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ENDING COMPULSORY ANNUITISATION

Quantifying the consequences

A Pensions Institute report for policymakers, financial advisers, and pension scheme members

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Ending compulsory annuitisation: Quantifying the consequences

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List of abbreviations

ASP	Alternatively Secured Pension
BSP	Basic State Pension
CETV	Cash Equivalent Transfer Value
CFEB	Consumer Financial Education Body
CPI	Consumer Price Index
DB	Defined Benefit
DC	Defined Contribution
DMO	Debt Management Office
DWP	Department for Work and Pensions
EET	Exempt-Exempt-Taxed
FSA	Financial Services Authority
HMRC	Her Majesty's Revenue & Customs
ISA	Individual Savings Account
LPI	Limited Price Indexation
LGPS	Local Government Pension Scheme
MIR	Minimum Income Requirement
NEST	National Employment Savings Trust
NI	National Insurance
NRA	Normal Retirement Age
ONS	Office for National Statistics
RPI	Retail Price Index
SERPS	State Earnings Related Pension Scheme
S2P	State Second Pension
SIPP	Self-invested Personal Pension
USP	Unsecured Pension
VAR	Vector autoregression

Foreword

This is the eighth[1] of our series of reports that focus on pensions issues of direct relevance to policymakers, financial advisers, and pension scheme members.

The Conservative–Liberal-Democrat Coalition Government that came to power on 11 May 2010 announced that it was going to end the requirement for pension scheme members to purchase annuities by the age of 75.

We felt that this proposal would have some serious unintended consequences and wrote to The Times on 27 May 2010:

Sir, The new Government has confirmed manifesto promises to remove the requirement that individuals use their pension fund to buy an annuity at retirement. Such a policy would be popular, easy to implement and generate much needed tax revenues. However, we have grave concerns that this will have serious consequences for the security of pensioners' retirement incomes and the public finances.

Without an annuity, retired people risk outliving their resources and also bear the responsibility of managing their financial assets. If things go wrong, they will surely turn to the taxpayer for help. The Conservatives propose a minimum annuity purchase, so pensioners never become eligible for means-tested benefits. We suspect that estimating such a minimum will be difficult, since benefits are calculated according to individual circumstances and these circumstances, together with the level of state support, are likely to change considerably over the next 30 years.

The proposal could lead to significant changes in the nation's savings decisions and tax payments. It could also encourage members of occupational pension plans - including those in the public sector - to access their entire fund as a lump sum rather than receive it as income. This would turn the current steady decline in defined benefit pension plans into a rout, as pension fund sponsors - and that would include the Government - had to find cash immediately, instead of gradually over a long period into the future.

We suggest that the seriousness of the unintended consequences of their pension policy is fully recognised and that the policy proposal is re-examined.

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http://www.timesonline.co.uk/tol/comment/letters/article7137165.ece

Following publication of the letter, we were approached by the Prudential and invited to prepare two reports that expanded on the ideas that were contained in the letter.

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1. Previous reports are listed at the end of this document.

The first of these reports 'Ending compulsory annuitisation: What are the consequences?' published in July 2010 was designed to stimulate the debate about the proposal to end the mandatory requirement to purchase annuities in pension schemes as formally announced in the Budget Statement on 22 June 2010 and subsequently expanded upon in the HM Treasury consultation document 'Removing the requirement to annuitise by age 75' released on 15 July 2010.

This second report 'Ending compulsory annuitisation: Quantifying the consequences' is intended to provide a quantitative assessment of the issues raised in the first report. We also provide policy recommendations in relation to this proposal.

This research was sponsored by the Prudential and we are extremely grateful for their support. The Prudential has not sought to influence the conclusions of the report and they may not share or endorse the views expressed here. Furthermore, the Prudential have not imposed any conditions or requirements on the contents of the report.

We should also stress that the views in the report are those of the authors and not necessarily those of the Pensions Institute, which itself takes no policy position.

David Blake, Edmund Cannon and Ian Tonks
September 2010

Executive summary

1. The Government intends to end the requirement for defined contribution pension scheme members to annuitise their pension fund by the age of 75. This report provides a quantitative analysis of some of the key consequences of this policy.

2. We have calculated the level at which the Minimum Income Requirement would need to be set to have a minimal effect on demand for Pension Credit. We suggest that the total pension would need to be initially around £14,100 for an individual (including the BSP) and around £20,000 for a couple (including the BSP), rising in line with inflation. Further calculations which take account of uncertainty about wages and prices suggest that these levels are conservative and that there is a high probability that pensioners who annuitise to these levels will still receive significant amounts of benefits. We have not attempted to evaluate whether the total pension figures shown would meet people's actual expenditure needs throughout retirement. Given the complexity of the state benefit system and the variability in people's personal circumstances, we are unable to quantify the impact on demand for other means-tested benefits.

3. We estimate that 28 per cent of retiring pensioners with private pension savings would have sufficient pension wealth to secure a MIR at the levels outlined above. We also estimate that the minimum cost of the Pension Credit alone that these pensioners might eventually be able to claim is £83 million per annum (a total of £1.7 billion in present value terms when we add up across all future years). This figure does not include the cost arising from other means-tested benefits that we have been unable to quantify. It is crucially important for policymakers to recognise that these cost estimates are highly sensitive to the assumptions chosen, and that there is therefore a considerable risk to the public finances in setting the MIR too low. Using different but still plausible actuarial assumptions, for example, would double the cost of Pension Credit estimated above. So although this figure is uncertain, it is likely to be an under-estimate.

4. If the requirement to annuitise at age 75 above the MIR is abolished, and if instead individuals access flexible drawdown, we estimate that the compulsory purchase annuities market will shrink from its current value of £11 billion per annum to around £9 billion per annum. Further, the value of DC pension funds that could be accessed as a lump sum or drawdown product would be between £1 billion and £2 billion per annum.

5. We suggest that the proposal to abolish the annuitisation requirement for DC pension schemes will have an effect on the DB pensions market, either through DB members demanding similar rights under their scheme or through pension transfers. We suggest that if the same rules on annuitisation above a Minimum Income Requirement in the DC market are applied to the DB market, between £10.2 billion and £16.7 billion of DB pension fund assets may be accessed each year by the retiring cohort. We suggest that if the Government does not intend its proposals on the relaxation of annuity rules for DC pensions to apply to DB pensions, it will need to legislate to prevent this.

6. We argue that the proposal to abolish the annuitisation requirement will have an effect on the government bond market. If the retiring cohort of pensioners access their DC lump sums, we predict insurance companies will no longer need to hold government bonds in the same quantity to back their annuity products and would become net sellers of between £0.5 billion and £1.2 billion of gilts annually. Similarly if DB pensioners also access the lump sum equivalent of their pensions at retirement, DB pension funds will liquidate between £3.2 billion and £5.2 billion of long-term government debt annually. This liquidation of government debt will occur at a time when the Government is attempting to fund a huge budget deficit by issuing bonds.

7. Allowing pensioners to avoid annuitisation will make it possible for pension fund wealth to be used to escape inheritance tax. The consultation proposes a 55 per cent recovery charge. Since this merely cancels the tax relief on pension contributions of a higher rate taxpayer, such a charge may be insufficient to prevent higher-rate tax payers using pension wealth for inheritance tax planning which may result in a loss of tax revenues. However, the 55 per cent recovery charge would be penal for basic rate taxpayers. Differential treatment in this way may be perceived as unfair and result in political pressure for further changes.

8. Optimal decumulation investment strategies can be highly complex and need to take into account anticipated investment returns, attitude to risk, life expectancy, health status and the desire to make bequests. Further, the optimal strategies are not static and involve complex choices about, say, the optimal timing of annuity purchases. However, these strategies typically fail to take into account the cognitive problems that elderly people can face when dealing with investments. The proposed change to the pensions annuity market represents a shift from a "consumption frame" to an "investment frame". We also report that, whether as a result of cognitive impairment or an inappropriate framing of choices, many older adults will find it difficult to make sensible decisions about how to invest and spend their retirement savings. The Government could find itself embroiled in another mis-selling scandal and this time involving vulnerable elderly people.

9. The Government's proposals are likely to lead to an increase in the variability of outcomes for pensioners. As a consequence of this: (i) there is the risk of increasing long-term political pressure from the retired population for a larger share of the national cake and (ii) there is the risk of increased poverty among pensioners who make poor decisions with their wealth.

1. Introduction

The Conservative–Liberal-Democrat Coalition Government that came to power on 11 May 2010 announced that it intended to end the requirement for defined contribution pension scheme members to purchase annuities by the age of 75. This was formally confirmed in the Budget Statement of 22 June 2010. The Finance Bill 2010 of 1 July announced that the minimum age for annuitisation would be raised to 77 years as a transitional measure to defer compulsory annuitisation while further consultation on rule changes takes place. On 15 July 2010, HM Treasury published a consultation document, 'Removing the requirement to annuitise by age 75', which outlined the Government's proposals. The consultation paper emphasises that the tax treatment of pension savings should continue to follow the "exempt-exempt-taxed" (EET) model, but suggests three important changes: (i) there will be no requirement to annuitise DC pension funds at age 75, and instead individuals can either choose to access their pension funds through capped drawdown (similar to the current unsecured pension or USP) or access their funds as a lump sum through flexible drawdown; (ii) in the case of flexible drawdown, the intention is to establish a minimum required annuitisation level, based on a Minimum Income Requirement (MIR); and (iii) the introduction of a tax relief recovery charge on capital withdrawals at death to recover the value of the tax relief made available during the accumulation phase of the pension scheme.

In an earlier report 'Ending compulsory annuitisation: What are the consequences?' published in July 2010, we attempted to identify some of the issues and consequences of the Government's decision to end compulsory annuitisation. We argued that these consequences fell into two categories, those that affect individuals and those that affect the wider society in terms of claims on the public purse.

It is difficult for rational, well-informed individuals to run down retirement assets at the appropriate rate: spending too quickly results in exhausting assets and lower welfare in later retirement, while spending too slowly results in under-consumption and leaving unintended bequests. The advantage of an annuity is that it overcomes both of these problems. The advantages are even larger for individuals who have low levels of financial literacy, poor understanding of longevity risk or are less than completely rational, since an annuity protects them from making serious mistakes. It also prevents them from gaming the system to increase entitlement to means-tested benefits.

The consequences of the policy change for taxpayers could be equally devastating. Not only could there be a huge increase in claims for means-tested benefits, there could also be demand from defined benefit scheme members, including public sector workers in unfunded schemes, to have their pension as a lump sum rather than as an income. There will also be new opportunities to use the pension system to create tax loopholes and there is likely to be a fall in the demand for long-term government bonds which will occur at precisely the time the Government is issuing debt to plug the hole in the Government finances. To mitigate these problems, the Government is proposing a minimum level of annuitisation in order to satisfy a MIR, with the minimum set at a sufficiently high level that pensioners could never fall back upon means-tested benefits. While this goes some way to dealing with the consequences listed above, we highlight a number of problems with determining what the minimum level should be, chief among these being the wide differences in individual circumstances.

Existing pensions policy is premised on tax exemptions being given to pension funds in exchange for those funds being used to generate a life-long pension income: compulsory annuitisation was the quid pro quo for tax relief. It is worth asking why the policy should be changed now. Willetts (2010) has observed that the baby boomer generation seems to have benefited at the expense of both previous and younger generations. We know that previous generations accepted compulsory annuitisation. The pension prospects of future generations look increasingly bleak: younger generations tend to have very little pension savings and many are likely to have to annuitise all of their pension funds under the MIR. This might result in a curious outcome, namely that the relaxation of the compulsory annuitisation requirement will only really benefit the current generation coming up to retirement (and then only a small subset of that generation). This might be perceived as generationally unfair. Further, there is a risk that many people will substitute income for capital and will be less likely to spend that capital to meet day-to-day expenses. This will lead to further demands for state support in areas such as health care, long-term care and winter fuel payments. The reforms may also result in a greater disparity of outcomes as a result of poor investment choices or excessive expenditure. This would lead to further demands for state support in addition to any demand for support from existing means-tested benefits.

One possible answer to the issue of intergenerational fairness is that by allowing individuals to avoid annuitisation they are able to pass on more wealth to their heirs. In fact, the consultation document makes it clear that "the Government does not intend pensions to become a vehicle for the accumulation of capital sums for the purposes of inheritance" (¶2.2). But even if the policy did allow more wealth to be passed to the future generation by inheritance, only the relatively rich would benefit and this would contribute to the UK's twin problems of increasing inequality and falling social mobility, precisely one of the points that Willetts sees as an intergenerational problem.

The importance of this point is difficult to quantify and for the rest of this follow-up report, we concentrate on quantifying the more strictly economic effects of the policy of removing the annuitisation requirement. In particular, we will address the following issues, providing quantitative assessments where possible:

(i)   determining the likely size of the Minimum Income Requirement (Section 2);
(ii) estimating the numbers of pensioners expected to satisfy the MIR and the value of the
      means-tested benefits they might eventually claim (Section 3);
(iii) quantifying the impact on annuity markets (Section 4);
(iv) quantifying the impact of the proposal on DB schemes (Section 5);
(v)   quantifying the impact of the proposal on the long-term government bond markets (Section 6);
(vi) examining the cognitive problems that elderly people can face when dealing with investments (Section 7);
(vii) considering the effect of the 55 per cent recovery charge on future savings decisions and inheritance (Section 8);

Based on our analysis in the previous sections, Section 9 provides our responses to the questions raised in the consultation document

2.   Calculating the Minimum Income Requirement

Chapter 3 of the HM Treasury consultation document considers the Minimum Income Requirement (MIR). The primary purpose of the MIR is to ensure that a pensioner does not "exhaust their pension savings prematurely and subsequently fall back on the state" (¶ 3.2). Given the complexity of the state benefit system, it is impossible to devise a MIR which completely precludes pensioners receiving means-tested benefits and the consultation document recognises this by stating that the MIR must be a "reasonable proxy" which ensures that the "probability of falling back on the state is minimal" (¶ 3.12).

A further complication is that calculation of the MIR is dependent upon the future path of inflation and earnings. Based on projections of these variables over the next 35 years, we first calculate the MIR that ensures a pensioner would receive no Pension Credit or Guarantee Credit before the age of 100. We then consider a more sophisticated approach which quantifies the uncertainty surrounding projections so far into the future and use this to calculate an alternative MIR.

Benefits such as Housing Benefit and Attendance Allowance are dependent on tenancy and health status, respectively. The interaction of these benefits with other benefits, pension income and wealth is complicated and we ignore them in this analysis. However, the impact of these benefits along with Council Tax Benefit and long-term care support are potentially significant.

2.1 The MIR based on fixed projections of future inflation and earnings

Pensioners who have made a full set of National Insurance contributions throughout their working life will receive the full Basic State Pension (BSP), which is currently £97.65 per week for individuals and £156.15 per week for couples (respectively, £5,077.80 and £8,119.80 per year). However, Guarantee Credit ensures that the minimum income actually received is £132.60 for individuals and £202.40 for couples (£6,895.20 and £10,524.80 annually) and Pension Credit ensures that they receive benefits if their pension income is less than £9,620 and £14,130, respectively.

The June 2010 Budget announced a "triple guarantee" that BSP and entitlement levels would rise at the minimum of average earnings, 2.5 per cent or inflation (measured using the CPI). We show the history of these variables since 1964 in Figure 2.1, together with the RPI measure of inflation as the CPI is not available before 1988. Nominal wages have grown faster than prices in every year of the period 1993-2009 except 2009, when both wage growth and inflation were less than 2.5 per cent and 2007-8 when RPI was above wage growth. The average rate at which pensions would have grown over this period were the new policy to have been in place since 1964 is almost exactly 4 per cent per year.

Figure 2.1: Wage growth and price inflation
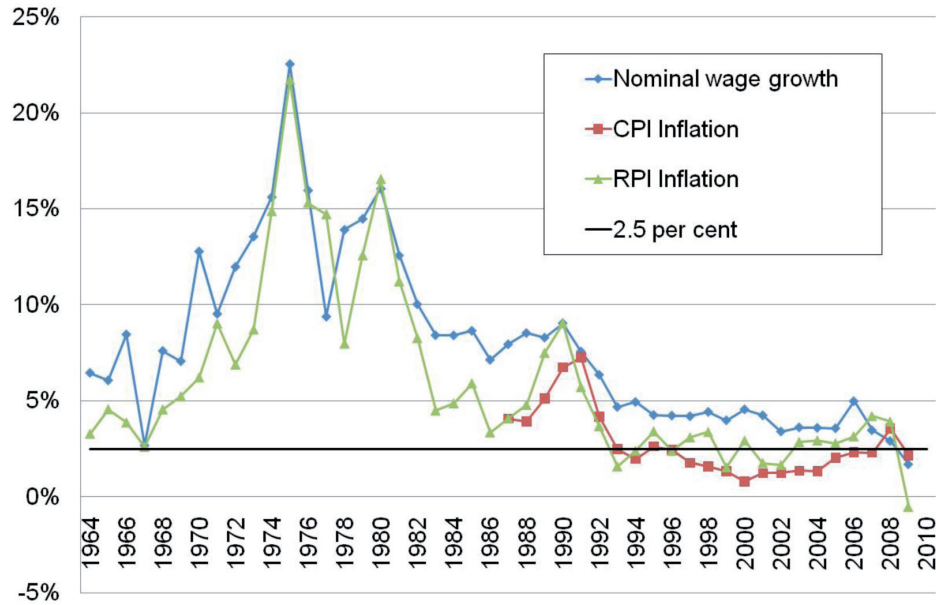
Assuming this 4 per cent growth in pensions continues into the future, we illustrate what might happen to the BSP and the entitlement limits in Figure 2.2 for the next 35 years (i.e., for the case of a pensioner currently aged 65 until they are 100). The solid black line shows what might happen to the BSP over the period; the dotted line shows the minimum income assured by Guarantee Credit; and the dashed line shows the maximum level of total pension income that a pensioner can have without receiving any Pension Credit.

Figure 2.2 Evolution of pension benefits
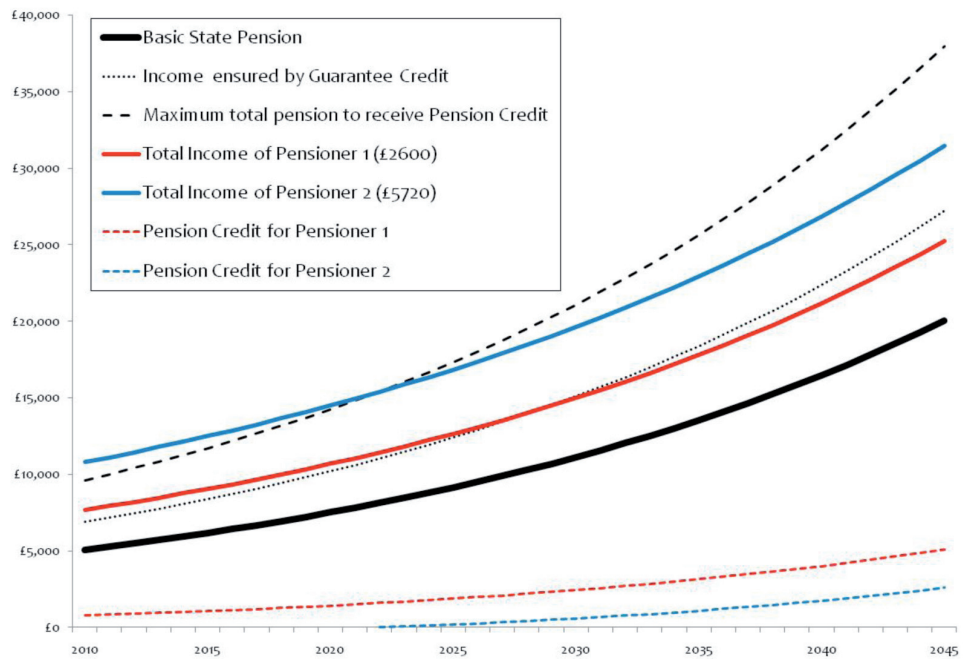
We now consider what would happen to a pensioner's private pension. For the purposes of this analysis, we mean this to include the sum of any occupational or personal pensions that an individual has and, in addition, include any SERPS or S2P.[2] The consultation document suggests (¶ 3.8, ¶ 3.9) that the MIR would include the caveat that the income would grow in line with Limited Price Indexation (LPI). LPI is defined as the lower of 2.5 percent and CPI-based inflation. From the data in Figure 2.1, the CPI-based measure of inflation has averaged 2 per cent over the period 1993-2009 and we assume that the pension grows at the same rate going forward.

Because the triple guarantee means that state pension entitlements can never grow by less than 2.5 per cent and since LPI means that private pensions need not grow by more than 2.5 per cent, it is inevitable that state pension entitlements will grow faster than any LPI-linked secured income source used to meet the MIR. Figure 2.2 illustrates this for two hypothetical pensioners. In both cases, we assume that they have no income other than their pension (i.e., they have no earnings and their total non-pension savings are less than £10,000).

Pensioner 1 has a relatively small pension fund and purchases an LPI-linked annuity starting at £2,600 per year (£50 per week). Together with the BSP, this means that his total pension income is £7,678: the growth of total BSP and private pension income is illustrated by the red line. Given his low pension income, he receives both Guarantee Credit and Pension Credit. Over time, his income rises less rapidly that the growth rate in these two means-tested benefits and, by about 2029, it is less than the minimum guaranteed. His means-tested benefits become gradually more generous over time (growing at an average of 5.5 per cent per year).

Pensioner 2 has a larger pension fund and is able to purchase an LPI-linked annuity starting at £5,720 per year (£110 per week); combined with the BSP, this makes a total of £10,798 per year (illustrated by the blue line). This means that his pension income is sufficiently high that he is not initially eligible for means-tested benefits. Because Pensioner 2's pension grows more slowly than the state entitlement cut-offs, he will become eligible for Pension Credit by 2022.

The key issue here is that the cut-offs for means-tested benefits will typically grow at the rate of (nominal) earnings and this will nearly always be higher than the rate of growth for a pension indexed by LPI.[3] We may establish the MIR with reference to the pension income streams in Figure 2.2. We need to identify a total pension income stream that intersects the maximum total income that just receives Pension Credit (the dashed line in Figure 2.2), for a pensioner aged 100 in 2045. This intersection establishes that such a pensioner would just fall into the entitlement to Pension Credit. We then track this level of pension income back to 2010.

2 The State Second Pension is based on two factors: (i) the number of years that an individual has paid NI contributions while not contracted out into an occupational pension (i.e., they are alternatives not complements); (ii) a measure of career average income (where salaries earned in earlier years are adjusted for inflation to make them comparable in real terms). Such pensions have only been in existence since 1978 when the policy was introduced as the State Earnings Related Pension Scheme (SERPS): significant changes were made in 2002 when the scheme was renamed the State Second Pension Scheme. This means that the maximum number of qualifying years earned so far is 32. Since the pension is 20 per cent of the career average income (which is itself limited by a cap) the maximum S2P is only about £3000. In the data sources we use below it is difficult to separate the S2P from the BSP. Any SERPS or S2P will contribute to the MIR automatically, since it rises in line with inflation.

3 One solution to this problem would be that pensions had to grow in line with wages to meet the MIR. Such annuity products are currently unavailable and it is difficult to see how life insurers could provide them in the absence of earnings-linked bonds (currently only RPI-linked bonds are available). We do not consider this possibility further.

Under the assumptions we have made so far about earnings and the LPI, we estimate

- the MIR for a 65-year old individual in 2010 would be £14,100.

This figure is inclusive of the BSP and so requires a minimum annuitisation of £9,000 per year (£173 per week) on top of the BSP. The MIR will ensure that he is ineligible for Pension Credit before the age of 100. The probability of a 65-year old man living to be more than 100 is currently projected to be 8 per cent.

It might be argued that to pay means-tested benefits to 8 per cent of the population is a sufficiently small cost that it would satisfy the condition in the consultation document that the costs be minimal. However, the probability of a 65-year old woman living to 100 is currently projected to be 26 per cent: there is an 8 per cent probability that the woman could live to 107. To ensure that only 8 per cent of women received means-tested benefits, it would be necessary to have an annuity whose initial payment was £10,300, 14 per cent higher than for a man.

So far we have been talking in terms of individual pensioners. But most pensioners at retirement, are in couples and for them the BSP and the entitlement cut-offs are different. Using similar analysis to the above, we estimate that

- the MIR for a couple should be £20,000 including the married couple's state pension.

We suggest that a couple would have to buy a joint annuity initially paying £11,900, but which would revert to £9,000 (the same as for an individual) upon the death of the first partner.

2.2 The MIR based on stochastic projections of future inflation and earnings

All of our analysis so far ignores the random nature of earnings and prices and the resulting uncertainty in predicting the future paths of pensions. As Figure 2.1 makes clear, wage and price inflation has in certain years been both considerably higher and considerably lower than the 4 per cent average we have used for the fixed projections.

We now extend our analysis by projecting the future paths of inflation, earnings and pensions assuming the same level of variability in inflation and earnings that was observed in the period 1993-2009: this period can be considered to be one of reasonable price stability.

Based on these data, we estimated a simple econometric model of real wages and the CPI and use it to simulate possible growth paths for nominal wages and inflation. This allows us to calculate the pension payments that would be made for each growth path.[4]

4 The technical details are as follows: we modelled real wages rather than nominal wages since nominal wages are so highly correlated with inflation. The model was a two-lag vector autoregression (VAR) model which included real wage growth, CPI inflation and RPI inflation (for comparison purposes of RPI-linked pensions). The use of two lags was based upon the finding that the second lag was significant in all regressions. The model implicitly makes identifying assumptions that real wages and prices are I(1) but are not cointegrated. Projections were based on the parameter estimates from the VAR (treated as certain) with Monte Carlo disturbances drawn from a multivariate Normal distribution whose covariance matrix was taken directly from the VAR estimation. All the programming was done in OX.

Our results are illustrated in the form of a blue fanchart in Figure 2.3 for Pensioner 1 from the example above. Recall that Pensioner 1's initial private pension income is £2,600 and grows by LPI. The black line in the middle is the central estimate (i.e., the median) and successively lighter shades of blue reflect lower probabilities.[5]

Fig 2.3: Simulations of the distribution of means-tested benefits for Pensioner 1
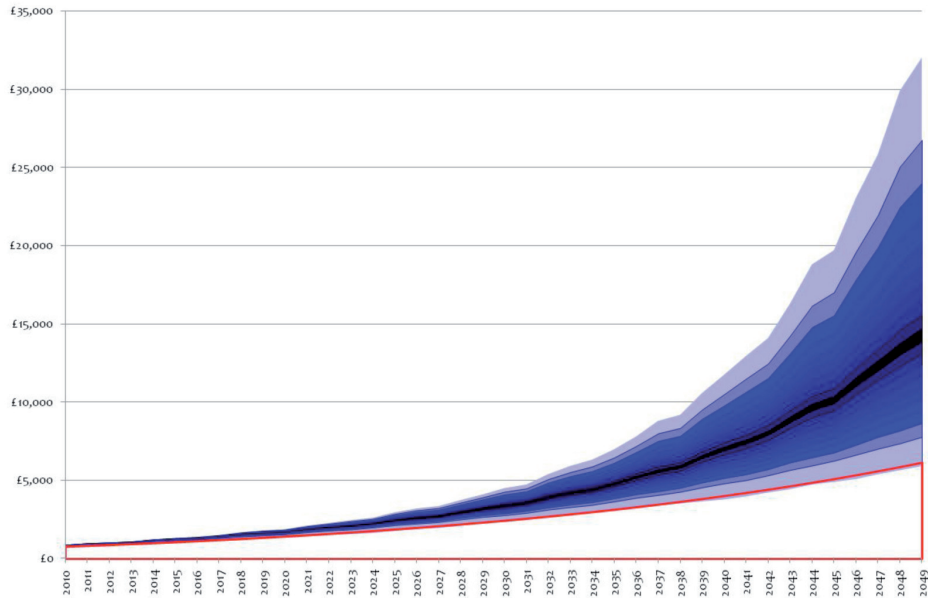
The bright red line at the lower end of the fan chart is the line taken from Figure 2.2 which assumed complete certainty. Note that almost the entire fan chart lies above this line. The reason for this is that the effect of uncertainty is a one-way bet: LPI means that the private pension nearly always increases by less than 2.5 per cent (bounded below by zero), whereas the state benefit cut-offs nearly always increases by more than 2.5 per cent and can increase by quite a lot more.

Given the upsided nature of the risk to means-tested benefit levels when inflation uncertainty is taken into account, this suggests that the MIR should be set at a considerably higher level than that indicated in the model above assuming fixed future inflation. Our criterion then was to set the MIR to ensure that no benefits would be received before age 100. When we account for risk, we need a different criterion, so instead we look at the expected present value of means-tested benefits that an individual pensioner will receive if they buy an LPI-indexed annuity. Our results are shown in the second column of Table 2.1.

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5 Each successive change in colour is the boundary of a 5-percentile range (on some computers it may be difficult to distinguish all of the colours)

Table 2.1: Means-tested benefits payable to 65-year-old pensioners with different starting pensions

Starting LPI-linked pension payment (£ per year)	Expected present value of Pension Credit		
	Male using "Lives" (PML92, sc)	Males using "Amounts" (PMA92, sc)	Females using "Amounts" (PFA92, sc)
520	39,146	48,129	61,398
1,560	32,684	40,783	52,937
2,600	26,222	33,437	44,475
3,640	19,760	26,092	36,013
4,680	13,298	18,746	27,552
5,720	8,240	12,819	20,520
6,760	5,184	8,955	15,606
7,800	3,335	6,389	12,077
8,840	2,201	4,648	9,479
9,880	1,501	3,455	7,543
10,920	1,054	2,618	6,074
11,960	761	2,019	4,945
13,000	562	1,581	4,065
14,040	425	1,257	3,371
15,080	327	1,010	2,816

The figures in the first column arise from putting weekly amounts on to an annual basis (i.e. they are multiples of 52).

Table 2.1 shows that the expected present value of all means-tested benefits to Pensioner 1 is £26,222, given his initial pension of £2,600. This might seem a relatively small sum compared with the potentially large sums that could be paid out in future years as shown in Figure 2.3. But Figure 2.3 takes no account of the fact that payments made a long way in the future need to be discounted heavily and that the probability of making those payments is also small because the further ahead these payments are due, the less likely the pensioner is to be alive to receive them. So although Figure 2.3 shows the median means-tested benefit payable to Pensioner 1 in 2045 (when he will be 100) to be over £10,000, the probability of Pensioner 1 being alive then is about 8 per cent and the effect of discounting £1 paid in 2045 to today's values reduces it to about 24 pence. So the expected present value of the possible £10,000 payment in 2045 is about £192.

Given this, Table 2.1 provides a method for setting the MIR, once the maximum acceptable level of means-tested benefits has been decided. Suppose £1,000 per year would be acceptable for example: then the MIR for a single male should be set at about £16,000 per year, including BSP.

This is a relatively high level of pension and anyone receiving such a high pension is likely to have a much higher life expectancy than a typical pensioner. We therefore re-calculated the net present value of Pension Credit using "Amounts" rather than "Lives" tables and report our results in column 3 of Table 2.1. We calculate the corresponding figures for women and these are in column 4.[6] This results in much higher figures. Although we do not use these in our analysis below, their intention is to show that our estimates are likely to be conservative and the costs to the tax payer may eventually be much higher.

2.3 The MIR and employment income

The consultation document makes it clear that the MIR must be in payment if the pensioner is to be allowed to access the rest of their pension fund and is confined to pension income (¶3.6 and ¶3.7): earnings and non-pension investment income are excluded. This is clearly correct since a pensioner will eventually choose or be forced to stop work and there is therefore no guarantee that they will continue to meet the MIR once employment ceases.

Many pensioners receive income from employment and this number is likely to increase with the removal of the default retirement age, the raising of the state pension age and the need for people with insufficient pension savings to continue to work.

It is difficult to see how a simple policy could be framed that allowed a pensioner to use earned income to meet the MIR in the short run without then creating a significant risk that they will fall back on means-tested benefits when employment ceased. For this reason, we support the proposal that the full MIR should be secured upon accessing the pension fund, regardless of employment income.

2.4 Means-tested benefits in the short run

Current pension policy allows pensioners to purchase a level annuity (i.e., one that is not indexed to any measure of inflation). For a given purchase price, these provide a much higher level of starting income. Were policy to make it compulsory to purchase a LPI-indexed annuity, it would result in many personal pensioners having a lower retirement income initially, although since it will be growing they will have a higher income in the future than if they had bought a level annuity.

A consequence of this would be that relatively poor pensioners are likely to receive more means-tested benefits upon annuitising, because they will have a

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6. The "Lives" tables calculate the simple average mortality across all private pensioners. The "Amounts" tables weight by size of pension, so that richer (and therefore more longer-lived) pensioners have a disproportionate effect on life expectancy. Details can be found in Cannon and Tonks (2008).

lower income than they would have had if they had purchased a level annuity. This may be compensated for by them having lower means-tested benefits in the future. This effect will be amplified over time with the shift towards DC pensions meaning that the long-term impact on demand for means-tested benefits (and therefore the potential interaction with the MIR) will be greater.

The total effect on means-tested benefits, measured by the expected net present value, is likely to be roughly neutral, but means-tested benefits will certainly rise in the short run. We have not attempted to quantify this because of the difficulty in finding information on proportions of pensioners with different types of indexing arrangements.

Summary

We have calculated the level at which the Minimum Income Requirement would need to be set to have a minimal effect on demand for Pension Credit. We suggest that the total pension would need to be initially around £14,100 for an individual (including the BSP) and around £20,000 for a couple (including the BSP), rising in line with inflation. Further calculations which take account of uncertainty about wages and prices suggest that these levels are conservative and that there is a high probability that pensioners who annuitise to these levels will still receive significant amounts of benefits. We have not attempted to evaluate whether the total pension figures shown would meet people's actual expenditure needs throughout retirement. Given the complexity of the state benefit system and the variability in people's personal circumstances we are unable to quantify the impact on demand for other means-tested benefits.

3. Numbers of pensioners expected to satisfy the MIR and the value of the means-tested benefits they might eventually claim

In this section, we estimate the number of pensioners likely to satisfy the MIR and the likely cost of means-tested benefits that will be payable if the MIR is set at the levels suggested in Section 2.

The mean average annual private pension income for recently retired pensioners who have a private pension is £3,536 for individuals and £9,568 for couples. From the data sources available, we are unable to separate the distribution of the recently retired from all pensioners or to separate couples from individuals. Nevertheless, it is clear from Figure 3.1 that the distribution of private pension income is very highly skewed to the right. In numerical terms, the median pension is only 61 per cent of the mean.

Figure 3.1: Distribution of total private pension income (weekly income)
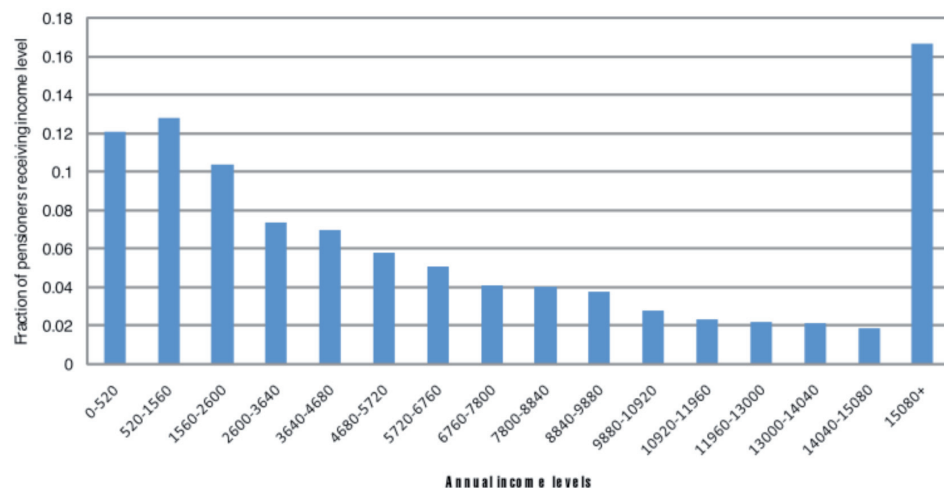
Source: DWP(2010) Pensioners' Income Series

It is also clear from this figure that most pensioners have less than our estimates of the annual MIRs of £14,100 and £20,000, for individuals and couples, respectively.[7]

Because of the deficiencies of Figure 3.1, we combine the information in this figure with that in DWP (2010, Tables 2.3, 2.4 and 3.9). This suggests that the mean of the distribution of pensioner income is £168 per week and that the means of recently retired pensioner couples and individuals are £184 and £68, respectively. We use these figures to make simple mean shifts to the distribution in Figure 3.1 and then calculate the resulting proportions of these distributions.

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[7] These figures are calculated from the weekly averages for occupational and personal pension income in Table 2.3 of DWP (2010). These figures under-estimate the total pension figure that we need since they do not include pension income from SERPS/S2P which is aggregated with the BSP in the Table.

There are likely to be compositional effects in the distribution, which this assumption ignores, and this should be borne in mind when interpreting the subsequent calculations. A summary of our results is shown in Table 3.1.

Table 3.1: Estimates of the number of pensioners affected and the cost of means-tested benefits

	Number of Pensioners (000)	Proportion with private pension (%)	Proportion with income in excess of MIR (%)	Total expected NPV of means-tested benefits (£million)
Male individual	120	54	17	£10.8m
Female individual	68	54	5	£2.8m
Couples	248	75	32	£3.6m
Survivors*				£66.2m
Total			28	£83.4m

Note: * derived from an actuarial model and the initial number of couples

To illustrate, there are approximately 120,000 single male pensioners, of whom 54 per cent have a private pension. From our estimate of the distribution of pensions for single males, we estimate that 17 per cent of those with a pension would not receive Pension Credit if they annuitised all of their pension wealth, but by annuitising less (just sufficient to meet the MIR) they will receive some Pension Credit. We perform the same calculations for female individuals and also for couples. The total proportion of all retiring individuals who have pension savings (so a couple counts twice) affected is 28 per cent.

We now do a further calculation to estimate the costs. We assume that individuals remain as individuals, but recognise that couples are likely to become individuals as one partner dies (we ignore family creation and divorce, etc). We construct a simple actuarial model to work out the time path of the number of survivors from couples where one member dies.[8]

From actuarial tables, we can forecast the expected number of individuals, couples or survivors still alive at any point in the future. Using the model of inflation and earnings described in Section 2.2, we generate a series of tables analogous to Table 2.1 for males, females, couples and survivors using the appropriate amounts from the distribution as starting values and sum across the distribution. So, for example, the increase in the expected present value of Pension Credit to male individuals is £10.8 million per annual cohort that retires. This sum may sound rather small, but consider the following: many male individuals would have received means-tested benefits anyway; some individuals die before receiving any means-tested benefits; those who do receive means-tested benefits tend to receive them a long way into the future and so the present value is small.

8. This is based on actuarial tables PM/FL92 short cohort and assumes independence of deaths. All of the calculations in this section are based on "Lives" mortality.

The figure is even smaller for female individuals, mainly because female individuals have such small pensions to start with that they are likely to receive means-tested benefits regardless of the new policy. The group which is most likely to receive Pension Credit despite having the MIR is couples, although by the time that they receive the money one of the members of the couple is likely to have died and so only the survivor will benefit.

Summing across the different groups we see that the total cost for a single year's retirees is about £83 million. The total cost of the policy is the cost of all future years' retirees summed together (and appropriately discounted). However, the distribution and level of private pensions is likely to vary considerably between cohorts. Given data limitations, we have not attempted to calculate this directly, but instead use an annuity factor of twenty to obtain a total cost in the region of £1.7 billion.[9]

However, we believe this figure to be an under-estimate for two reasons. First, we have omitted some of the means-tested benefits that pensioners would receive (Attendance Allowance, etc). This is necessary due to limitations on data that are too restrictive for us to perform reliable calculations: as detailed in our first report, the rules for receiving such benefits are complicated and depend upon both income and wealth. Furthermore, historical data would only be of limited help, since some of the benefit rules changed in the June 2010 Budget.

Secondly, we have calculated the expected present value of benefits based on mortality which is appropriate for the whole population, but those who escape the annuitisation requirement are likely to be longer lived than normal. Comparison of the Lives and Amounts calculations in Table 2.1 suggests that using Amounts data would lead to twice as large an increase in cost as suggested.

Summary

We estimate that 28 per cent of retiring pensioners with private pension savings would have sufficient pension wealth to secure a MIR at the levels described above. We also estimate that the minimum cost of the Pension Credit alone that these pensioners might eventually be able to claim is £83 million per annum (a total of £1.7 billion in present value terms when we add up across all future years). This figure does not include the cost arising from other means-tested benefits that we have been unable to quantify. It is crucially important for policymakers to recognise that these cost estimates are highly sensitive to the assumptions chosen, and that there is therefore a considerable risk to the public finances in setting the MIR too low. Using different but still plausible actuarial assumptions, for example, would double the cost of Pension Credit estimated above. So although this figure is uncertain, it is likely to be an under-estimate.

9. This is the same annuity factor as the Government uses to convert DB pension amounts into present value terms to check that the Lifetime Allowance is not violated.

4. The impact of the proposal on the UK annuity market

In 2009, according to figures from the ABI, the UK's new pension annuity market (i.e., sales of new policies) consisted of 465,000 policies with a value of £11 billion, so that the average policy value is around £23,655. We will examine the effect of the proposal to remove compulsory annuitisation of DC schemes on this market, taking into account that those individuals below the MIR will still be required to purchase an annuity.

The DWP's Pensioners' Income Series gives details of pensioners' incomes based on information collected in the Family Resources Survey (FRS). This survey provides a breakdown of pensioner income from the state pension, other benefits, investment income, earnings occupational and personal pensions. Figure 4.1 shows the distribution of pensioners' incomes from personal pensions for those in receipt of it. In 2008-09, the mean personal pension income for the recently retired was £97 per week (£5,044 p.a.).

Figure 4.1: Distribution of annual income (£p.a.) from personal pensions in 2008-09 of "recently retired"
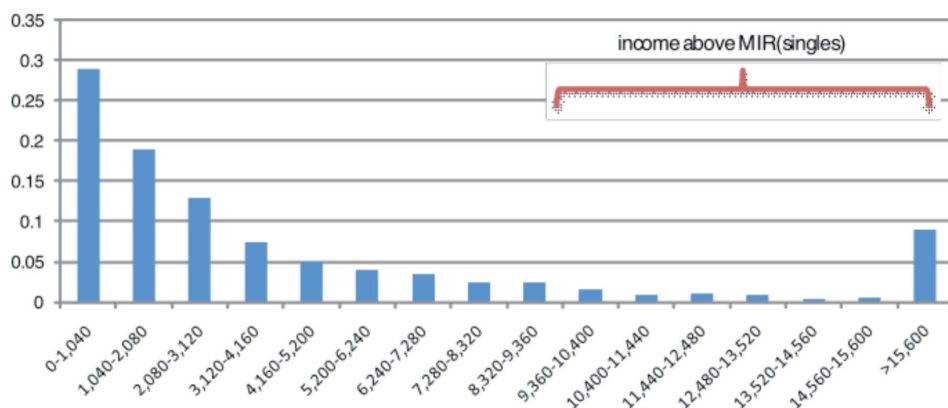
Source: DWP (2010) Pensioners' Income Series

Relaxing the requirement to annuitise affects those individuals above the MIR and to examine the effect of the proposal on the UK annuity market we take the pensioners' incomes from personal pensions above the MIR, for those pensioners who are retiring each year, and convert into an annuity value using the following formula:

Annuity value = No. pensioners x Annuity income x Capitalisation factor

To estimate this annuity value, we need to know the number of persons retiring each year, along with their ages and gender; the personal pension income received by these groups; and a capitalisation factor that converts pension payments into a lump sum equivalent value. We discuss each component of this calculation in turn.

Number of pensioners

The DWP (2010) Pensioners' Income Series gives details of the number of "recently retired pensioner units" (about 2,000,000 units with 1,100,00 couples and 900,000 singles) in 2008-09, where "recently retired" is defined as pensioner units where the head is less than 5 years over state pension age, namely, single women between 60 and 64, single men between 65 and 69, and pensioner couples where the head is between 65 and 69 if male, or between 60 and 64 if female. Therefore, to obtain an estimate of the number retiring each year, we need to take a proportion of these figures, allowing for the fact that these five-year aggregates will include a disproportionate number of those pensioner units who have retired in the first year, and a disproportionate number of single females. We allow for these effects in Table 4.1.

Table 4.1: Numbers of retiring persons per year

	Numbers	Numbers receiving personal pension
Married couples	248,534	62,134
Single males	67,503	8,775
Single females	119,856	15,581
Total number of retiring units in 2010	435,892	86,490

Sources: DWP (2010) Pensioners' Income Series, and own calculations

The last column is obtained from the proportion of recently retired pensioner couples and single units receiving a personal pension given in the Pensioners' Income Series as 25 percent and 13 percent respectively.

Pensioners' incomes

The Pensioners' Income Series breaks down the income received from personal pension schemes, by recent retirees, and into couples and singles, and by gender. In Table 4.2, we report the mean and median amounts of personal pensions received by type of pensioner household.

Table 4.2: Average amount of personal pension income of recently retired for those in receipt of personal pensions in 2008-09

	Mean personal pension (£)		Median personal pension (£)	
	Per week	Per year	Per week	Per year
Married couples	109	5,668	48	2,496
Single males	145	7,549	69	3,605
Single females	45	2,323	21	1,109

Source: DWP (2010) Pensioners' Income Series, Table 3.7, and gender split from Table 2.6

We can combine the distribution of personal pension income from Figure 4.1 with the average amounts received by each household type to obtain a distribution of personal pensions by household type, under the assumption that the entire distribution is shifted up or down to match the average pension for that type. There are likely to be compositional effects in the distribution, which this assumption ignores, and this should be borne in mind when interpreting the subsequent calculations.

Capitalisation factor

All that remains is to apply a capitalisation factor to obtain the value of these personal pensions. We use standard actuarial methods to compute the present value of a £1 annual annuity income, by age and gender, assuming survival probabilities of each group taken from the Continuous Mortality Investigation (2002) life office pensioner tables PMA92 and PFA92 with the short and long cohort corrections.[10]

Table 4.3:
Capitalisation factors for a pension of £1 per annum payable for life

	Survival probabilities	
	Short cohort	Long cohort
Panel A: Single annuity for 65-year-old male		
Level	13.6	14.4
Escalating at 2.5%	17.6	19.1
Real	19.2	21.1
Panel B: Single annuity for 60-year-old female		
Level	16.3	16.9
Escalating at 2.5%	22.6	24
Real	25.3	27.1
Panel C: Joint annuity for 65-year old male, reverting to 60% for 63-year old female on death of male		
Level	15.4	16.2
Escalating at 2.5%	20.7	22.5
Real	23	25.1

Source: CMI (2002) life office pensioner tables PMA92 and PFA92

The retiring cohort of pensioner units is made up of couples and singles, and we assume that couples purchase a joint life annuity, with the annuity payment reduced to 60 per cent on the death of the male. We assume couples consist of a 65-year old male married to a 63-year old female (based on an assumption of a 2.4 year difference in the ages of the couple[11]). Single women pensioners are assumed to be aged 60, and singles male pensioners are assumed to be aged 65.

10 Further details of such calculations can be found in Cannon and Tonks (2008)

11. Social Trends (2010), pp 19-20

Annuity values for the retiring cohort

We now combine the information in Tables 4.1, 4.2 and 4.3 to produce estimates of the annuity values implied by the personal pension incomes that are accessed by the retiring cohort. We first estimate the implied annuity values without making allowance for the MIR, i.e., by assuming that the present value of all personal pension income could be accessed at retirement.

This would be the situation if all of the retiring cohort with DC pensions accessed the capped drawdown option as explained in the consultation paper (¶ 2.14).

Table 4.4: Estimated present values of personal pensions for annual retiring cohort before applying the MIR

	Numbers receiving personal pensions	Mean pension (£ per annum)	Total present value of personal pensions (£ million)	
Capitalisation factor assumption			Level/Short	Real/Long
Married couples	62,134	5,668	5,423	5,705
Single males	8,775	7,549	901	954
Single females	15,581	2,323	590	612
Total value			6,914	7,271

Source: Own calculations based on Pensioners' Income Series

According to Gunawardena et al (2008), 87 per cent of annuity products sold, are level annuities, and for this reason we use the capitalisation factor in Table 4.3 for level annuities. The final two columns of Tables 4.4 provide estimates of the value of annuities on the basis that the products sold are level annuities. These estimates suggests that depending on the assumptions made about survival probabilities (short and long cohort projections), the total present value of personal pension income is between £6.9 billion and £7.3 billion.

However, as previously mentioned, the ABI estimate of the size of the pensions annuity market in 2009 is £11 billion, so, using our approach, we appear to have under estimated the size of this market. This under-estimation may be due to a number of factors: (i) although the modal age for annuity purchase is age 65, many people access their personal pension income before this date, which would increase the value of their annuities; (ii) some of the pension annuity market will represent annuitisation of occupational DC pensions, which are not included in the Pensioners' Income Series personal pension income figures; (iii) some of the annuities purchased are escalating or real annuities, and as Table 4.3 shows, this would involve a higher capitalisation factor; (iv) we have already mentioned that there will be compositional effects in the distribution of the data on personal pensions, in particular single females are likely to form a greater percentage of the lower incomes; and (v) there may be errors in the reporting of pension incomes.

The consultation paper suggests that only funds above those necessary to sustain a MIR may be accessed under flexible drawdown, and provided that the recipient has annuitized up to the MIR in an escalating annuity (¶ 2.15, ¶ 3.3, ¶ 3.9). Our earlier calculations have suggested that the MIR for a single

person might be £14,100 (including the BSP of £5,077.80), meaning that only individuals receiving above approximately £9,000 per annum from a DC pension may access flexible drawdown, and then only having first annuitised their funds to receive an inflation-protected pension of £9,000 per annum. Similarly, for a couple, the MIR will be at least £20,000 per annum (again including the married couples' BSP of £8,119.80), meaning that only couples receiving above £11,900 from a DC pension and having annuitised to receive this pension may access flexible drawdown. We may apply a cut-off at the MIR to the distribution of personal pension income, as illustrated in Figure 4.1, to estimate the annuity value of personal pension income above the MIR, under the assumption that these individuals are only in receipt of personal pension income in addition to the BSP In other words, they are not receiving any other additional pension income (either occupational or SERPS/S2P). To the extent that individuals are receiving other secure sources of life-long pension income, this would enable greater amounts of personal pension income to be accessed under flexible drawdown. Table 4.5 shows the size of the annuity market that could be accessed at retirement above the MIR.

Table 4.5: Estimated annuity values of personal pensions for annual retiring cohort above the MIR

	Numbers receiving personal pensions above MIR	Mean pension above MIR (£ per annum)	Total present value for personal pensions above MIR (£ million)	
Capitalisation factor assumption			Level/Short	Level/Long
Married couples	7,767	13,200	1,078	1,067
Single males	2,325	14,711	266	271
Single females	1,402	2,909	11	0
Total value			1,354	1,339
Total value after scaling adjustment			2,155	2,025

Own calculations based on Pensioners' Income Series

The numbers in Table 4.5 are calculated on the basis that individuals whose personal pension income is above the MIR are required to purchase an escalating annuity (using the relevant capitalisation factors from Table 4.3) up to the MIR. The estimates in Table 4.5 indicate that the total value of personal pension income above the MIR is between £1.3 billion and £1.35 billion. This is around 19 per cent of the total annuity market that was estimated in Table 4.4. We believe that our estimates in Table 4.4 under-estimate the size of the annuity market as reported by the ABI. Applying a scaling adjustment to our estimates, we predict that abolishing the requirement to annuitise DC pension funds above the MIR, will cause the remaining compulsory purchase pensions annuity market to shrink from its current size of £11 billion to around £9 billion, and that the value of DC pension funds that could be accessed as a flexible drawdown product would be between £1 and £2 billion per annum.

As an additional check on these calculations, we can also use the ABI figures on the distribution of pension annuities sold by fund size as illustrated in Figure 4.2. We will assume that individuals have no more than one policy, although in practice, it is possible for individuals to have more than one policy. The Figure then shows the number of individuals buying annuities for various fund sizes.

Figure 4.2: Distribution of pension annuities sold in 2009 by size of fund
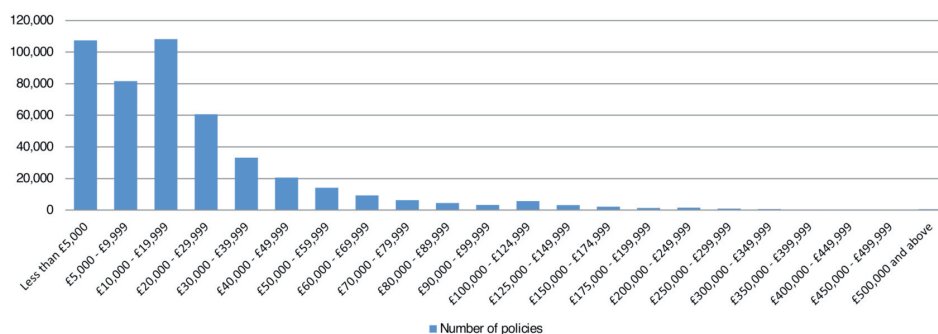
Source: ABI Annuity Sales Data

We may calculate the implied fund size necessary to satisfy the MIR, under alternative assumptions about the capitalisation factor, and, in particular, whether the annuity providers are using the long or short cohort corrections in Table 4.3.

Table 4.6: Additional estimated values of personal pension funds of annual retiring cohort

Panel A	MIR (above BSP)	Fund size necessary to satisfy MIR (£ million)	
Capitalisation factor		Level/Short	Level/Long
Married couple	£11,800	181,720	191,160
Single male	£9,000	122,400	129,600
Single females	£9,000	146,700	152,100
Panel B	Numbers receiving personal pension above MIR	Total present value for personal pensions above MIR (£ million)	
Capitalisation factor		Level/Short	Level/Long
Married couples	3,242	493	465
Single males	1,707	207	195
Single females	2,152	302	290
Total value		1,001	949

Own calculations based on ABI Annuity Sales Data

In Panel A of Table 4.6, we compute the minimum fund size necessary to satisfy the MIR for couples and single males and females, where we make the previous assumptions on the ages of the retiring cohort. We can see that the implied fund size varies depending on the relevant group from £122,400 for single 65-year-old males using the short-cohort correction to a fund size of £191,160 for a married couple. In panel B, we apply these minimum fund sizes to the distribution of funds in Figure 4.2, to obtain the potential fund sizes that could be released if these individuals accessed flexible drawdown. We assume that the distribution of these fund sizes across the type of pensioner unit is given by the ratios in Table 4.1 which again may lead to compositional errors in our calculations. The estimates in Table 4.6 suggest that the pension annuity market will shrink by between £949 million and £1 billion.

These estimates are smaller than our estimates in Tables 4.5. The two sets of estimates have been computed under different approaches: the first takes data on the distribution of pensioner incomes and imputes fund values (Table 4.5); the second takes the existing fund values of annuity policies and makes assumptions about the distribution of pensioner types. We suggest that using both approaches provides an upper and lower bound on the likely effect of the flexible drawdown option on the existing pensions annuity market.

Finally, we note some caveats on the effects of the policy change on the annuity market. Our estimates have assumed that individuals who are able to access the flexible drawdown market will do so. This is an extreme assumption to illustrate the magnitude of the potential effects. In fact, many individuals with large pension funds who could choose an unsecured pension, actually choose to annuitise and they do so between the ages of 60-65. Such individuals clearly have a demand for the hedging properties of annuities, and it is possible that even if they were able to access flexible drawdown, they would still choose to annuitise. In addition, some individuals are currently accessing USP, and it is possible that if these individuals were able to access flexible drawdown, they would be willing to annuitise up to the MIR in order to access their funds above the MIR. This would actually represent a boost to the current annuity market.

Summary

If the requirement to annuitise at age 75 above the MIR is abolished, and, if instead, individuals access flexible drawdown, we estimate that the compulsory purchase annuities market will shrink from its current value of £11 billion per annum to around £9 billion per annum. Further, the value of DC pension funds that could be accessed as a lump sum or drawdown product would be between £1 billion and £2 billion per annum.

5. The impact of the proposal on defined benefit schemes

Abolishing the compulsory annuitisation requirement for DC schemes is likely to have implications for both occupational DB and DC schemes. The Impact Assessment in the consultation document mentions the impact of the proposed change on occupational DB and DC pension schemes and ¶ 20 suggests that relatively few occupational schemes will make the required rule change in the short term. We question this view.

The Government Green Paper (DWP, 2002) carried the message that the complexity of the previous pensions regime hindered an individual's ability to make sensible savings decisions. A key proposal (subsequently enacted on A-day in April 2006) was to simplify the pensions taxation system with a move to a new system based on a Lifetime Allowance. According to HM Treasury/ Inland Revenue (2002), a guiding principle in simplifying the tax rules for pensions included "consistency: to give people confidence that everyone has equivalent rights and opportunities" (¶ 3.5) and "By eliminating the complexity of multiple sets of overlapping rules, people will be freed to make clear and confident decisions about savings for retirement without the need for expensive advice. In the new single, unified regime there will be no need to distinguish between defined benefit and defined contribution schemes, allowing savers and employers sponsoring schemes to make arrangements for pensions to suit their career patterns and the needs of the labour market." (¶ 3.6)

The implementation of the Lifetime Allowance by HMRC has meant that both DB and DC pensions are deemed to have an underlying fund value. In the case of a DC scheme, this is explicit; for DB schemes, it is implicit. For tax purposes, the two types of occupational pensions are treated the same. Assuming that the desire for equality of treatment between DB and DC schemes continues, then abolishing the compulsory annuitisation requirement for DC schemes should also apply to DB schemes. In fact, the transfer rights of members of DB schemes would also imply that an individual member of a DB scheme has the right to transfer into a DC scheme.[12] FSA (2010) provides advice on the risks associated with pension transfers. Under current rules, there has been little point in DB scheme members switching to a DC scheme, since it would still be compulsory to annuitise 75 per cent of the pension fund by age 75. Given transactions costs and the fact that the pension wealth transferred may be calculated at unfavourable actuarial rates for all except those with health problems, the benefit to following this strategy has only been used by a small minority of people in particular circumstances.

Removing the annuitisation requirement could change the situation dramatically. Currently, there is a puzzle as to why individuals in a DB scheme seem content to convert their implicit pension fund into a regular pension income, whereas many individuals whose savings are in a DC scheme are reluctant to annuitise.[13]

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12 Pension transfers are seen as necessary for ensuring an efficient labour market (Becker, 1964) although the Government is currently consulting on proposals that would abolish transfers between contracted-out DB and DC schemes and is seeking an amendment to the Occupational Pension Schemes (Contracting-out) Regulations 1996 and The Contracting-Out (Transfer and Transfer Payments) Regulations 1996.

13 Selection effects might explain these preferences, since individuals who choose to join a DC scheme may have different characteristics from individuals who opt for a DB scheme.

One reason relates to behavioural psychology and suggests that the annual reporting of the size of the DC pension fund, rather than the amount of pension that the fund will generate, plays a role in this puzzle. With annual pension statements in DB schemes now showing the cash value of DB pensions (in order for individuals to be informed that they are within their Lifetime Allowance), the removal of the need to annuitise, when combined with the presentation of a cash value for accrued benefits, may have significant behavioural consequences. In simple terms, it may lead DB members to prefer taking the fund rather than the pension. Further, financial advisors may have an incentive to contact retiring members of DB schemes, pointing out that they are now able to access their pension fund values. We will now provide estimates of the potential quantum here. We wish to emphasise that this is a potential unintended consequence of the proposal to relax the annuitisation requirement, but the Government may need to legislate to prevent DB scheme members also accessing flexible drawdown.

Table 5.1 shows the numbers of active, deferred and pensioner members of occupational pension schemes. There are a total of 27 million members of occupational pension schemes, split roughly equally between active members, deferred members and pensioners. Of the 9 million active members, 5.4 million are in the public sector and 3.6 million in the private sector.

Table 5.1: Number of members of occupational pension schemes in 2008

Type of member		Numbers (millions)
Active members		9.0
	Private sector	3.6
	Public sector	5.4
Pensions in payment		8.8
	Private sector	5.0
	Public sector	3.9
Deferred pension entitlements		9.9
	Private sector	6.7
	Public sector	3.2
Total		27.7

Source: Occupational Pension Schemes Survey (2009, Table 2.1)

Table 5.2 shows the 9 million active members divided across DC and DB schemes, and by size of the firm sponsoring the scheme, in terms of number of employees: 7.2 million active members are in occupational schemes in which the sponsoring firm employs more than 10,000 employees, illustrating that occupational pension schemes are typically arranged by large employers.

Table 5.2: Number of active members of occupational pension schemes in 2008, by size, sector and benefit structure (millions)

Size of unit	Private sector			Public DB	Total DB	Total
	DB	DC	Total			
10,000+	1.6	0.4	2.0	5.2	6.8	7.2
1,000-9,999	0.7	0.4	2.4	5.3	7.1	7.7
100-999	0.2	0.1	0.4	0.0	0.2	0.4
<100	0.0	0.1	0.1	0.0	0.0	0.1
Total	2.6	1.0	3.6	5.4	8.0	9.0

Source: OPSS (2009, Table 2.6)

Public sector workers are covered by a variety of occupational pension schemes which are implicitly or explicitly underwritten by the Government. Table 5.3 shows the number of active members in the major public sector pension schemes

Table 5.3: Major public sector pension schemes

Funding status	Sectors	Numbers of active members (millions). Source: Pensions Commission (2004)	Numbers of active members (millions). Source: Audit Commission (2010)
Unfunded	Civil Service, armed forces, police, fire	1.04	0.98
Notionally funded	NHS, teachers	2.02	2
Funded	Local government	1.5	1.65
Funded quasi-public sector	Universities	0.1	0.1
Total		4.66	4.73

Source: Pensions Commission (2004) Table 3.2; and Audit Commission (2010) Figure 1

All of the private sector schemes in Tables 5.1 and 5.2 are funded, although it is only the Local Government Pension Scheme in the public sector that is funded. If compulsory annuitisation of DC pension schemes is abolished, there is a real possibility that a large number of public service workers from both funded and unfunded schemes would also demand their pension as a lump sum and thereby dramatically bring forward payments from the Government. In the case of unfunded public sector schemes, effectively off-balance sheet public pension liabilities would be brought onto the balance sheet immediately, since the Government would have to issue additional bonds to make these pension payments.

A similar problem would also be felt by private sector pension funds which would be faced with raising additional funds to finance pension lump sums or would have to sell financial assets to make the cash payments.

Combining Tables 5.3 and 5.1 suggests that around 6.65 million employees are members of a funded pension scheme. Table 5.4, taken from UBS (2010), shows the estimated value of pension fund assets in self-administered DB and DC schemes, insurance company administered pension schemes, and also personal pension schemes for comparison at the end of 2009.[14] The reported values are market values and hence will fluctuate as the value of equity and bond markets fluctuate.

Table 5.4: Market value of total assets in UK pension funds at end 2009

Type of pension scheme	£ billions
Occupational self-administered DB	805
Occupational self-administered DC	270
Insurance company administered	245
Total occupational schemes	1,320
Personal pension schemes	305
Total all pension assets	1,625

Source: UBS Pension Fund Indicators (2010)

The Table shows that the total value of assets held by UK occupational pension schemes at the end of 2009 was £1,320 billion. If compulsory annuitisation is abolished, the 6.65 million active members of pension schemes would be able to access their share of these funds at retirement.

In a funded pension scheme, an individual and their employer make regular contributions and these compound at the fund's rate of return. At retirement, the accumulated funds are used to pay the pension of the members. Assume that annual contributions are £1, starting when the member is age 25 and continue for 40 years. The member retires at 65, is expected to live until age 85, and draws down the fund to zero by this age. We suppose that the annual return on pension fund assets is equal to the long-term government bond rate of 4.2 per cent.[15] Figure 5.1 shows the percentage of the total fund value that has accrued by each age between 25 and 85.

14 More detailed information on these fund values can be obtained from the ONS publication MQ5 (2010) on investments by pension funds, insurance companies and trusts.

15 Bank of England yield curves, available at http://www.bankofengland.co.uk/Statistics/yieldcurve/index.htm

Figure 5.1: Percent of pension fund total value credited to each annual cohort
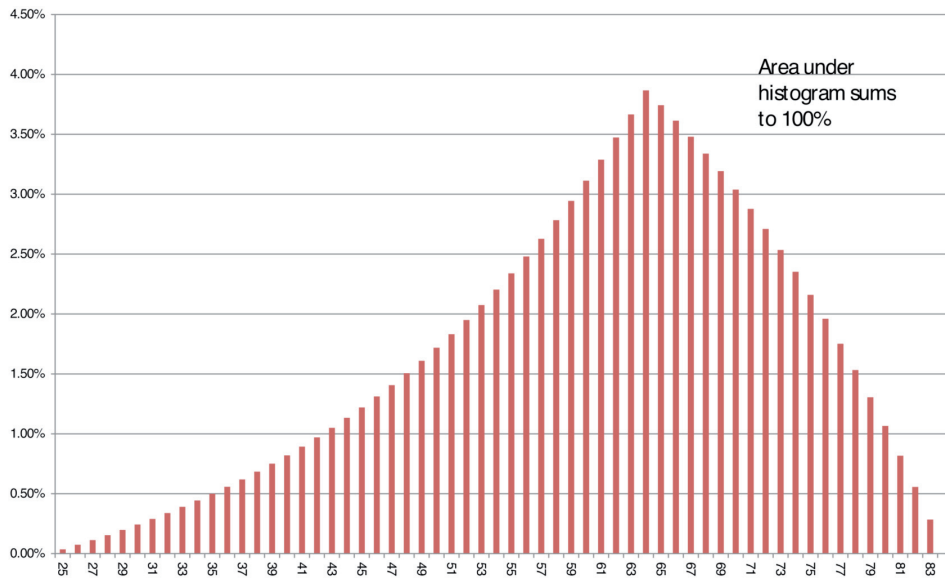
Source: Own calculations

Unsurprisingly, this percentage is maximised at age 65, which means that the cohort that is retiring can access 3.87 per cent of the total fund value. Applying these calculations to the self-administered pension funds in Table 5.3 suggests that the retiring cohort will be able to access £31 billion of DB and £10 billion of occupational DC accumulated pension funds each year. This provides our initial estimates of the amount of money that can be accessed under flexible drawdown (before taking into account the MIR) and if flexible drawdown is applied to occupational pensions. We should note that some of these DC pension assets are annuitised in the pension annuity market and have already been accounted for in Section 4.

In order to provide a more sophisticated computation of the impact of DB pensioners accessing flexible drawdown, while still allowing for a threshold above the MIR, we will follow the same approach taken in Section 3 and estimate implicit pension fund values based on current occupational pension income data. To obtain an estimate of the value of DB pension funds for the annual cohort of retiring pensioners, we again use the formula:

Value of fund = No. pensioners x DB pension income x Capitalisation factor

As in Section 4, to estimate this value, we need to know the number of persons retiring each year, their occupational pension income and an appropriate capitalisation factor. We discuss each component of this calculation in turn.

Number of pensioners

As a robustness check on our previous estimates, in addition to the Pensioners' Income Series, we will also use ONS population estimates, so that we have two sets of estimates for the number of new pensioners each year.

The population estimates give the numbers of males and females for each age cohort for the entire UK population. We take the number of males retiring from the number of male 65-year-olds and split this group into couples and singles, based on the population estimates by marital status. Again, we assume that 65-year-old males are married to 63-year-old females, and the percentage of single women retiring (at an assumed age of 60) is then computed from the data in the Pensioners' Income Series as 27.5 per cent of retiring units.

Table 5.5: Numbers of retiring persons per year: Two sets of estimates

Panel A: From ONS population estimates	Numbers	Numbers receiving occupational pension
In 2010, number of males aged 65 retiring	312,720	
Of which: Married couples (aged 65/63)	245,926	152,474
Single males (aged 65)	66,794	31,393
Single females (aged 60) (27.5% of total)	118,598	55,741
Total number of retiring units in 2010	431,318	

Panel B: From Pensioners' Income Series	Numbers	Numbers receiving occupational pension
Married couples	248,534	154,091
Single males	67,503	31,726
Single females	119,856	56,332
Total number of retiring units in 2010	435,892	

Sources: ONS Population Estimates (2009); ONS Mid-2008 Marital Status Estimates; DWP (2010) Pensioners' Income Series, and own calculations

The proportion of recently retired pensioner couples and individuals receiving an occupational pension are given in the Pensioners' Income Series as 62 percent and 47 percent, respectively, and these definitions of occupational pension income includes both DB and DC pension income.

Pensioners' incomes

The Pensioners' Income Series gives estimates of the distribution of DB and occupational DC pension income. The mean for all pensioner units is £168 per week (£8,736 p.a.), while, for the recently retired, it is £206 per week (£10,715 p.a.). The distribution of occupational pension income, for those pensioners in receipt of it, is given in Figure 5.2.

Figure 5.2 Distribution of annual income (£p.a.) from occupational pensions in 2008-09 of "recently retired"
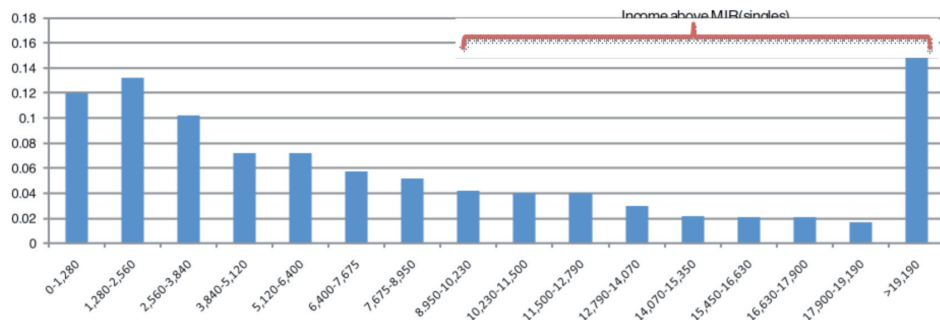
Source: DWP (2010) Pensioners' Income Series

The Pensioners' Income Series further breaks down the income received from occupational pension schemes, by recent retirees, by couples and singles, and by gender. In Table 5.6, we report the mean and median amounts of occupational pensions received by type of pensioner household.

Table 5.6: Average amount of occupational pension income of recently retired for those in receipt in 2008-09

	Mean occupational pension (£)		Median occupational pension (£)	
	Per week	Per year	Per week	Per year
Married couples	255	13,260	158	8,216
Single males	171	8,907	93	4,833
Single females	114	5,938	62	3,222

Source: Pensioners' Income Series, Table 3.7, and gender split from Table 2.6

We combine the distribution of occupational pension income from Figure 5.2 with the average amounts received by each household type to obtain a distribution of each occupational pension by household type, under the assumption that the entire distribution is shifted up or down to match the average pension for that type.

Capitalisation factor

We use the capitalisation factors in Table 4.3 to obtain the value of DB pensions.

Pension fund values for retiring cohort

We combine the information in Tables 5.5, 5.6 and 4.3 to produce estimates of the value of the occupational pension fund that could be accessed by the retiring cohort. Table 5.7 suggests that depending on the assumptions made about survival probabilities and the type of pension received, the estimated total value of pension funds imputed to the retiring cohort varies between £40.3 billion and £66.1 billion.

Table 5.7: Estimated values of occupational pension funds of annual retiring cohorts before applying the MIR

	Numbers receiving occupational pension	Mean pension (£ per annum)	Total present value of pension funds (£ million)	
Panel A: From ONS population estimates				
Capitalisation factor assumption			Level/Short	Real/Long
Married couples	152,474	13,260	31,136	50,747
Single males	31,393	8,907	3,803	5,900
Single females	55,741	5,938	5,395	8,970
Total value			40,334	65,618
Value of occupational DB			24,604	40,027
Panel B: From Pensioners' Income series				
Married couples	154,091	13,260	31,466	51,286
Single males	31,726	8,907	3,843	5,963
Single females	56,332	5,938	5,453	9,065
Total value			40,762	66,314
Value of occupational DB			24,865	40,451

Source: Own calculations

These estimates in the row labelled "Total value" represent the value of funds attributable to the annual retiring cohort across all occupational pension assets, estimated as £1,320 billion in Table 5.4. As we have already mentioned, some of these DC pension funds are annuitised in the pension annuity market, and we need to be careful of double counting these estimates. The numbers in Table 5.4 suggest DB schemes represents 61% of all occupational pension fund assets, and so in Table 5.7, we estimate the value of occupational DB pension funds attributable to the retiring cohort as between £24.6 billion and £40.4 billion.

We now repeat these calculations to estimate the value of pension funds above that necessary to sustain an MIR, which we estimate at £14,100 pa for a single person, and £20,000 pa for a couple. Table 5.8 shows the estimated value of occupational DB pension funds that could potentially be accessed at retirement above the MIR.

Table 5.8: Estimated values of occupational DB pension funds of annual retiring cohorts with pensions above the MIR

	Numbers receiving occupational pension above MIR	Mean pension above MIR (£ per annum)	Total present value of pension funds (£ million)	
Panel A: From ONS population estimates				
Capitalisation factor assumption			Level/Short	Real/Long
Married couples	59,922	14,892	13,742	22,398
Single males	11,019	10,212	1,530	2,374
Single females	12,207	7,344	1,461	2,429
Total value			16,734	27,202
Value of occupational DB			10,208	16,593
Panel B: From Pensioners' Income Series				
Married couples	60,558	14,892	13,888	22,636
Single males	11,136	10,212	1,547	2,400
Single females	12,337	7,344	1,477	2,455
Total value			16,911	27,490
Value of occupational DB			10,316	16,769

Source: Own calculations

These calculations assume that those individuals above the MIR still take an occupational DB pension up to the MIR. In the subsequent calculations, we will use two sets of figures from Table 5.8 to assess the impact of retiring pensioners accessing the values of their pension funds above the MIR. At the lower end, under the assumption of level future pensions and with life expectancy given by the short cohort projections, we estimate the value DB pension funds that can be accessed at £10.2 billion. At the upper end, under the assumption of real index-linked pensions and assuming the long cohort projections for life expectancy, the value of DB pension funds that can be accessed is estimated at £16.8 billion.

Using the numbers of active members in different types of pension schemes from Tables 5.1, 5.2 and 5.3, we can allocate the estimated values in Table 5.8 across these schemes.

Table 5.9: Estimated size of DB occupational pension fund liabilities of the retiring cohort with pensions above the MIR, across types of scheme

Type of Scheme	No. active members (millions)	Percentage of Total	Value of pension liabilities (level/short: £ million)	Value of pension liabilities (real/long: £ million)
Private funded DB	2.6	33%	3,317	5,450
Public funded (LGPS)	1.65	21%	2,105	3,459
Public unfunded	3.8	47%	4,785	7,861
Total	8	100%	10,208	16,769

Source: Own calculations.
Note we do not include private sector occupational DC schemes in this table.

The figures in the final two columns of Table 5.9 show how the pension liabilities estimated in Table 5.8 are divided across the different types of DB pension scheme: private sector DB, public sector funded and public sector unfunded. We will now consider the impact of these fund value calculations on: private sector funded schemes, public sector funded schemes, and public sector unfunded schemes.

Impact of change in compulsory annuitisation on private sector funded schemes

We estimate that between £3.3 billion and £5.5 billion of pension liabilities in private sector DB schemes could be accessed by the annual retiring cohort. Since October 2008, the value of transfers from defined benefit schemes have to be calculated in accordance with the Occupational Pension Schemes (Transfer Values) (Amendment) Regulations 2008. The cash equivalent transfer value (CETV) should broadly equal what it would cost a scheme to provide a leaving member's benefits (both accrued and discretionary) plus the value of any options the member has. The trustees can choose whether or not to include discretionary benefits. Options might include the right to commute part of the pension for a cash lump sum, the right to a higher spouse's benefit in exchange for a lower member's benefit, and the right to draw the pension before the scheme's normal retirement age (NRA). The scheme actuary, who will calculate the CETV, is entitled to take into account the likelihood of these options being exercised.

The Regulations require certain economic, financial and demographic assumptions to be made in order to calculate the CETV. These will be based on the actual scheme membership, but can be adjusted in the light of external information. The scheme's investment strategy will also influence the size of the CETV. Other things equal, a higher equity weighting in the scheme will lower the CETV, since a smaller initial investment is needed to achieve a target fund size when investment returns are assumed to be higher (as they are with equities in comparison with bonds, for example). Finally, the trustees can reduce the CETV in proportion to the size of any scheme deficit. However, they must do this on the basis of an Insufficiency Report prepared by the scheme actuary.

In order to assess the impact of allowing members of private DB schemes to access the value of their pension fund at retirement, we will use information on funding from the Purple Book, published jointly by the Pension Protection Fund and The Pensions Regulator. It is estimated that there is a universe of 7,400 PPF-eligible DB funded schemes in the private sector. Table 5.10 provides estimates of the membership of these schemes, and these membership numbers are comparable with the private sector numbers in Tables 5.1 and 5.2. The figure of 2.6 million active members in private sector occupational DB schemes in Table 5.2 is consistent with the 2.57 million in Table 5.11. The figure in Table 5.1 showing occupational pensions membership in all schemes is slightly higher than the figure in Table 5.11 and this is presumably due to members who are in occupational DC schemes and smaller DB schemes outside of the PPF-eligible universe.

Table 5.10: Membership of PPF-eligible DB universe (7,400 private sector schemes at 31 March 2009)

Type of member	Number of members
Active members	2.57
Pensioners	5.33
Deferred members	4.47
Total	12.37

Source: PPF/The Pensions Regulator (2009) Purple Book, Table 3.5

The Purple Book also includes data on the funding status of these DB schemes, and these data are updated on a monthly basis. Table 5.11 shows the funding status of the PPF-eligible DB universe at 10 June 2010. The funding status shows the extent to which a pension fund's assets are greater (surplus) or less (deficit) than the promised DB pension liabilities. There were 2,233 schemes in surplus (34 per cent) and 4,420 in deficit (66 per cent) at 10 June 2010. The total deficit of these funds in deficit was £81 billion.

Table 5.11: PPF-eligible DB funding statistics at 10 June 2010

	Number of schemes	Percent of total	Assets (£billion)	Liabilities (£billion)	Balance (£billion)	Funding ratio (%)
Aggregate	6,643		901.5	923.3	-21.8	-2.39%
Deficit schemes	4,420	66%	469.2	550.2	-81.0	-15.89%
Surplus schemes	2,233	34%	432.3	373.1	59.2	14.69%

Where Funding ratio=Balance/((Assets+Liabilities)/2)
Source: PPF 7800 Website data

For the 34 per cent of schemes in surplus, we assume they will need to sell assets when retiring pensioners access their funds. Our estimates from Table 5.9, suggest that between £1.1 billion and £1.8 billion worth of funded DB assets will be liquidated in this way (calculated as 34 per cent of £3.3 billion or £5.5 billion, respectively), representing between 0.3 per cent and 0.5 per cent of the private sector's DB pension fund liabilities for those schemes in surplus. For those schemes in deficit, calculation of the CETV suggests that the pensioner withdrawing funds will be expected to bear part of the deficit. So that although the present value of the retiring cohort's pension liability entitlements are between £2.2 billion and £3.6 billion (calculated as 66 per cent of £3.3 billion or £5.5 billion, respectively), we predict that running down the assets will result in pension fund asset sales of between £1.9 billion and £3 billion (calculated as 84 per cent of £2.2 billion or £3.6 billion, respectively, given the funding ratio of -16 per cent for deficit funds).

Impact of change in compulsory annuitisation on public sector funded schemes
The major funded public sector pension scheme is, as mentioned above, the Local Government Pension Scheme (LGPS). The Audit Commission (2010) recently analysed the affordability, fairness and financial health of this scheme for England. Figure 2 in that report suggests that as at end-March 2010, assets cover about three-quarters of the pension liabilities in LGPS. Table 5.9 indicates that between £2.1 billion and £3.5 billion of pension liabilities in the public sector funded DB schemes could be accessed by the annual retiring cohort. In the case of the LGPS, in part this could be met by running down assets, but since the scheme is only 75 per cent funded, then the calculation of the CETV would suggest that the retiring scheme members would have to bear part of this deficit. We predict that the retiring cohort would be able to access between £1.6 billion and £2.6 billion of the claims on their pension fund which would be met by running down the LGPS's scheme assets.

Impact of change in compulsory annuitisation on public sector unfunded schemes
Table 5.9 indicates that there are around 3.8 million active members of unfunded public sector DB pension schemes, and this represents around 42% of the funds that could be accessed at retirement by the retiring cohort, and would add between £4.8 billion and £7.9 billion to the public sector deficit on an annual basis, if these implicit fund values were realised.

Summary

We suggest that the proposal to abolish the annuitisation requirement for DC pension schemes will have an effect on the DB pensions market, either through DB members demanding similar rights under their scheme or through pension transfers. We suggest that if the same rules on annuitisation above a Minimum Income Requirement in the DC market are applied to the DB market, between £10.2 billion and £16.7 billion of DB pension fund assets may be accessed each year by the retiring cohort. We suggest that if the Government does not intend its proposals on the relaxation of annuity rules for DC pensions to apply to DB pensions, it will need to legislate to prevent this.

6. Impact of the proposal on long-term government bond markets

According to the DMO (2004: ¶ 6), the UK Government's debt management policy objective is:

> *"to minimize over the long term, the costs of meeting the Government's financing needs, taking into account risk, whilst ensuring that debt management policy is consistent with the aims of monetary policy."*

It achieves this objective and arrives at its issuance plans each year by taking into account: (i) the Government appetite for risk (both nominal and real in each year); (ii) cash management requirement for Treasury bills and other short term debt instruments; (iii) the shape of the yield curves (nominal and real) and the expected effect of issuance policy; and (iv) investors' demand for gilts. Figure 6.1 shows the size of the gilts market over time, and the split between conventional and index-linked bonds: index-linked bonds have continued to increase as a proportion of gilts issued since they were first issued in 1981. The total outstanding size of the gilts market in 2010 was approaching one-trillion sterling.

Figure 6.1: Size of the outstanding UK gilts market by bond-type
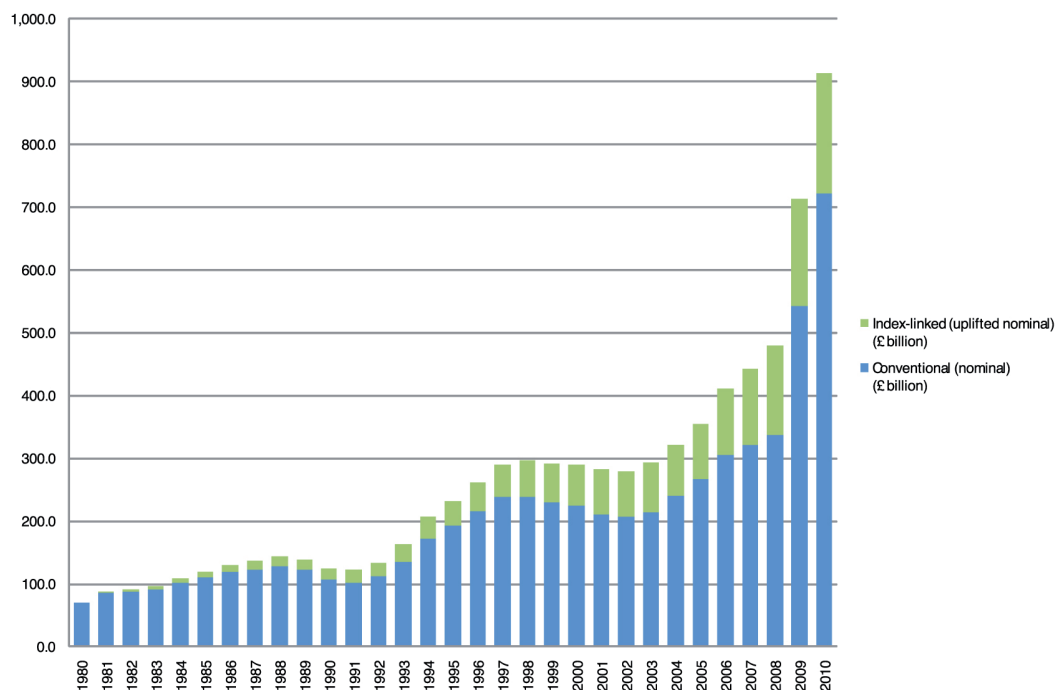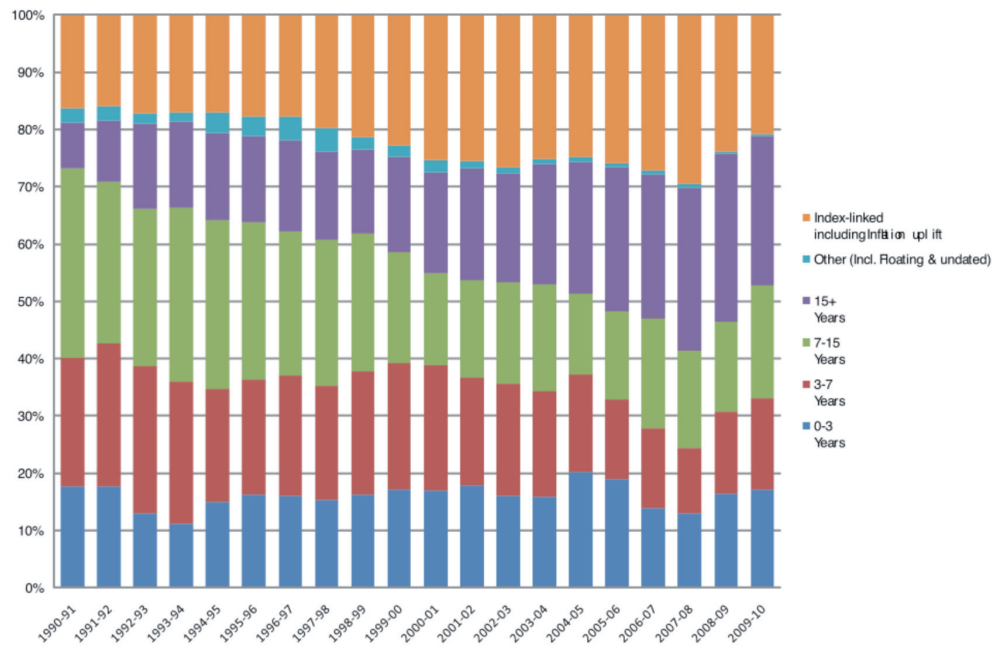

Source: DMO

Following calls from the pensions industry during 2004 for more and longer-dated debt, the DMO (2004) consulted with participants in the pensions industry. The consultation paper noted (¶ 11) that according to ONS data, pension funds and insurance companies were already the largest group of holders of gilts (64%) and their demand (¶ 8) reflected the UK Government's issuance of longer maturity bonds relative to other major governments.

The 2004 consultation paper recognised that the demand from pension funds for long-term bonds would increase in the future because of demographic trends, closer matching of assets and liabilities (i.e., switching from equities to bonds in pension fund portfolios) and "the likelihood that a shift from defined benefit to defined contribution schemes will increase demand for annuities" (¶ 11).

As a consequence of the consultation, a new 50-year maturity conventional gilt was issued in May 2005 and a new 40-year conventional gilt followed in May 2006. The first 50-year index-linked gilt was issued in September 2005.
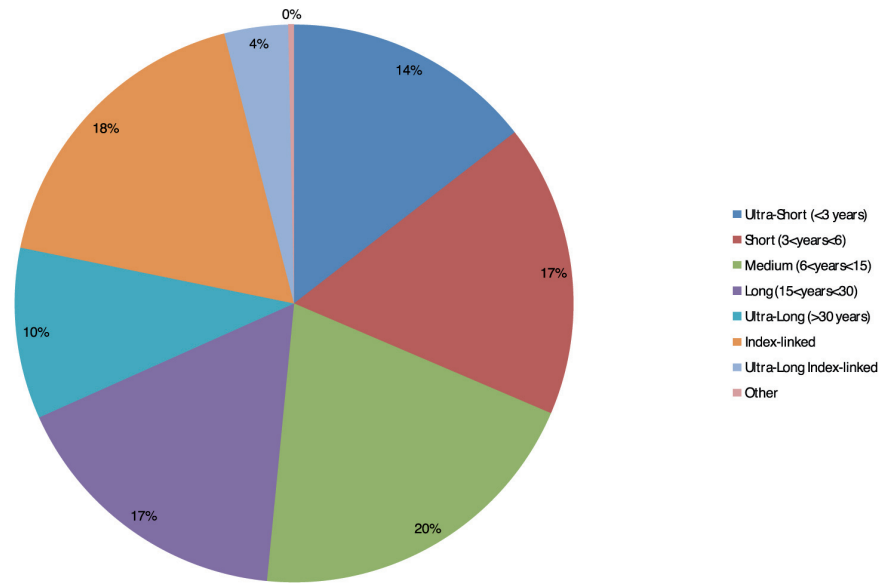
Figure 6.2: UK gilts market composition over time

Source: DMO

Figure 6.2 shows the changing composition of the Government's gilt issuance with the increasing emphasis on longer-term gilts: the percentage of index-linked and conventional bonds above 15 years' maturity has increased from less than 30 per cent in 1990-91 to nearly 50 per cent in 2009-10. Figure 6.3 shows a more detailed breakdown of the composition of gilts in 2010. This figure again emphasises the increasing importance of ultra-long gilts (both conventional and index linked) which comprise 15 per cent of the total amount of gilts outstanding of £963 billion.
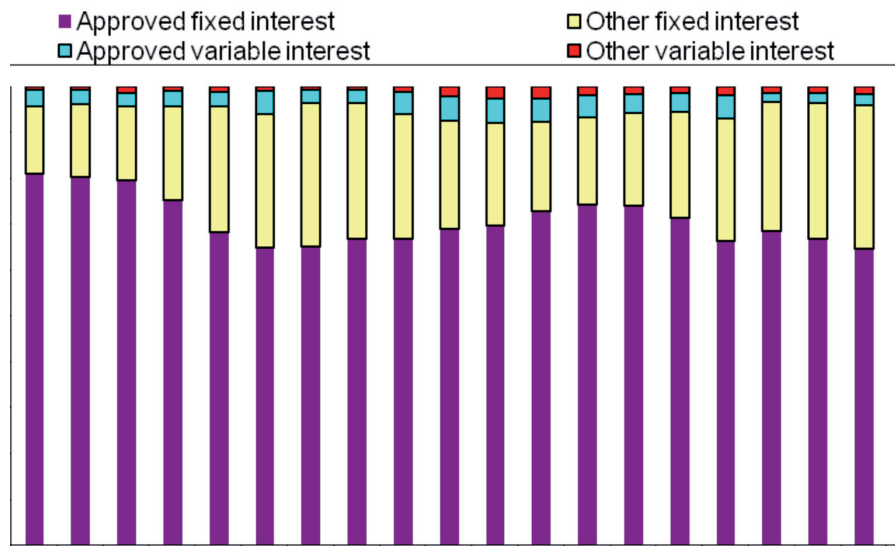
Figure 6.3: Composition of gilts in issue in 2010 (£ million nominal)

Legend:
- Ultra-Short (<3 years)
- Short (3<years<6)
- Medium (6<years<15)
- Long (15<years<30)
- Ultra-Long (>30 years)
- Index-linked
- Ultra-Long Index-linked
- Other

Source: DMO

Annuity providers use a combination of existing long-, medium- and short-term government bonds, as well as other financial instruments including swaps and other derivatives, to immunize their portfolio of annuity liabilities against interest-rate risk.

Figure 6.4: Type of debt instruments held by insurance companies

Legend:
- Approved fixed interest
- Other fixed interest
- Approved variable interest
- Other variable interest

Source: FSA Insurance Returns

Figure 6.3 shows that the mixture of government bonds (approved) and corporate bonds (other) held by insurance companies has shifted over time: in 1985, life insurance companies held five times as many government bonds by value as corporate bonds; by 2005 this ratio was almost unity. The effect of

abolishing compulsory annuitisation would be that on an annual basis life-insurance companies and pension funds would reduce their demand for long-term gilts, because of the contraction in the pensions annuity market discussed in Section 4 and the possible effects on the DB pensions market discussed in Section 5.

Life insurance companies and pension funds would sell off their holdings of long-term gilts, depressing gilt prices at the longer end and hence increasing yields. From our estimates in Table 4.5, we predicted that the existing annuity market would shrink by between £1 billion and £2.2 billion. The information in Figure 6.4 suggests that half of these funds are held in approved fixed-interest securities, so that insurance companies would sell off between £0.5 billion and £1 billion of gilts annually. This represents around 0.5% of the outstanding stock of ultra-long conventional and index-linked gilts.

Figure 6.5 shows the asset allocation of DB pension funds over almost fifty years, and we can see that by 2009, 31% of pension fund assets were held in UK fixed-interest securities (government and corporate bonds) and index-linked securities.

Figure 6.5: Asset allocation of average pension fund, 1962-2009
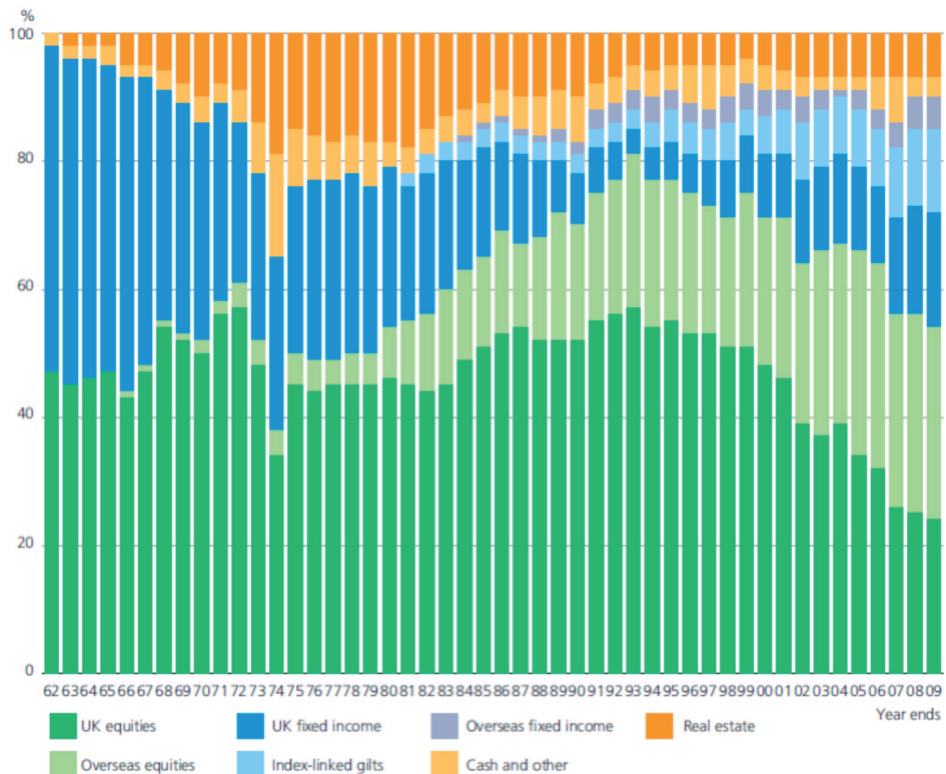
Source: UBS Pension Fund Indicators (2010)

From our estimates in Table 5.8, we predict that if the abolition of the annuitisation requirement were applied to occupational DB plans, then between £10.2 billion and £16.7 billion could be accessed annually by the retiring cohort if they wanted to access flexible drawdown above the MIR. Using the information in Figure 6.5, this implies that pension funds will annually liquidate between £3.2 billion and £5.2 billion of long-term government debt.

Individual pensioners would be unlikely to buy these long-term gilts, since the flexibility that these pensioners desire would probably be satisfied by a move into domestic and international equities.

The increase in yields at the long end in response to this sell off may also have an effect on yields at the shorter end, making it more expensive for the Government to issue debt at all maturities.

Summary

We argue that the proposal to abolish the annuitisation requirement will have an effect on the government bond market. If the retiring cohort of pensioners access their DC lump sums, we predict insurance companies will no longer need to hold government bonds in the same quantity to back their annuity products and would become net sellers of between £0.5 billion and £1.2 billion of gilts annually. Similarly, if DB pensioners also access the lump sum equivalent of their pensions at retirement, DB pension funds will liquidate between £3.2 billion and £5.2 billion of long-term government debt annually. This liquidation of government debt will occur at a time when the Government is attempting to fund a huge budget deficit by issuing bonds.

7. The optimal decumulation investment strategy and the cognitive problems that elderly people can face when dealing with investments

The consultation paper (¶ 2.14) suggests that capped drawdown will be available to all pensioners without any need to satisfy a MIR. However, in practice this is unlikely to be a suitable choice for most people. As FSA rules recognise, drawdown products are risky, and are only suitable for relatively wealthy individuals.[16] A number of studies have shown that the optimal decumulation investment strategy (i.e., the strategy to optimally run down in retirement the assets that have been accumulated during the working life) is highly complex (e.g., Blake et al. (2003), Blake (2003), Gerrard et al. (2004), Cairns et al. (2006) and Blake et al. (2009)). It will depend on factors such as anticipated investment returns, attitude to risk, life expectancy, health status and the desire to make bequests. The optimal strategy might not involve the immediate purchase of an annuity, especially if risk aversion is low or the desire to make a bequest is high. In this case, the optimal strategy is income drawdown. However, there will come a time when the implicit return on an annuity exceeds the return on financial investments such as equities[17] and then it becomes optimal to annuitise remaining wealth. This typically occurs around the age of 80 for males. Another optimal strategy is to annuitise gradually. Although the studies cited here consider optimal investment strategies at high ages, they do not take into account the cognitive problems that elderly people can face when dealing with investments.

There have been a number of examples of mis-selling in the financial services industry in recent times. Two important examples have involved mortgage endowments and pensions mis-selling (Financial Services Authority, 2000, 2002).[18] The scale of the pensions mis-selling was enormous: "Offers (in relation to pensions mis-selling between 1988-1994) have been made to over one million consumers amounting to nearly £9 billion" (Financial Services Authority, 2002). The FSA took disciplinary action against 345 firms which involved fines totalling £9,507,250. The pensions mis-selling did not end in 1994. As late as 2008, the FSA was forced to announce "The FSA is taking action to improve the quality of advice given to customers to switch into a personal pension or self-invested personal pension (SIPP), following a review which found variable standards across a sample of 30 firms" (Financial Services Authority press release, 5 December 2008). This followed an FSA review which found that 16 per cent of 500 transfers into a new SIPP were based on poor advice.

A key point about the above mis-selling cases is that the people involved were still in work and many of them were relatively young. They could, therefore, have been expected to be relatively financially aware of the implications of the

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16 The FSA MoneyMadeClear Guidelines on Income Withdrawal (January 2009) and the latest FSA guide to pension annuities and pension fund withdrawal emphasises that "Income withdrawal plans are complex and not suitable for everyone, for example if you have a small pension fund and no other assets or income to fall back on" (April, 2010). Earlier versions of the FSA guides to pension annuities recommended that "Income withdrawal involves extra costs and extra investment risk compared with buying an annuity straight away. For this reason, it is usually suitable only if you have a pension fund of over £100,000 (after taking any lump sum) or you have other assets and sources of income to fall back on" (January, 2004).

17 The technical condition is when the mortality drag exceeds the equity premium (Milevsky (1998)). The mortality drag is the proportion of people of a given age who die during the year.

18 The personal pensions mis-selling scandal took place between 29 April 1988 and 30 June 1994. Individuals who would have been financially better off at retirement in their employer's pension scheme were advised to leave their employer's scheme and transfer their pension benefits to a personal pension plan instead.

decisions they were being persuaded to take. But clearly this was not the case. An FSA (2006) survey of financial capability found that in a financial literacy quiz, the under-40's performed worse than their elders, but that the over-70s performed worst of all age groups. The problem is compounded when it involves elderly people who are unable to return to work in order to rectify the financial consequences of any mistakes they make.

A recent US study has examined the effect that cognitive impairment has on financial decision making. The susceptibility to dementia doubles every five years after age 60. Agarwal et al. (2009) discovered that around 50 per cent of people in their 80s experienced significant cognitive impairment (including dementia) and this prevented them from making sensible financial decisions.

Older adults also show a marked decline in "numeracy", the quantitative skill necessary to understand the meaning of numerical information such as percentages and probabilities. This meant that older people had considerable difficulty with comprehending even simple measures of risk. For example, when invited to say which of the following involved the greatest risk of getting a disease, 1 in 10, 1 in 100 or 1 in 1000, 29 per cent of a sample of 65-94 year-olds gave an incorrect answer (Peters, 2008).

As an illustration of the confusion that people can face when making annuity decisions, consider the US framing study of Brown et al. (2008). The study involved 1300 people over the age of 50 who were asked to select between one of two choices designed to have the same actuarial value:

1. an annuity paying $650 a month for life
2. a savings account containing $100,000 and paying 4 per cent interest.

Half the sample of participants in the study were offered the two options in a "consumption" frame where the annuity was explained as a vehicle for providing a secure income of $650 a month for life. Around 70 per cent of this subsample chose the annuity. The other half were offered the two choices in an "investment" frame where the annuity was explained as an investment generating a return of $650 a month. Just 21 per cent of the second subsample chose the annuity. This is because the annuity now appeared to be a risky investment since it would be lost if the individual died early: the option of having the $100,000 "invested" in the savings account was now interpreted as a much safer investment even though the savings account will not hedge an individual's longevity risk.

A key problem with the Government's proposal is that it changes the frame through which a pension scheme will be viewed and assessed. The main purpose of a pension scheme is to provide, for however long the pensioner lives, consumption in retirement sufficient to avoid a dramatic fall in living standards compared with when the pensioner was in work. The appropriate frame for viewing a pension scheme is therefore the "consumption" frame. After the implementation of the Government's proposal, a pension scheme will be viewed through an "investment" frame which will make the purchase of an annuity not only appear risky, but also very unfair to the pensioner's family who will now be denied their "right" to inherit the pension fund when the pensioner dies.

This is very well illustrated in a recent newspaper[19] article entitled "Can my wife inherit my pension if I die?" The newspaper interviewed a 57-year-old self-invested personal pension scheme member who is "delighted that he will no longer be forced to buy an annuity when he turns 75. … He plans to take out an income drawdown plan when he retires at 66, as he dislikes annuities. He says: 'I hate the idea of my money going to an insurance company instead of my kids. I am opting for income drawdown because I want the flexibility and control of my money…. The new rules mean we can pass our remaining pension straight to our children, even if they have to pay a 55 per cent tax charge.' " This illustrates that merely re-framing the presentation of the annuitisation decision can change behaviour.

Summary

Optimal decumulation investment strategies can be highly complex and need to take into account anticipated investment returns, attitude to risk, life expectancy, health status and the desire to make bequests. Further, the optimal strategies are not static and involve complex choices about, say, the optimal timing of annuity purchases. However, these strategies typically fail to take into account the cognitive problems that elderly people can face when dealing with investments. The proposed change to the pensions annuity market represents a shift from a "consumption frame" to an "investment frame". We report that, whether as a result of cognitive impairment or an inappropriate framing of choices, many older adults will find it difficult to make sensible decisions about how to invest and spend their retirement savings. The Government could soon find itself embroiled in another mis-selling scandal and this time involving vulnerable elderly people.

19 By James Coney. http://www.dailymail.co.uk/money/article-1296335/Pension-reforms-Can-wife-inherit-pension-I-die.html. Accessed 20 July 2010.

8. Inheritance and savings decisions

Our discussion so far has concentrated on the consequences of removing the compulsory annuitisation requirement for pension wealth and for means-tested benefits. In this section, we consider two other questions: first, will wealth which is not annuitised be used for bequests; second, how might the change in policy affect the savings decisions of people who are not close to retirement? One of the reasons for the proposal is to encourage people to save more throughout their lifetime. For example, the "Introduction" to the consultation document states that "the current inflexibility in the pensions tax rules acts as a barrier to saving for some because people have very little choice in securing a retirement income and finding a solution that is best for them". In our discussion, we take account of the alternative tax-efficient savings vehicle (an ISA, with an annual limit of £10,200) which is more flexible than a pension as it is possible to access the funds before retirement.

We shall see that the benefits of the new policy depend largely on whether someone is a higher-rate or basic-rate taxpayer while in employment. In both cases, there is already an incentive to save in a pension fund because tax relief on contributions tends to be higher than the tax paid on income received from a pension.[20] In this section, we concentrate on the additional incentives to save other than those that exist already.

The consultation document states that "the Government does not intend pensions to become a vehicle for the accumulation of capital sums for the purposes of inheritance. The Government will therefore ensure that the tax rate on unused funds remaining on death does not leave open incentives for pension saving to be used to reduce inheritance tax liabilities. The Government will monitor this closely and will take further action if there is evidence of such activity" (¶2.2).

Under current rules, there are penal tax rates (up to 82 per cent) on wealth which has not been annuitised by the age of 75 (i.e, for pensioners who choose the option of alternatively secured pension or ASP).[21] The proposed policy is that any unused funds payable on the death of a pensioner will be taxed at 55 per cent. A recovery charge of 55 per cent means that the Government approximately re-claims the tax privileges given to a higher-rate tax payer in the accumulation of the pension fund. This is because 25 per cent of the fund can be taken as a tax-free lump sum: the 41 per cent tax relief given to the entire pension fund must now be reclaimed from the remaining 75 per cent and $0.41/0.75 = 54.7$ per cent.[22]

Consider a higher-rate taxpayer who wishes to invest money which is then left as a bequest. The two simplest savings vehicles are the pension fund and an ISA.

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20 In 2009-10, there were 3.1 million higher-rate taxpayers of whom 1.9 million had incomes less than £50,000 (Inland Revenue Statistics, 2010). Anyone with an income of £50,000 in employment is likely to have a pension of less than £43,875 and thus have a lower marginal tax rate on retirement, although these thresholds will change considerably over time. Basic-rate tax payers receive tax relief on NI contributions (11 per cent), but do not pay NI contributions on pension income.

21 An apparent anomaly is that if a pensioner dies before the age of 75 without accessing the pension fund at all, then the entire fund is free of both a recovery charge or inheritance tax: the consultation suggests that this policy will continue. Relatively poor pensioners in bad health who face steep withdrawal rates of means-tested benefits might then have an incentive not to take a pension but to pass on their fund. But the sums of money would be very small. Very rich pensioners with sufficient funds that they did not need to access their pension wealth would be a different matter, although such people are more likely to live beyond 75.

22 The situation is complicated by some higher-rate taxpayers having a 50 per cent tax band. The 41 per cent assumes 40 per cent income tax and 1 per cent National Insurance contributions.

Assuming the same pre-tax rate of return can be earned on both, the pension fund and the ISA are now perfect substitutes, since the investment returns are not taxed in either case and the additional tax relief on contributions to the pension fund are matched by the recovery charge. However, the pension fund has three additional advantages: first, it is accompanied by the 25 per cent tax-free lump sum; second, it is not liable to inheritance tax; third, the annual limit on the ISA is only £10,200. While not all higher-rate income tax payers will be liable for inheritance tax, many will be and the new policy is likely to be faced with this problem.

The consultation document suggests that this issue will be closely monitored, so that further action can be taken.[23] It is difficult to see how this will be monitored, except by analysing the sums of money which escape taxation in this way. Since this information will only be available when people die, which will be some considerable time in the future, an expectation to this entitlement will have accumulated and it may prove politically difficult to reverse.

The situation is different for basic-rate taxpayers. Most basic rate taxpayers will also be paying NI contributions of 11 per cent, so the effective rate of tax relief on pension contributions for these people will be 31 per cent. This suggests that the fairer recovery charge for such people should be $0.31/0.75 = 41$ per cent, so a recovery charge of 55 per cent will be a penalty rate for them.

Table 8.1: Average post-tax cumulative return on pension wealth left as a bequest for a basic-rate taxpayer

Number of years money is invested	Personal pension	ISA account	Simple investment account
5	3.6	7	5.6
10	5.3	7	5.6
15	5.9	7	5.6
20	6.1	7	5.6
25	6.3	7	5.6
30	6.4	7	5.6
35	6.5	7	5.6
40	6.6	7	5.6

Source: Own calculations

Table 8.1 shows the effect of the recovery charge on any pension fund which remains on the death of a pensioner and which is passed on as a bequest. In all cases, we assume that there is no inheritance tax and that the investment earns 7 per cent gross per year. Money invested in an ISA receives 7 per cent and that outside an ISA is taxed at 20 per cent and has a net return of 5.6 per cent. Money in a personal pension receives tax relief of 31 per cent and pays a recovery charge of 55 per cent. Since basic-rate taxpayers are unlikely to exhaust their ISA limit of £10,200 per year, then it can be seen that the recovery charge is sufficiently high that there would be no incentive to try to use the pension fund for inheritance purposes relative to the ISA.[24]

23 The wording used in the consultation is almost identical to that of the previous Government's Paymaster General, Dawn Primarolo, (Hansard 21 Mar 2005 : Column 40WS) with reference to alternatively secured pension being used as a tax avoidance measure. That policy was reversed about a year later.

24 With short time horizons, using a pension scheme to avoid inheritance tax would be less efficient than a non-tax advantaged investment account.

A consequence of this is that the policy might appear to benefit higher-rate taxpayers considerably more than basic-rate taxpayers. There are a considerable number of basic-rate taxpayers whose income is sufficiently high that not all of their pensions savings will be needed to meet the MIR.[25] These people may feel it to be unfair that they are penalised for bequeathing their additional pension wealth to heirs when higher-rate tax payers appear not to be.

Summary

Allowing pensioners to avoid annuitisation will make it possible for pension fund wealth to be used to escape inheritance tax. The consultation proposes a 55 per cent recovery charge. Since this merely cancels the tax relief on pension contributions of a higher rate taxpayer, such a charge may be insufficient to prevent higher-rate tax payers using pension wealth for inheritance tax planning which may result in a loss of tax revenues. However, the 55 per cent recovery charge would be penal for basic rate taxpayers. Differential treatment in this way may be perceived as unfair and result in political pressure for further changes.

25 There are currently 26.7 million basic-rate tax payers with income above £30,000, although many of these are not in employment.

9. Policy recommendations

In this section we explicitly respond to the consultation questions which are listed in summary form on page 21 of the consultation document. The consultation requested views on the following points below. As our report makes clear, however, some of the most important consequences of the policy are not considered by these questions.

A.1 *The level of an appropriate annual drawdown limit for capped drawdown.*

Since the objective must be to avoid running out of pension assets before death, the annual drawdown limit should equal the annuitisation value of residual pension wealth (Blake et al. (2003)). The amount will rise from one year to the next if the equity premium exceeds that year's survival credit or mortality drag and fall otherwise.

A.2 *Its intended approach to reforming the pensions tax framework, in line with its commitment to end the effective requirement to purchase an annuity at age 75.*

See analysis in Section 8 above.

A.3 *What income should be considered 'secure' for the purposes of the MIR and whether proposals for the life annuity income that can be considered for the MIR are practical and appropriate.*

The consultation document proposes that the MIR should be indexed by LPI. We do not view this as entirely appropriate since annuity income will grow more slowly than limits for means-tested benefits and benefit entitlement will inevitably grow over time. However, without considerable financial innovation, it is impossible to provide alternative annuity products which would resolve this issue.

It is appropriate that employment income should not be counted as secure income to meet the MIR because pensioners' earned income will only be significant early in retirement. We believe that it would be difficult to frame appropriate rules for the MIR that allowed pensioners to access their pension wealth while continuing to work.

A.4 *What an appropriate level for the MIR should be and how the MIR should be adjusted for different ages.*

The immediate need for any MIR is that it is set at a high level to minimise entitlement to Pension and Guarantee Credits. Using two different methods of projecting wages and inflation, we calculate that the MIR for a 65-year-old individual should be £14,100 (including the BSP) and for a couple (male aged 65, female aged 63) should be £20,000 (including BSP) in 2010 and then grow in line with the LPI. If a pension unit secures the MIR at a later age then the MIR applying should be the MIR in force for the year in which income is secured.

Tables would have to be produced showing the MIR appropriate for each age

in a given year. For reasons of space, we have not reported calculations of the appropriate MIR for someone aged other than 65 who annuitises in 2010. However, to adequately protect the public purse, any MIR also needs to take account of entitlement to other means-tested benefits and to people's actual expenditure requirements throughout retirement (both in absolute and relative terms) and, in particular, the impact of declining health on expenditure needs.

A.5 *Whether a different MIR should be set for individuals and couples.*

We suggest that the MIR should be different for individuals and for couples. We suggest that the MIR for a couple should be in the form of a life annuity with a reversion to the survivor. The level should commence at £20,000 (including the BSP) in 2010 for a 65-year old man with a wife aged 63, with a reversion to an income for the survivor of £14,100 in 2010, both figures updated in line with the LPI.

It is a moot point whether there should be one table of MIR values for couples based just on the age of the man or whether it should be based on the ages of both partners. The former has the merit of simplicity but is based on a model of family formation which is likely to be increasingly outdated. It may prove necessary to produce multiple sets of tables, including tables for civil partnerships where both partners are of the same gender.

A.6 *How often the MIR level should be reviewed.*

The current approach taken to calculate the Basic State Pension and other pension entitlements is to have a single value which applies to all pensioners regardless of age (i.e., different generations are treated the same). We have assumed here that the MIR will be treated in the same way. In the long run, this will be unsustainable since the BSP will be growing faster than the MIR, but this will be a political decision. The uncertainty in projecting the path of the MIR and the BSP is sufficiently low in the short term that these reviews could be at relatively infrequent intervals (e.g., every five years).

A.7 *How to minimise unnecessary burdens for individuals and industry in the assessment of the MIR.*

A major simplification will be to have one MIR in a given year which will apply to pensioners of all ages. However, such a rule will involve other inconsistencies which we have discussed above. The other major concern is how to frame a simple rule for how much income should be secured under the MIR when pensioners continue in employment, since it is essential that pensioners have incentives to carry on working.

A.8 *Whether other legislative or regulatory barriers remain whose removal would enable industry to provide consumers with more attractive products without incurring fiscal or avoidance risks.*

No comment.

A.9 *How the industry, Government and advice bodies such as CFEB can work to ensure that individuals make appropriate choices about what to do with their retirement savings in the absence of the requirement to purchase an annuity by age 75.*

These bodies need to recognise three things: (i) the importance of good default decumulation strategies (i.e., those that attempt to replicate optimal decision

making), (ii) the general ineffectiveness of financial education in improving outcomes[26] and (ii) the cognitive problems that elderly people can face when dealing with investments.

A.10 *Whether the proposed reforms have unintended consequences that may affect the market's ability to supply annuities at attractive rates or prevent the annuity market being able to meet likely demand for annuities.*

If the requirement to annuitise at age 75 above a MIR is abolished, we estimate that the compulsory purchase annuity market will shrink from its current value of £11 billion per annum to around £9 billion per annum. Further, the value of DC pension funds that could be accessed as a lump sum or drawdown product would be between £1 billion and £2 billion per annum.

We speculate that the proposal to abolish the annuitisation requirement for DC pension schemes will have an effect on the DB pensions market, either through lobbying or through pension transfers.

We suggest that if the same rules on annuitisation above a Minimum Income Requirement in the DC market are applied to the DB market, between £10.2 billion and £16.7 billion of DB pension fund assets may be accessed each year by the retiring cohort. We suggest that if the Government does not intend its proposals on the relaxation of annuity rules for DC pensions to apply to DB pensions, it may need to legislate to prevent this.

Our analysis suggests that the proposal to abolish the annuitisation requirement will have an effect on the government bond market. If the retiring cohort of pensioners accesses their DC lump sums, we predict insurance companies will no longer need to hold government bonds in the same quantity to back their annuity products and would become net sellers of between £0.5 billion and £1.2 billion of gilts annually. Similarly if DB pensioners also access the lump sum equivalent of their pensions at retirement, DB pension funds will liquidate between £3.2 billion and £5.2 billion of long-term government debt annually. This liquidation of government debt will occur at a time when the Government is attempting to fund a huge budget deficit by issuing bonds.

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26 As Professor David Laibson of Harvard University has stated "Education no substitute for good default" (Pioneer Investment's European Colloquia 2007).

10. Conclusion

The proposals contained in HM Treasury's consultation document 'Removing the requirement to annuitise by age 75' released on 15 July 2010 will have, if implemented, a radical effect on pension provision in this country. We have examined the potential effects of this policy and some unintended consequences. We have identified a worst-case scenario, in relation to the impact on the existing annuity market, the impact of DB pensions and the effect on the government bond market. Perhaps large numbers of people will not wish to access their pension funds, but the temptation to dip into a large pool of cash may prove irresistible.

A good pension scheme has a two-fold purpose: (i) it provides consumption security in retirement for however long the scheme member lives and (ii) it allows the scheme member to enjoy a similar standard of living in retirement as they enjoyed prior to retirement.

The consultation document's proposals will change the frame through which pensions are viewed. Pensions will be viewed not through a "consumption frame" – which is how everyone views the Basic State Pension, for example – but rather through an "investment frame". People will begin to see not a stream of future pension payments, but instead will see a "pension pot", the present value of this stream of future pension payments. And, given human nature as well as their general poor understanding of longevity risk, people would rather like to be able to invest and spend their pension pot as they see fit. The consultation document's proposals encourage this view. They also encourage the view that it will be acceptable to live just above the breadline in retirement: having secured the MIR, it won't really matter how poorly the remaining pension pot is invested.

We should also emphasise that the objective of the MIR that we have calculated is to avoid a pensioner falling back on means-tested benefits (and we have only considered Pension Credit). The consultation document (e.g., ¶3.14) recognises that pensioners' needs will vary throughout retirement due to long-term care and health costs. Our MIR does not take account of such costs or changing circumstances. It is likely that some pensioners will find the MIR unacceptably low for some situations: the only way to avoid this would be to set the MIR at a much higher level.

The important message for policymakers from this report is that in practice the MIR may need to be greater because of the state's liability for other means-tested benefits, and because there is no guarantee that current Pension Credit levels will meet pensioners' income and expenditure needs throughout retirement.

Pension schemes are going to look increasingly like tax avoidance schemes for the well off. While the poor will still be required to annuitise, the rich will be given the flexibility to spend their tax-favoured pension pot as they wish, including bequeathing their unused funds to their children without any liability to inheritance tax.

Finally, the Government's proposals are likely to lead to an increase in the variability of outcomes for pensioners. As a consequence of this: (i) there is the risk of increasing long-term political pressure from the retired population for a larger share of the national cake and (ii) there is the risk of increased poverty among pensioners who make poor decisions with their wealth.

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Appendix

Summary of HM Treasury's consultation document 'Removing the requirement to annuitise by age 75' published on 15 July 2010

- The consultation recognises that for many an annuity will always remain the best product

- However the Government wishes to introduce greater flexibility in how people can take income to reflect the changing pensions and workplace environment, to encourage more pension saving and to encourage product innovation.

- The age 75 rules on annuitisation, value protection lump sums, tax free cash and trivial commutation lump sums will be removed.

- The age 75 rules on contributions and Lifetime Allowance checks will remain.

- Pension funds will be able to remain in a USP ("capped drawdown") indefinitely. ASPs will cease to exist.

- The USP maximum withdrawal limit may be reviewed. The current 120 per cent is probably too high at older ages and may have to be less than 100 per cent to avoid the risk of people exhausting their funds.

- There will be no minimum withdrawal requirement.

- Any withdrawals will be taxed as income.

- A USP customer will be able to access additional flexibility (in effect the permanent removal of the upper withdrawal limit) through "flexible drawdown" provided they have secured a minimum income (the Minimum Income Requirement). This minimum income will need to be a secure pension income for life and escalate by the lower of 2.5 per cent or inflation.

- The customer would then be able to withdraw up to 100 per cent of the remainder of their fund. This will be taxed as income.

- The minimum income required is not set out in the consultation paper.

- However they expect it to take account of not just current means-tested benefits, but also potential health costs and future expenditure needs.

- Restrictions on value-protection annuities will be removed.

- Lump sum death benefits will be taxed at 55 per cent to counteract tax relief given - this includes value-protection payments.

- The only exception is pension saving where no part has been used for an income when the saver dies before 75 where the pot will be tax free.

Previous Pension Institute Reports

'Delivering DC? Barriers to participation in the company-sponsored pensions market', by Debbie Harrison, Alistair Byrne, and David Blake, October 2004.

'Pyrrhic Victory? The unintended consequences of the Pensions Act 2004', by Debbie Harrison, Alistair Byrne, Bill Rhodes and David Blake, October 2005.

'Annuities and Accessibility: How the industry can empower consumers to make rational choices', by Debbie Harrison, Alistair Byrne and David Blake, March 2006.

'Dealing with the reluctant investor: Innovation and governance in DC pension investment', by Alistair Byrne, Debbie Harrison and David Blake, April 2007.

'An unreal number: How company pension accounting fosters an illusion of certainty', by David Blake, Zaki Khorasanee, John Pickles and David Tyrrall, January 2008.

'And death shall have no dominion: Life settlements and the ethics of profiting from mortality', by David Blake and Debbie Harrison, July 2008.

'Ending compulsory annuitisation: What are the consequences?', by David Blake, Edmund Cannon and Ian Tonks, July 2010.

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