like fund values, may fluctuate). However assuming later retirement may mean fewer years in which to receive the pension income.

These factors affect income levels in working age and in retirement, and so affect interactions with the tax and benefit system. Working longer should also increase lifetime income by providing an extra year’s earnings.

Table 4.4 shows the impact that working longer can have on the expected payback and on the final replacement rate. Those retiring later would of course also benefit from higher income in the years in which they were working.

Table 4.4 Projected real payback for those extending working life

<table>
<thead>
<tr>
<th>Age in 2012</th>
<th>Earnings</th>
<th>Payback per £1</th>
<th>Replacement rate</th>
<th>Payback per £1</th>
<th>Replacement rate</th>
<th>Payback per £1</th>
<th>Replacement rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>£6,000</td>
<td>£1.99</td>
<td>132%</td>
<td>£2.65</td>
<td>151%</td>
<td>£2.39</td>
<td>178%</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£2.52</td>
<td>62%</td>
<td>£2.62</td>
<td>71%</td>
<td>£2.72</td>
<td>87%</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£2.55</td>
<td>46%</td>
<td>£2.67</td>
<td>54%</td>
<td>£2.73</td>
<td>66%</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£2.57</td>
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<td>50%</td>
</tr>
<tr>
<td>40</td>
<td>£6,000</td>
<td>£1.42</td>
<td>129%</td>
<td>£2.16</td>
<td>142%</td>
<td>£2.09</td>
<td>167%</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£1.52</td>
<td>57%</td>
<td>£2.09</td>
<td>65%</td>
<td>£2.04</td>
<td>78%</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£1.97</td>
<td>42%</td>
<td>£2.05</td>
<td>48%</td>
<td>£2.27</td>
<td>59%</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£2.09</td>
<td>32%</td>
<td>£2.06</td>
<td>37%</td>
<td>£2.37</td>
<td>46%</td>
</tr>
<tr>
<td>55</td>
<td>£6,000</td>
<td>£1.33</td>
<td>122%</td>
<td>£1.12</td>
<td>131%</td>
<td>£1.69</td>
<td>145%</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£1.12</td>
<td>53%</td>
<td>£1.13</td>
<td>58%</td>
<td>£1.64</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£1.04</td>
<td>38%</td>
<td>£1.71</td>
<td>44%</td>
<td>£1.64</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£1.63</td>
<td>30%</td>
<td>£1.62</td>
<td>35%</td>
<td>£1.90</td>
<td>43%</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.
For those retiring earlier than state pension age, results will depend on the support they have available to bridge the gap between their retirement and when they can receive state pension. For our base case, annuitising his pension two years before state pension age would cut his annuity by 14 per cent, while not contributing for two years before state pension age but not drawing on it until state pension age would cut his fund and therefore, his annuity by four per cent (assuming annuity rates vary only in line with life expectancy). If he was receiving Incapacity Benefit, or another benefit giving State Pension credits, during those two years, and annuitised at state pension age, his expected payback per £1 would increase from £2.55 to £2.64, as the contributions he has failed to make are the ones which would have had the least time to benefit from any investment growth.

As with any other pension system, the eventual payback will depend on the length of retirement. This analysis assumes life expectancy in line with Government Actuary’s Department projections – the payback for a given individual will be higher or lower depending on whether he or she exceeds this average (or the value used in his or her own annuity, since impaired-life annuities may offer a higher payback) or dies younger.

The base case represents someone buying a single life index-linked annuity at the state pension age. Those in other circumstances, such as where one member of a couple has significantly greater pension rights, may choose differently, purchasing either a joint life annuity, which pays out until both members of the couple have died, or a guaranteed annuity, which guarantees to pay the income for a fixed period even if the annuitant dies. Individuals who have health conditions which may reduce their life expectancy, may be able to purchase an impaired or enhanced annuity, which pays a higher income.

4.7 Varying investment growth

Table 4.5 shows how the payback would vary if investment growth varied around our base case of 3.5 per cent real growth per year, or 6.47 per cent nominal growth. In reality, growth in a standard fund may be greater or lower than this, and some people may wish to invest their contributions in a very safe fund, which is likely to give a lower return than the standard fund is expected to. In personal accounts individuals will be able to choose from a selection of funds which will cover a range of risk preferences and different asset classes.

The lower payback represents a safe investment, such as a long-term UK bond. This gives a 4.25 per cent nominal or 1.34 per cent real annual return before charges. Most investors gaining these returns could expect a good payback overall.
A higher return representing ten per cent nominal growth – 6.93 per cent real growth – per year will of course give rise to a higher expected payback. For comparison, over the last 30 years, UK equities have achieved an annual real return of 8.6 per cent, though of course this does not guarantee they will continue to rise at this rate over the long term.  

The examples relating to younger people are more affected by variation in our investment growth assumptions, due to the longer period of time the contributions spend in fund. However all individuals, regardless of age, would be affected to some extent.

The investments will not in general be guaranteed, and some people may get a payback outside this range. It is possible that the fund at retirement may be less than the value of the contributions made.

### Table 4.5 Projected real payback for various investment growth rates

<table>
<thead>
<tr>
<th>Age in 2012</th>
<th>Earnings</th>
<th>Base case</th>
<th>1.34 per cent</th>
<th>6.93 per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>£6,000</td>
<td>£1.99</td>
<td>£1.25</td>
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</tr>
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<td>£6.09</td>
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<td></td>
<td>£33,000</td>
<td>£2.57</td>
<td>£1.63</td>
<td>£6.20</td>
</tr>
<tr>
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<td>£1.42</td>
<td>£1.07</td>
<td>£2.30</td>
</tr>
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<td>£2.09</td>
<td>£1.57</td>
<td>£3.41</td>
</tr>
<tr>
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<td>£6,000</td>
<td>£1.33</td>
<td>£1.19</td>
<td>£1.57</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>£1.12</td>
<td>£1.01</td>
<td>£1.32</td>
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<td>£23,000</td>
<td>£1.04</td>
<td>£0.93</td>
<td>£1.25</td>
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<td>£33,000</td>
<td>£1.63</td>
<td>£1.46</td>
<td>£1.93</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

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39 Barclays equity-gilt study, 2006. 8.6 is the real geometric average annualised percentage increase in UK equities, 1975 to 2005. http://www.barcap.com/egs/
4.8 Existing saving and other income sources

This analysis has assumed the individuals have no other assets which provide income or capital in retirement. This is not a realistic assumption – 85 per cent of people aged 50 to state pension age have either contributed to a personal pension or have built up savings of more than £6,000. On top of any pre-existing savings, people may continue to make some investments in assets outside personal accounts, perhaps to have precautionary savings which are more accessible or which have other advantages (eg housing can provide somewhere to live as well as an income through equity release). They may also increase assets through other means, such as through inheritance.

Others may have income from earnings, or the income of other household members may affect entitlement.

These factors will not affect the build-up of the pension fund, but adding other income will affect the deduction rates applying to the personal accounts slice of income (treating personal accounts as the ‘top slice’ of income since we are analysing the payback in personal accounts holding other factors fixed). It may increase the expected payback (for example by pushing more personal accounts income above Pension Credit limits), or may reduce them (by pushing it into a higher tax band). A large capital sum may reduce benefit entitlement but will not directly affect tax liabilities.40

This is more important for those who are older and on lower income when they begin saving in personal accounts. However older, low income people are more likely to have the option of trivially commuting their personal accounts pension, depending on their other pension entitlement. Table 4.6 shows the projected payback on a personal account or equivalent saving for those with other capital or income in retirement, assuming all their pension fund is annuitised. For most people, this other saving will increase the payback they can expect by reducing the potential benefit offsets.

---
40 There may be some tax impact if the capital sum is also producing income.
### Table 4.6 Projected real payback for those with other income

<table>
<thead>
<tr>
<th>Age in 2012</th>
<th>Earnings</th>
<th>Only state entitlement – base case</th>
<th>£25,000 non-pension saving in 2012</th>
<th>£50 a week other income</th>
<th>£100 a week other income</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>£6,000</td>
<td>£1.99</td>
<td>£3.44</td>
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<td>£2.86</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
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<td>£3.34</td>
<td>£2.60</td>
<td>£2.89</td>
</tr>
<tr>
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<td>£2.57</td>
<td>£3.20</td>
<td>£2.75</td>
<td>£2.87</td>
</tr>
<tr>
<td>40</td>
<td>£6,000</td>
<td>£1.42</td>
<td>£2.83</td>
<td>£2.13</td>
<td>£2.27</td>
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</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>£1.97</td>
<td>£2.72</td>
<td>£2.12</td>
<td>£2.36</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£2.09</td>
<td>£2.65</td>
<td>£2.19</td>
<td>£2.36</td>
</tr>
<tr>
<td>55</td>
<td>£6,000</td>
<td>£1.33</td>
<td>£1.33</td>
<td>£1.19</td>
<td>£1.62</td>
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<tr>
<td></td>
<td>£15,000</td>
<td>£1.12</td>
<td>£2.21</td>
<td>£1.67</td>
<td>£1.70</td>
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<td></td>
<td>£23,000</td>
<td>£1.04</td>
<td>£2.15</td>
<td>£1.60</td>
<td>£1.79</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>£1.63</td>
<td>£2.05</td>
<td>£1.65</td>
<td>£1.84</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Note: The £25,000 is assumed to be retained throughout retirement, growing at 1.8 per cent above inflation. The additional incomes are shown as the level at retirement and assumed to rise in line with prices – this could be either a private pension or other earnings or investment income.

People may also choose to save more than the default rate in personal accounts. These contributions may not trigger an employer contribution, but tax relief will be available on additional contributions and they will also benefit from the low charges on personal account funds.

#### 4.9 Investing outside personal accounts

This analysis concentrates on the benefits of saving in personal accounts or an equivalent exempt scheme compared to not saving for retirement. This is intentional as the reforms are intended to help people overcome existing barriers to saving for retirement, and much of the target market of low-moderate earners are not currently saving for retirement.

Personal accounts are not in themselves an investment, but enable individuals to channel their contributions into other investments. Individuals who prefer to save outside personal accounts are free to make that choice. However the employer/tax relief match is a benefit which may not be available in other investments, and therefore it is difficult to identify an alternative investment vehicle which in general will give better returns for similar risk to a personal account option.
The main results in this document show the expected payback after tax and benefit offsets in retirement. **They should not be directly compared with gross returns from other investments**, as these will also affect benefit entitlement and may lead to a tax liability. If our base case saved in an ISA, with the same gross return of 3.5 per cent and a 0.3 per cent charge (at the lower end of the range of charges) he might get an overall payback of £1.56 per £1 contributed, assuming he spent 10 per cent of the capital per year in retirement (however this probably would not smooth his income as well as an annuity).

Equivalent calculations for alternative investments would have to take many factors into account. One is risk – personal accounts are expected to offer a choice of funds including some low-risk options, but a higher potential payback is often associated with higher risk. Another is the form in which the income is taken – an investment resulting in a capital sum rather than an income stream may be more flexible, but this should be weighed against the risk of outliving that capital.41

4.10 The impact of debt

Rather than investing in a pension, people may choose to ‘save’ by paying off debt. The effective payback on this will depend upon the interest rate being charged, on the size of the debt, and on any restrictions. Those with large amounts of debt at high interest rates may get better results over a lifetime by choosing to pay these off before starting to save in a pension. Those with lower cost or smaller loans, or who face restrictions on their repayment plans, may wish to save alongside paying off the loan.

Again, providing appropriate information will be important but individuals’ preferences will reflect their own circumstances and attitude to debt and saving.

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41 Trivial commutation and the lump sum option provide some flexibility to take a lump sum in personal accounts
5 Affordability and low earners

Summary

Those on lower earnings face a slightly different set of issues when deciding whether or not to save for their retirement. Even where they may expect a good payback on saving, their income from the state is likely to provide them with a high replacement rate on retirement. They might, therefore, have less of a need to smooth their consumption across their lives through saving.

But low earners often are not lifetime low-income individuals. They may be on low levels of earnings only for small periods, perhaps as a result of the need to balance working with other activities such as childcare, and may be part of a higher-income household. People in this group will want to consider their expectations for retirement as well as the cost of saving, when deciding whether to remain in/opt into a personal account. Given these issues and the fact that state pension reforms mean they can still expect to see a good payback on saving, it is appropriate that they should be automatically enrolled, subject to a minimum earnings threshold. The clearer state pension promise will support them in deciding whether remaining in a pension is the best decision for them.

Some people with apparently higher incomes may choose not to save due to their own circumstances, for example because they have expensive debt which they choose to pay off before saving for a pension.

Chapter 2 discussed the two main motives for saving for retirement – to smooth income over a lifetime and to benefit from the payback on the investment.

The foregoing analysis has shown that under reasonable assumptions, most employees of all income levels can expect a good payback in personal accounts. However the flat rate elements of the state pension system mean that those on low earnings can expect high replacement rates from the state system without any further saving, and, although they can expect a good payback, they therefore have less of a motive to save in order to smooth income.
Personal account contributions are, by default, only payable on a band of earnings starting at the Primary Threshold in the National Insurance system (£5,044 in 2006). The decision to exclude those on lower earnings was, in part, to ensure that those who can expect a good replacement rate from their state entitlement are not encouraged to save against their best interests. The cut-off point was set at the primary threshold level as this is the level at which people are expected to start contributing to their retirement through National Insurance Contributions. Those not building up state entitlement for a long period are at risk of retiring onto the guarantee credit only, and so not benefiting from their contributions.

However an individual’s earnings at a point in time may not be a good reflection of their lifetime circumstances. Employees on earnings around the Primary Threshold (PT) are not in full time work (it represents just over 18 hours work at the National Minimum Wage). For many people part-time work enables them to combine work with other commitments and responsibilities and may not be a long-term position. (In 2004/05, 46 per cent of women earning between the PT and £8,000 have children (87 per cent of those aged 30-39 in this band) compared to 27 per cent of all women earning over £11,000.) These low earners may be temporarily on a lower income and benefiting from assets built up during periods of higher income. Or they may live in a higher income household which means saving is affordable and they would face a drop in household income in retirement if the household did not save, and they may wish to build up their own pension pot to provide an independent income in retirement. Forty per cent of all people earning between the PT and £8,000 are women aged 30-49, and a further 15 per cent are people aged 16-21.42 National Insurance data shows that of all employees earning just above the Lower Earnings Limit in 1978/79 (equivalent of about £5,100 to £8,000 today), almost 65 per cent received higher average earnings in the subsequent 25 years (see Annex D for details of income transitions and proportions of two-earner households).

The reforms proposed to state pensions, with an earnings-linked basic State Pension, a simple flat-rate state second pension and wider coverage make it easier for individuals to estimate their likely state entitlement. Lower earners should consider their future workplans and their household circumstances now and in the future before deciding whether to opt out of a personal account or exempt scheme. The key issues will be whether they expect their state entitlement to provide an income which will meet their expectations for retirement without further saving, and perhaps the affordability of pension contributions. The matching contribution in personal accounts and equivalent schemes provides a clear incentive for those eligible. In addition, maintaining a savings habit through a temporary fall in income will help to ensure they continue to save when earnings increase again. For those on low incomes, default contributions are low in absolute terms as they are four per cent on income above the lower limit only – someone earning £1,000 a year above the lower limit would pay less than £1 a week.

42 Source: Family Resources Survey 2004/05.
In addition, some people with apparently higher incomes, who would face significant drops in income in retirement if they did not save, may nevertheless choose not to save. They may be at a stage of their life where they have many calls on their income, and so are better not saving even though the payback on that saving could be high. An example of this is someone with large amounts of long-term debt at high interest rates, as discussed in Chapter 4. Others may choose not to save in personal accounts because they expect alternative sources of income in retirement, such as housing equity or bequests, or they already have sufficient savings.
6  Exempt schemes and other groups

Summary

Not all people of working age will be automatically enrolled into personal accounts. This chapter looks at their position with regards to the payback on saving.

People who are enrolled into a suitable alternative work-place scheme are likely to see a similar or better payback than those in personal accounts, as many alternative schemes are likely to be more generous in terms of the employer contribution than personal accounts. People under 22 who opt into a scheme are also likely to receive a slightly better payback as their fund has longer to grow.

The self-employed will be able to opt into personal accounts. They will not benefit from an employer contribution, but they are also unlikely to be self-employed throughout their working lives. Whether or not to opt-into a personal account will depend on other circumstances which are looked at in more detail in this chapter.

The analysis so far has looked at employees aged 22 to state pension age, the group which will be automatically enrolled into personal accounts.

Employees aged under 22 will have the opportunity to opt into a personal account, and receive the employer contribution. Their payback is likely to be similar to but slightly better than those aged 25 – they have longer to benefit from investment growth and those with a good state pension record will be kept above the Pension Credit threshold on retirement by their state pension entitlement.

Employers with an existing ‘good’ pension scheme will be exempt from the need to enrol employees into personal accounts. Where the exempt scheme mirrors the default personal account, the payback will be the same. However some employers
may choose to provide more generous benefits, through either an exempt scheme or making higher contributions than the default into personal accounts.

As with personal accounts, payback from such a scheme will depend on a variety of factors such as investment growth and annuity rates, and those in employer schemes with different structures or contribution levels would have a different expected payback. Table 6.1 shows how pension reform affects a member of an illustrative scheme which mirrors the personal accounts structure and charge level but assumes the individual contributes at the default personal accounts rate while his employer puts in 6 per cent of earnings in the band rather than 3 per cent. In practice structures may differ. These illustrative examples should therefore not be taken to show payback from any particular scheme.

Table 6.1 Projected real payback and replacement rates for an illustrative exempt scheme

<table>
<thead>
<tr>
<th>Age in 2012</th>
<th>Earnings</th>
<th>Replacement rate</th>
<th>Replacement rate</th>
<th>Payback per £1</th>
<th>Replacement rate</th>
<th>Payback per £1 on extra saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>£6,000</td>
<td>130%</td>
<td>132%</td>
<td>£1.99</td>
<td>133%</td>
<td>£2.79</td>
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<td></td>
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<td>66%</td>
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<td>£1.12</td>
<td>54%</td>
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<tr>
<td></td>
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<td>38%</td>
<td>£1.04</td>
<td>39%</td>
<td>£1.49</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>28%</td>
<td>30%</td>
<td>£1.63</td>
<td>31%</td>
<td>£2.23</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

Self employed individuals will also have the opportunity to opt in to personal accounts, but of course will not receive an employer contribution. The self employed gain basic State Pension but not state second pension rights through payment of Class 2 National Insurance Contributions. Many self employed people will have been employed for part of their working lives and may have some existing pension saving and additional state pension income accrued during these years. The decision on saving will depend on their circumstances or expected circumstances over their
entire life. An individual self-employed his or her entire life would not build up entitlement to State Second Pension, and so if their household had no other saving or income would retire on to guarantee credit only. A small amount of saving would therefore only benefit them in retirement if they took it as a lump sum through trivial commutation, in which case they would receive the full value of their tax relief and investment returns, minus any tax or benefit offset due on the lump sum. For most self-employed people this would represent a significant fall in their standard of living. However this is not a typical career; most self-employed people have spent some time in employment and so will have some state second pension entitlement and possibly some private pension from their time in employment, and most people have some savings and retire as part of a couple.

The following table shows the potential payback for two examples of self-employed men, assuming they continue to contribute to personal accounts at the rate of five per cent of gross earnings during their self-employed years. Inevitably it can show only a few illustrative cases – in practice there will be a wide variety of work histories. The cases shown are based on the Pensions Commission’s stylised individuals, but are assumed not to start work until 25 as in the base case.

**Table 6.2  Projected real payback for other working patterns**

<table>
<thead>
<tr>
<th>Replacement rate</th>
<th>Income at Retirement</th>
<th>Payback per £1</th>
</tr>
</thead>
<tbody>
<tr>
<td>If not saved</td>
<td>If saved</td>
<td>If not saved</td>
</tr>
<tr>
<td>Base case –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>median earning</td>
<td>35%</td>
<td>£154</td>
</tr>
<tr>
<td>employee from 25</td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>Mid-career self-employed – self employed from 30-44 inclusive, approximately median earnings but rising gradually.</td>
<td>26%</td>
<td>£140</td>
</tr>
<tr>
<td>End-career self-employed – self employed from age 50</td>
<td>14%</td>
<td>£139</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.

43 These are the hypothetical individuals discussed by the Pensions Commission. In each case they are assumed to be 25 in 2012. These cases follow the assumptions for earnings profiles outlined in the Pension Commission Report. Further details are in Appendix F to A New Pension Settlement for the Twenty-First Century: The Second Report of the Pensions Commission.
Appendix A
Notes on modelling

The analysis in this document is based on a DWP spreadsheet model. This model shows how saving in a personal account or equivalent employer scheme might affect an individual’s retirement income.

Some caveats should be borne in mind when interpreting results:

• This is a long run model that ignores the potential impact of cyclical variation in economic performance. It assumes that certain key macroeconomic trends such as investment growth occur evenly and at a constant rate and can be represented by an annual growth rate.

• Each model run is purely illustrative since the model represents illustrative individuals, the characteristics of which have been specified through assumptions about their income path, gender etc (see table below).

• The model proceeds to calculate the impact for an individual by projecting forward economic assumptions and considering how their contributions and pension is affected by the tax and benefit system.

• The model shows a straightforward progression through the stages of an individual’s life. It does not try to take account of uncertainty or potential variety of outcomes, either in the characteristics of the individual or in external factors such as investment growth and annuity rates.

The model is similar to one developed by the Pensions Commission.

For the base case, an individual of a given age and gender starts work at 25 and starts saving in a personal account from 2012. They contribute at the default rate each year they are in work, and their contributions are increased by the employer contribution, tax relief, and through the growth of their investments minus charges. On reaching state pension age they retire and annuitise the fund.\(^4\)

\(^4\) In fact, the 25 per cent tax free lump sum is taken and then annuitised. This part of the annuity attracts a lower tax rate as that part considered to be return of capital rather than investment growth can be taken tax free.
assumed to be index-linked, and the annuity rate is based on the rates currently available, adjusted downwards in proportion to the increase in life expectancy projected by the Government Actuary’s Department. For the base case, individuals are assumed not to have any previous savings that count for income related benefit purposes.

We compare the retirement income an individual might receive if they save, with what they could otherwise expect. It assumes they would be eligible, subject to income and savings, for the standard levels of Pension Credit and for Council Tax Benefit, and takes into account any tax liability.

The net payback is derived by expressing the contributions made and the net increase in income over the expected length of retirement (in 2006 prices), and comparing the two results. The payback on saving is shown in real terms.

The model therefore assumes constant utility of income. In practice individuals may place more value on the income they receive in retirement when their overall income has fallen compared to when they were in work.

The replacement rate is then calculated as the sum of their state and private pension provision and any benefit entitlement in the year of retirement divided by their gross earnings in the year before retirement (increased in line with average earnings). Gross figures are used for replacement rates to allow easy comparisons with the Pension Commission’s recommendations on replacement rates.

Internal rates of return are given in Annex C. These are calculated in nominal terms to allow comparison with other investments (although they cannot be compared directly with gross returns in other investments which will not take account of any tax or benefit offsets in retirement). A rate of return equal to inflation is equivalent to a real return of £1 for each £1 contributed.

Working age benefits and tax credits are not included in this model. Contributions to a pension can be deducted from income taken into account in claiming benefits and tax credits. The Tax Credit calculation disregards the entire value of any pension contributions, so the Tax Credit will be increased by the value of the pension contribution multiplied by the appropriate taper rate. Housing Benefit disregards half the value of the contribution. These allowances will not affect the return on the pension, as they do not affect the contributions, but mean that people affected will receive for their £1 contribution a return in retirement as shown, plus an additional amount on their working age benefits. Tax relief is given at the rate of 40 per cent for higher rate taxpayers and 22 per cent for all others.

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45 That is not entitled to additional amounts in guarantee credit, e.g. for severe disability, so the higher guarantee level does not apply.
The following table gives the details of the base case. The alternatives considered are described in the main text as required. All assumptions are simply assumptions for the purpose of the modelling; they should not be regarded as statements of Government policy.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male.</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single.</td>
</tr>
<tr>
<td>Work history</td>
<td>Neither working nor credited until age 25, then works until State Pension age.</td>
</tr>
<tr>
<td>Earnings</td>
<td>Median earnings are taken to be £23,000. This is based on figures for median full time adult employees from the Annual Survey of Hours and Earnings, rounded to the nearest whole £1,000.</td>
</tr>
<tr>
<td>Earnings growth</td>
<td>2% above RPI inflation, in line with the assumption on economy wide average earnings growth.</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>In accordance with Government Actuary's Department cohort life expectancy forecasts of life expectancy at age of annuity. The pension funds of those who die before this age can be inherited.</td>
</tr>
<tr>
<td>Payback on pension funds</td>
<td>3.5% real terms annual increase, equal to 6.47% nominal. This is based on the Pensions Commission’s work, which assumed a portfolio with 60% equities, 20% corporate bonds, and 20% government bonds.</td>
</tr>
<tr>
<td>Price inflation</td>
<td>2.87%. This is the RPI equivalent of the Bank of England’s 2% CPI target.</td>
</tr>
<tr>
<td>Real earnings inflation</td>
<td>2% above RPI.</td>
</tr>
<tr>
<td>Administration Charges</td>
<td>0.5%, in line with assumptions based on international experience from the Pensions Commission research (Second Report, Pages 396-398).</td>
</tr>
<tr>
<td>Retirement age</td>
<td>State Pension age.</td>
</tr>
<tr>
<td>Saving begins</td>
<td>2012.</td>
</tr>
<tr>
<td>Individual contribution rate</td>
<td>Personal accounts default rate.</td>
</tr>
<tr>
<td>Previous private savings</td>
<td>None.</td>
</tr>
<tr>
<td>Employer contribution rate</td>
<td>3% – personal accounts default.</td>
</tr>
<tr>
<td>Annuity rate</td>
<td>Current gender-specific annuity rates for the appropriate age adjusted to reflect changes in life expectancy. Based on the best rate available for £50,000 pot as at 29 September 2006 (Financial Services Authority website). This implicitly assumes that the expected yield of an annuity remains roughly constant over the long term.</td>
</tr>
<tr>
<td>Annuity type</td>
<td>Single life, inflation linked.</td>
</tr>
<tr>
<td>Tax free lump sum</td>
<td>Full amount (25%) is taken then annuitised – this is the most tax-efficient method of annuitising.</td>
</tr>
<tr>
<td>State entitlement</td>
<td>Based on work history and starting credits for ages 16-18 – no other credits received.</td>
</tr>
</tbody>
</table>
### Variable Assumptions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic State Pension</td>
<td>Uprated in line with earnings from 2012.</td>
</tr>
<tr>
<td>State Second Pension</td>
<td>Uprated in line with earnings until pension age and prices thereafter.</td>
</tr>
<tr>
<td>Savings Credit</td>
<td>In accordance with proposals in <em>Security in retirement</em>.</td>
</tr>
<tr>
<td>Guarantee Credit</td>
<td>Standard minimum guarantee uprated in line with earnings.</td>
</tr>
<tr>
<td>Council tax Benefit</td>
<td>Earnings uprated, included in baseline.</td>
</tr>
<tr>
<td>Housing Benefit</td>
<td>Baseline: not claimed.</td>
</tr>
<tr>
<td>Tax system</td>
<td>Starting rate – 1%. Basic rate – 22%. Higher rate – 40%.</td>
</tr>
<tr>
<td>Tax bands and allowances</td>
<td>Uprated in line with earnings. This is not current practice, but uprating it in line with prices would lead to implausibly high tax take in the long term, and so earnings has been used instead. As with other assumptions, this should not be taken to imply Government policy. If instead we assumed that tax bands rose in line with earnings, our base case could expect payback of £2.17 per £1 rather than £2.55. The age limits remain constant.</td>
</tr>
<tr>
<td>Tax-relief</td>
<td>Given at the higher of the individual's marginal rate or basic rate, in line with current tax system.</td>
</tr>
</tbody>
</table>

### Detailed work histories of case study individuals from Table 3.2

Low earner with some short breaks and part-time working:

Age 21-28 she works full-time – earning around 60 per cent of female median earnings.

Age 29-34 she then has a career break to care for a child for six years.

Age 35-39 she returns to part-time work at around 35 per cent of female median earnings for five years.

Age 40-49 she then works full-time again at 60 per cent of female median earnings.

Age 50-54 she then returns to part-time work for five years (30 per cent of female median earnings).

Age 55-59 she takes another career break for five years in her 50s for which she receives no carer benefits or credits.

Aged 60 she returns to full-time work again, until reaching State Pension age (earning approximately 60 per cent of female median earnings).
**Carer, who because of her age and the ages of her children has missed out on some S2P credits:**

Aged 35 when personal accounts starts in 2012.

Age 16-21 she works, earns female median earnings.

Age 22-31 she takes a break to care for children. Given the age she is assumed to have had her two children she would have missed out on three years of State Second Pension credits.

Aged 32 she returns to full time work at female median earnings and saves into personal accounts until reaching State Pension age.

**Long career break of 25 years to care for children:**

Age 16-25 she works, earning around 60 per cent of female median earnings.

Age 26-50 she takes a career break – raising three children (she is entitled to full basic State Pension and State Second Pension credit but since her youngest child reaches age 12 after 18 years, she has seven years without credits).

Aged 51 she returns to work until State Pension age – starting at 60 per cent of female median earnings increasing to female median earnings.
Appendix B
The minimum employer contribution and the macroeconomic impact

Some commentators have argued that as a significant part of the cost of the employer contribution is likely to be passed through to a reduction in wage growth it should not be considered as increasing the payback on an individual’s contribution. However in practice and at levels less than the whole economy, there is not generally a direct choice between wages and pension contributions.

For an individual making the choice to opt out or stay in, the employer contribution should be considered in his or her expected payback, as they are very unlikely to be offered an alternative of a wage increase to the same value. Opting out will mean they forgo the value of the employer contribution. A similar result holds for particular subgroups of the population, since it is not likely that the wages of that particular group would increase in comparison to others to reflect the fact that they were not (automatically) enrolled. While it is theoretically possible that wages could be sufficiently responsive to correctly compensate a particular group, in practice it is likely that a variety of mechanisms will be used which will not so directly relate to a particular individual or group’s benefit. Where wider considerations suggest that a group is not enrolled (such as those under the age of 22), they are given the option to opt in, to ensure that the benefit is open to those who choose to take advantage. Those aged under 22 or over 65 who opt in to Personal Accounts or an exempt scheme will be entitled to the employer contribution on their default contributions within the usual earnings band.

On a macroeconomic level, we do expect to see some offsetting effect on wage growth amongst other mechanisms. In choosing to incorporate an employer contribution, the Government took into consideration the welfare and economic
impacts. These include the benefits of enabling individuals to smooth their consumption and the boost to Gross National Product which is expected from the increase in saving due to the reforms. Further discussion of this is presented in the regulatory impact assessments published alongside *Security in retirement: towards a new pensions system* and in *Economic and social welfare impacts of pension reform*. The minimum employer contribution also helps people to see that saving is valuable and so helps overcome the difficulties of working out whether to save. It provides a clear signal that saving in a pension is valuable.
Appendix C
Internal rates of return

Looking at total payback does not take into account the time an individual must wait to receive the funds. Individuals generally prefer to receive income sooner rather than later, and this preference is incorporated into the theory of saving through discount rates.

The Internal Rate of Return (IRR) considers the stream of cash flows created by pension saving. During working life, these will be negative as the individual is making contributions, but positive in retirement when they reap the rewards of this saving.

IRRs can be thought of as a way of annualising the total payback on investment analysis in the main part of this publication. A rate of return equal to inflation will be given when the overall real return is £1 for each £1 contributed.

A rational man would save if his expected IRR exceeded his own personal discount rate, in other words if the income would be more valuable to the individual as consumption in the future than today. As with the concept of ‘worthwhile’ overall returns, an individual’s discount rate will depend on a variety of external factors, some of which (such as replacement rates) we can model but others (such as plans for retirement) we cannot.

The following charts replicate the main analyses in the main text. While there is no ‘obvious’ hurdle rate, most people would consider these IRRs to be high, and to be a sign that for most people in this position, it would be worthwhile to save. It must be remembered that these do not just represent the gross return during fund build-up, but incorporate the effect of taxes and benefit withdrawal in retirement.
Figure C.1 Internal rates of return

Table C.1 Projected internal rates of return

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>55 with saving</td>
<td>55</td>
</tr>
<tr>
<td>Age in 2012</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Earnings</td>
<td>£6,000</td>
<td>5.4%</td>
</tr>
<tr>
<td></td>
<td>£15,000</td>
<td>6.1%</td>
</tr>
<tr>
<td></td>
<td>£23,000</td>
<td>6.1%</td>
</tr>
<tr>
<td></td>
<td>£33,000</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Source: DWP modelling. This figure is for illustrative purposes only. It should not be used as the basis for individual decisions as specific circumstances or variation from the underlying assumptions will lead to different results.
Appendix D
Income trajectories and household earnings

We can use existing national insurance records to look at income trajectories of those earning small amounts in the past.46 This data is available from the financial year 1978/79 until 2003/04.

Almost 65 per cent of employees with earnings just above the Lower Earnings Limit in 1978/79 (equivalent of about £5,100 to £8,000 today) received higher average earnings over the period 1978 to 2003 (excluding years where they did not earn as employees). This suggests that during working lives, the majority of people move up in the labour market. Indeed 29 per cent of women and 64 per cent of men on low earnings in 1978/79 earned over £20,000 in at least one year in the period for which data is available – making them close to average earners. Slightly more women than men were in this low earnings band in 1978/79.

Figure D.1 shows the average earnings over the subsequent 25 years of those who were in the low earnings band in 1978/79.

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46 Source: Lifetime Labour Market Database.
The majority of working households consist of two earners. At either end of the distribution, it is marginally more likely that there will be only one earner. Those workless individuals who are part of a richer household may want to contribute to a private pension in order to benefit from an independent income when they are of pensionable age.
Figure D.2  Composition of household earnings structure

Source: Family Resources Survey 2004/05