Review of research relevant to assessing the impact of the proposed National Pension Savings Scheme on household savings

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A report of independent research carried out by PricewaterhouseCoopers on behalf of the Department for Work and Pensions
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Summary

This report summarises the key findings from our review of the research literature relevant to the question of whether the National Pension Savings Scheme (NPSS) recommended by the Pensions Commission would add to total household savings. This review is intended to assist the Government in their assessment of the NPSS and other options for delivering personal accounts and reforming private pensions.

Key findings from the research review

This research review has highlighted many uncertainties and conflicting results across studies, but the following broad conclusions can be drawn.

First, there is strong evidence\(^1\) from both the United States (US) and the United Kingdom (UK), consistent with recent advances in behavioural economics, to suggest that automatic enrolment should boost participation rates in pension schemes.

Second, evidence\(^2\) of matching contribution schemes in the US, the UK and Australia suggest that these may be more effective at generating a savings response than standard tax relief, especially if they are simple, effectively communicated and supported by employers and/or pension providers. There is also less evidence of offsetting reduction in other savings for these matching schemes, which is consistent with the fact that they are targeted on lower earners with few other savings.

Third, while earlier studies of voluntary tax-favoured savings schemes in the US pointed to significant net increases in household savings as a result, a number of more recent studies\(^3\) have thrown doubt on these findings and suggested high

\(^{1}\) Key studies here include Madrian and Shea (2001), Choi \textit{et al}. (2001) and Benartzi and Thaler (2004) for the US, and Horack and Wood (2005) for the UK. 

\(^{2}\) A key study for the US is Duflo \textit{et al}. (2005). For the UK, the Saving Gateway studies by Kempson \textit{et al}. (2003, 2005) are also important.

offset levels, possibly close to 100 per cent for higher earners. For low to middle earners, however, the evidence\(^4\) points to lower (but still positive) offset effects. The UK evidence is patchier, but consistent with high offset effects for Tax Exempt Special Savings Account (TESSAs) and Personal Equity Plan (PEPs).

Fourth, evidence on the effect of changes to mandatory or quasi-mandatory funded savings schemes also suggests some offset effects, but probably to a lesser degree. For Australian compulsion, for example, a 40 per cent offset effect would seem a reasonable central estimate\(^5\), although this is subject to considerable uncertainty and there is a broad range of results for other countries. Unfortunately, there have been few, if any, studies that have broken down these results by income group, although a priori arguments would suggest that offset effects would be higher for higher income groups with greater stocks of other assets to switch into mandatory schemes.

Fifth, the message from a number of macroeconomic studies\(^6\) is that introducing a new form of funded pension scheme may well be associated, to a significant degree, with offsetting reductions in other savings. These studies are necessarily based on highly aggregated macroeconomic data, however, which limits the applicability of their quantitative results to assessing the likely impact on household savings of a particular type of personal account scheme such as the NPSS.

**Implications for the impact of the proposed NPSS on household savings**

Having reviewed the available UK and international research on these issues, we then considered how these findings could be applied to the particular case of the NPSS.

The first important point to note here is that the target population for the NPSS consists of lower and middle earners with relatively low average levels of other savings. This might reduce the degree of offset to be expected in the NPSS as compared, for example, to that observed for PEPs and TESSAs in the UK, or 401(k) schemes in the US.

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\(^4\) In particular, Engen and Gale (2000) and Engelhardt (2001).

\(^5\) A key study here is Connolly and Kohler (2004), which estimates a 38 per cent offset but also surveys earlier studies suggesting offset factors for Australia of anywhere from 17 per cent to 75 per cent. These offset rates refer to the percentage of the increase in compulsory pension contributions estimated to be offset by reductions in other household savings.

\(^6\) Key studies here include Bailliu and Riesen (2000), Bosworth and Burtless (2004) and Disney (2005) for a range of OECD countries, and Granville and Mallick (2004) for the UK.
Second, it can be argued that the results for mandatory schemes might provide a better guide of likely offset effects with the NPSS than those for voluntary schemes. This is both because of the wider target market for the NPSS and the fact that, although the NPSS allows for an opt out for employees, in practice the available evidence suggested that these opt-out rates should be reasonably low with automatic enrolment, although this was sensitive to the precise design of the scheme and the surrounding communications about it from both the Government and employers.

Third, the fact that the proposed NPSS is a matching scheme, with Government and employers together providing a 100 per cent match for employee contributions, should be a positive factor both in increasing participation rates and reducing offset rates based on the research reviewed on other matching schemes.

Based on the balance of research evidence considered in this report, an average offset rate on other household savings of the order of around 30-50 per cent might be considered a plausible assumption for the NPSS (or similar personal account schemes). Taking into account evidence for the US and the UK, higher offset rates might be assumed for higher earners and vice versa. The offset is likely to involve reductions in both other pension contributions (where people have them) and other liquid financial assets, and could apply to both employee and employer NPSS contributions.

There are, however, large uncertainties surrounding any estimates of behavioural responses in this area (both by employers and employees), both because the research literature itself contains a wide variety of findings and because there are no direct international or UK precedents for the NPSS to guide the assumptions made here.
1 Introduction

In this report we summarise the key findings from our review of the research literature relevant to the question of whether the National Pension Savings Scheme (NPSS) recommended by the Pensions Commission would add to total household savings. This review is intended to assist the Government in their assessment of the NPSS and other options for delivering personal accounts and reforming private pensions. We have focused on academic research and other published research meeting appropriate standards of rigour and robustness. The review was completed in early April 2006 and does not take account of any research published after that date.

The review is divided into two main chapters: Chapter 2 summarises a wide range of research of potential relevance to the assessment of the net impact on household savings of the proposed NPSS. This encompasses macroeconomic studies of the impact of changes in pension savings on total savings and microeconomic studies looking at the impact of tax incentives and matching contributions on voluntary savings (in particular in the United States (US) and the United Kingdom (UK), the impact on total savings of changes in mandatory or quasi-mandatory funded savings schemes, and the impact of automatic enrolment.

Chapter 3 of the report then discusses the implications of this research for the assessment of the impact of the NPSS on total household savings.

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7 The review builds on but significantly expands and updates an earlier literature review carried out by PricewaterhouseCoopers for the Association of British Insurers (ABI). It also draws out the specific implications for the NPSS. For the earlier review, see Appendix B of ‘Bridging the Savings Gap: An Evaluation of Voluntary and Compulsory Approaches to Pension Reform’, PricewaterhouseCoopers report for the ABI, June 2005.
2 Findings from the research review

Our review of the relevant research literature is divided into the following sections:

- Section 2.1 – Macroeconomic studies of the impact of changes in pension savings on total savings;
- Section 2.2 – Effect of rate of return changes on total private savings;
- Section 2.3 – Evidence on the effect of specific tax incentives on pensions and other savings;
- Section 2.4 – Impact of matching contributions on savings rates;
- Section 2.5 – Impact on total savings of changes in mandatory and quasi-mandatory funded savings schemes;
- Section 2.6 – Evidence on the impact of automatic enrolment on participation rates and contribution levels;
- Section 2.7 – Summary of key findings from the research review.

2.1 Macroeconomic studies of the impact of changes in pension savings on total savings

There have been a number of macroeconomic studies in this field with a range of different results, although it should be noted that they tend to focus on impacts on total national savings (including Government and private savings) or total private savings (including corporate savings) rather than just household savings. A recent example of this kind of study is Bosworth and Burtless (2004), who use national accounts and flow of funds accounts data for the US, Japan, Germany, France, United Kingdom (UK), Canada and Australia for the period 1971-2000, plus shorter data runs for Italy, Denmark, the Netherlands and Sweden, to estimate relationship
Findings from the research review

between the total private savings rate and the rate of net accumulation in life insurance and pension funds (LIPFs), after controlling for other factors (change in real Gross Domestic Product (GDP), the dependency ratio, the unemployment rate, country fixed effects and a time trend). The key results from this panel data regression are shown in Table 2.1.

Table 2.1 Estimated coefficients from regression of total private savings on life insurance and pension fund accumulation and other factors

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient from basic regression</th>
<th>Coefficient from regression corrected for auto-correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life insurance and pension fund saving</td>
<td>-0.098 (0.21)</td>
<td>-0.089 (0.14)</td>
</tr>
<tr>
<td>Lagged life insurance and pension fund saving</td>
<td>0.221 (0.23)</td>
<td>-0.055 (0.15)</td>
</tr>
<tr>
<td>Sum of coefficients</td>
<td>0.123</td>
<td>-0.144</td>
</tr>
</tbody>
</table>

Note: standard errors in brackets.
Source: B. Bosworth and G. Burtless (2004), Table 4. Their regressions also included changes in real GDP, dependency ratios, unemployment rates and a time trend.

We can see from the first column in Table 2.1 that the two-period sum of the coefficients on LIPF saving is only 0.123, which is not statistically significantly different from zero, and can be interpreted as implying that a ten per cent increase in pension savings leads to only a 1.2 per cent rise in total savings (i.e. an 88 per cent offset effect). Furthermore, after correcting for evidence of autocorrelation, the sum of the coefficients becomes negative, although still statistically insignificant. Overall, the authors conclude that there is little evidence at the macroeconomic level that additional saving through LIPFs is associated with higher total private savings. Of course, these LIPF savings are generally voluntary employer-provided schemes that will tend to be focused on middle to higher earners with other forms of savings to move funds across from, so these results may not carry across to NPSS-type schemes which are targeted more at lower to middle earners and where automatic enrolment may result in lower offset effects.

Several earlier macroeconomic studies are also reviewed by Bosworth and Burtless. First, there are a number of studies that have looked at the impact of the shift to mandatory individual retirement accounts in the early 1980s in Chile. Holzmann (1997) and Schmidt-Hebbel (1998) found that this was associated with a large increase in total private saving, but further analysis by Agosin (2001) suggested that the rise in savings was primarily in the corporate sector, with little net change in household saving.

Second, Bailliu and Riesen (2000) found a weak positive correlation between the build-up of private pension assets as a share of GDP and total private savings rates.

Note that this includes both corporate and household sector savings.
for a sample of six Organisation for Economic Cooperation and Development (OECD) and three non-OECD countries (using panel data). But they found the correlation was negative for the six OECD countries alone, which is more consistent with the Bosworth and Burtless results in the second column of Table 2.1.

Third, Granville and Mallick (2004) used annual macroeconomic data to estimate the relationship between aggregate national savings rates and changes in funded pension wealth for the UK between 1978 and 2000, controlling for other factors that might be expected to influence national savings such as private sector credit levels, real interest rates, fiscal deficits, the old age dependency ratio and public pension spending. They found that increases in funded pension assets are associated only with a very marginal increase in national savings (i.e. the estimated offset rate in their preferred long-run econometric model was 98.7 per cent, implying close to total substitution between funded pensions and other forms of national saving). However, as the authors make clear, their results need to be interpreted with caution given the relatively small sample size (because they only look at the UK, in contrast to other macroeconomic studies discussed already that use panel data for a range of countries).

A somewhat different kind of macro-level study was carried out by Disney (2005), who used panel data on 22 OECD countries at three dates (1975, 1985, 1995) to explore how the design of public pension schemes affected household savings rates, after controlling for other factors (i.e. demographic structure, extent of demand shocks, country-specific effects and time trends). In particular, Disney created measures of how far public pension schemes departed from actuarial neutrality, thus splitting them into their pure retirement saving component and their redistributive component, which he encapsulates in a ‘pension tax’ parameter. When included in panel data regressions, this parameter has a large, statistical highly significant positive impact on household savings rates in these countries. This finding suggests that the closer public pension schemes are to actuarial neutrality, the greater the likely offset effects on household savings. Since the NPSS would be designed to be actuarially neutral as we understand it, this might suggest relatively high offset effects on other household savings as compared to UK state pension schemes such as SERPS/S2P and, in particular, the Basic State Pension (BSP), which have much

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9 It should be noted that Granville and Mallick do not directly include housing wealth in their analysis, though this may be included indirectly to some degree through the inclusion of private credit levels, much of which will be mortgage debt.

10 Note that this substitution may take the form of increased borrowing rather than decreased inflows into non-pension assets. It should also be noted that Granville and Mallick focus on the net effects on total national saving, rather than household saving or (as in the Bosworth and Burtless study) total private saving. From a macroeconomic perspective, however, it can be argued that it is national saving that matters most here, as discussed in Pomerantz and Weale (2005) and in the second Pensions Commission report (2005). Distributional effects can also be important from a social welfare perspective.
larger redistributive elements in their design. On the other hand, Disney also finds that more actuarially neutral schemes are associated with higher economic activity rates among women (but not men), which might be seen as a positive feature of the NPSS to the extent it is, in part, an alternative to making existing UK state pension schemes more generous.

Overall, the message from these macroeconomic studies seems to be that introducing a new type of formal funded pension scheme may well be associated to a significant degree with offsetting reductions in other savings. But applying this insight to the specific case of the NPSS requires further evidence at a microeconomic level, as discussed further in Sections 2.3 to 2.5.

2.2 Effect of rate of return changes on total private savings

A related field of research to the macroeconomic studies discussed above considers the effect of rates of return changes on total private savings. This has been a central concern of economists for a long time, but the range of empirical results is wide. In theory, the effect of (after-tax) rate of return changes on the overall level of savings is ambiguous since an increase in the rate of return (e.g. due to increased tax relief) creates both a substitution and an income effect, which tend to pull in opposite directions. On the one hand, a higher rate of return encourages people to save more now since the return on this in terms of higher future consumption will be higher (the positive substitution effect). On the other hand, a higher return may mean that people feel that they can achieve their desired future income level without saving as much now (the negative income effect). The net effect will vary across individuals depending on their particular wealth and income levels and personal preferences.

The results of these rate of return studies could be applied to the NPSS, although this would require further work to estimate how the NPSS would affect post-tax rates of return on saving relative to existing pension products. Tax relief is not expected to be set at a more generous rate for the NPSS than for existing pension schemes, though it might be in a different form as a matching contribution (as discussed in Section 2.4). There could be rate of return effects through annual management charge changes, which might provide the basis for further modelling work as the Department for Work and Pensions (DWP) develops its estimates of these charges under alternative models. There could also be rate of return effects arising from employer contributions to the NPSS, although this depends on what the baseline is for comparison in terms both of employer contributions without the NPSS and whether these employer contributions are, as seems quite likely, largely offset by lower wage growth in the medium term. In the light of these points, we have not tried to estimate elasticity effects based on rate of return changes associated with the NPSS, though further modelling work might be considered, particularly once annual management charge estimates are available. But the studies considered are nonetheless of some relevance to the general question as to how far there is likely to be any response at all to the NPSS in terms of a change in total household savings rates.
Many studies have reported significant positive effects of rates of return on saving propensities in several countries, while some have concluded that no such evidence can be distilled from such data, and a few have even indicated an inverse relationship exists (i.e. that income effects dominate). Indeed, the conclusion of a survey by Honohan (2000) of a number of aggregate time series econometric studies, both for individual countries and for panels of countries, was that:

‘...more studies have found a positive interest rate elasticity than a negative one, but the coefficients have generally been small and insignificant.’

Table 2.2 shows a variety of results that have been reported in various empirical studies over the past four decades. Around half of the studies failed to corroborate a significantly positive relationship between rates of return and savings. On the other hand the remaining studies included in the table seem to indicate a fairly strong positive link between rates of return and saving. The average estimate of the percentage change in savings for a one percentage point change in the real rate of return ($\delta S/\delta r$ in Table 2.2) in the studies is seven per cent, but the estimates range very widely from 0 to 45 per cent. Note that a zero elasticity corresponds to a 100 per cent savings offset effect. Studies are for the US only unless stated otherwise in the Table 2.2.

The full range is somewhat misleading, however, since the estimates tend to cluster near zero. The average estimate across all studies of seven per cent is boosted by the very high rate of return effects found by Heien (1972) and Summers (1981). If these two ‘outliers’ are excluded, the estimated average effect is only 3.3 per cent. On the other hand, several of the studies showing zero effects are by the same authors, so there is some ‘double counting’ in this average that tends to bias it downwards.

Our review shows that there is no consensus on the effect of rate of return changes on savings. It should be noted, however, that most of the quantitative studies of the effect of rates of return on savings deal only with changes in pre-tax rates of return (often looking only at interest rates rather than total rates of return on all financial assets). Boskin (1978) is one of the few studies that investigated the relationship between private savings rates and real post-tax rates of return on a mix of equities and bonds. Boskin’s study is also one of the most commonly cited in the applied economics literature in this field. For these reasons, we might give particular weight to Boskin’s elasticity estimates, which ranged from three to seven per cent on the definition used here, depending on the econometric specification adopted.

As discussed above, such elasticity calculations do not translate directly to the NPSS context, since it is not easy to identify how the NPSS would affect post-tax real rates of return on savings compared to other tax-advantaged savings products (although there might be an effect that could be modelled here in terms of reducing annual management charges). Nonetheless, our tentative conclusion from the above survey is that the effect of changes in post-tax rates of return on total savings is probably positive but relatively small.

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11 Note that these studies use aggregate data and so do not allow analysis by income group.
Table 2.2  Overview of results of empirical studies on the rate of return elasticity of savings

<table>
<thead>
<tr>
<th>Study</th>
<th>Period</th>
<th>δS/δr (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wright (1967 – 69)</td>
<td>1897 – 1959</td>
<td>5</td>
</tr>
<tr>
<td>Taylor (1971)</td>
<td>1953 – 69</td>
<td>20</td>
</tr>
<tr>
<td>Heien (1972)</td>
<td>1948 – 65</td>
<td>44</td>
</tr>
<tr>
<td>Juster &amp; Wachtel (1972)</td>
<td>1954 – 72</td>
<td>7</td>
</tr>
<tr>
<td>Blinder (1975)</td>
<td>1949 – 72</td>
<td>0</td>
</tr>
<tr>
<td>Boskin (1978)</td>
<td>1929 – 69</td>
<td>3-7</td>
</tr>
<tr>
<td>Fry (Seven LDCs, 1978)</td>
<td>1962 – 72</td>
<td>2</td>
</tr>
<tr>
<td>Howrey &amp; Hymans (1978)</td>
<td>1951 – 74</td>
<td>0</td>
</tr>
<tr>
<td>Blinder (1981)</td>
<td>1953 – 77</td>
<td>0</td>
</tr>
<tr>
<td>Mankiw (1981)</td>
<td>1948 – 80</td>
<td>0</td>
</tr>
<tr>
<td>Carlino (1982)</td>
<td>Calibrated model</td>
<td>0</td>
</tr>
<tr>
<td>Evans (1983)</td>
<td>Calibrated model</td>
<td>10</td>
</tr>
<tr>
<td>Friend &amp; Hasbrouck (1983)</td>
<td>1932 – 80</td>
<td>0</td>
</tr>
<tr>
<td>Giovannini (Seven LDCs, 1983)</td>
<td>1964 – 80</td>
<td>0</td>
</tr>
<tr>
<td>Blinder &amp; Deaton (1985)</td>
<td>1954 – 84</td>
<td>0</td>
</tr>
<tr>
<td>Mankiw et al. (1985)</td>
<td>1950 – 81</td>
<td>5</td>
</tr>
<tr>
<td>Montgomery (1986)</td>
<td>1953 – 82</td>
<td>0</td>
</tr>
<tr>
<td>Baum (1988)</td>
<td>1953 – 85</td>
<td>0</td>
</tr>
<tr>
<td>Campbell &amp; Mankiw (1989)</td>
<td>1953 – 85</td>
<td>0</td>
</tr>
<tr>
<td>Campbell &amp; Mankiw (Five MDCs, 1991)</td>
<td>1957 – 88</td>
<td>0</td>
</tr>
<tr>
<td>Barro (10 MDCs, 1992)</td>
<td>1957 – 88</td>
<td>6</td>
</tr>
<tr>
<td>Gyfason (1993)</td>
<td>1953 – 77</td>
<td>7</td>
</tr>
<tr>
<td>Stein and Song (1998)</td>
<td>1974 – 91</td>
<td>17</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Average (excluding outliers)</td>
<td></td>
<td>3.3</td>
</tr>
</tbody>
</table>

Note: δS/δr denotes the estimated percentage change in total household savings, S, as a result of an increase in the real rate of return, r, by one percentage point. This table is adapted from Table 1 in Gyfason (1993), although it should be noted that the units have been adjusted to apply to total savings rather than the savings ratio. Note that a zero elasticity in this table corresponds to a 100 per cent savings offset effect. Results are for the United States (US) only unless stated. LDCs are less developed countries; ‘MDCs’ are medium developed countries.

Of course, the effect of tax incentives on pension savings alone may be much greater, even if this is largely due to diversion of savings from other sources, with only a small net effect on total household savings. An alternative approach is, therefore, to look directly at the effect of such tax incentives on pensions and other savings, and the offset effects implied by this analysis, as discussed below.
2.3 Evidence on the effect of specific tax incentives on pensions and other savings

One way that governments have traditionally tried to encourage retirement and other long-term savings is by providing special tax arrangements, or tax incentives, for funds held in particular types of savings accounts. Most of the readily available academic studies in English on this topic have been on the US, though there have also been some studies for the UK as well. These are discussed in turn in the following sections.

2.3.1 US studies of the effect of specific tax incentives on total savings

In the US, the conventional approach to subsidising saving through 401(k) plans and traditional IRAs provides tax deductions for contributions and tax deferral on account earnings. In order for such tax incentives to achieve their stated goal of increasing total savings, the funds going into such accounts need to have come from individuals reducing their consumptions levels. However, such tax incentives do not raise total saving when households finance contributions with reductions in existing assets, with saving that would have been undertaken even in the absence of the plan, or with increases in debt. If so, the government is subsidising saving that would have occurred in the absence of the 401(k) program.

Evidence suggests that high-income, high-wealth households are more likely to finance contributions to tax-preferred accounts by shifting assets from other sources, rather than reducing their current consumption, whereas moderate-income households are more likely to finance contributions by reducing consumption.

Table 2.3 shows that the US empirical literature contains a wide range of estimates for the effect of increased pensions saving on non-pension saving (what we refer to as ‘offset’ effects). Studies are for the US only unless stated otherwise.

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12 401(k) plans are tax-favoured defined contribution (DC) long-term savings plans provided by US employers. They were introduced in the early 1980s to supplement existing Individual Retirement Account (IRA) schemes, which are also DC schemes. It should be noted that 401(k) plans vary with some using automatic enrolment or even being mandatory for employees (the impact of automatic enrolment is discussed further in Section 2.6). Many also allow in-service loans and hardship withdrawals, rather than being pure retirement pension schemes.
Table 2.3  Overview of results of US empirical studies on the effects of pensions saving on other saving

<table>
<thead>
<tr>
<th>Study</th>
<th>Effects of pensions saving on other saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cagan (1965)</td>
<td>Positive impact on other saving</td>
</tr>
<tr>
<td>Katona (1965)</td>
<td>Positive impact on other saving</td>
</tr>
<tr>
<td>Munnell (1974)</td>
<td>Zero (i.e. no offset of other saving)</td>
</tr>
<tr>
<td>Munnell (1976)</td>
<td>62 per cent offset</td>
</tr>
<tr>
<td>Kotlikoff (1979)</td>
<td>Zero (i.e. no offset)</td>
</tr>
<tr>
<td>Blinder, Gordon and Wise (1980)</td>
<td>Zero (i.e. no offset)</td>
</tr>
<tr>
<td>Dicks-Mireaux and King (Canada, 1984)</td>
<td>27-50 per cent offset</td>
</tr>
<tr>
<td>Diamond and Hausman (1984)</td>
<td>Very small offset of other saving</td>
</tr>
<tr>
<td>Hubbard (1986)</td>
<td>16 per cent offset</td>
</tr>
<tr>
<td>Avery, Elliehausen and Gustafson (1986)</td>
<td>11-66 per cent offset</td>
</tr>
<tr>
<td>Bernheim and Scholz (1993)</td>
<td>Positive impact on other saving for college educated households, zero for others</td>
</tr>
<tr>
<td>Samwick (1995)</td>
<td>15 per cent offset</td>
</tr>
<tr>
<td>Poterba, Venti and Wise (1996)</td>
<td>Zero (i.e. no offset) or positive impact on other saving</td>
</tr>
<tr>
<td>Engen, Gale and Scholz (1996)</td>
<td>Large offsets</td>
</tr>
<tr>
<td>Gale (1998)</td>
<td>0-10 per cent offset with biases, 40-80 per cent offset controlling for biases</td>
</tr>
<tr>
<td>Gustman and Steinmeier (1998)</td>
<td>0-50 per cent offset</td>
</tr>
<tr>
<td>Engen and Gale (2000)</td>
<td>70-100 per cent offset (varies by income level)</td>
</tr>
<tr>
<td>Engelhardt (2001)</td>
<td>62 per cent average offset (but varies by income level)</td>
</tr>
<tr>
<td>Pence (2001)</td>
<td>Close to 100 per cent offset after adjusting for differential savings tastes and initial wealth levels for 401(k) schemes</td>
</tr>
<tr>
<td>Poterba, Venti and Wise (2001)</td>
<td>Low levels of offset (c.11 per cent) between 401(k)s and DB pension contributions</td>
</tr>
<tr>
<td>Attanasio and DeLeire (2002)</td>
<td>Close to 100 per cent offset for new IRA contributors in 1982 – 86</td>
</tr>
</tbody>
</table>

Note: Table 2.3 is adapted from Table 1 in Gale (1999), with a few more recent studies added.

Cagan (1965) and Katona (1965) find higher rates of non-pension saving for households with pensions than for households without pensions. Cagan rationalises this finding by arguing that pensions induce workers to recognise the need for retirement because a pension renders this objective more feasible. Venti and Wise (1993) and Bernheim and Scholz (1993) corroborate the Cagan-Katona finding. Several other studies have found either no effect, or only a small offsetting effect of pensions on other savings (Munnell (1974), Kotlikoff (1979), Blinder, Gordon, and Wise (1980), Diamond and Hausman (1984), Hubbard (1986), Samwick (1995) and Gustman and Steinmeier (1998)). But some other studies have found substantial rates of crowding out (e.g. Munnell (1976), Dicks-Mireaux and King (1984) for Canada, Avery, Elliehausen and Gustafson (1986), Gale (1998), Engelhardt (2001), Pence (2001) and Attanasio and DeLeire (2003)), although even here a wide range of estimated offset effects are reported.
Taken as a whole, the empirical literature yields ambiguous predictions concerning the magnitude and even the direction of the effects of pensions on other wealth. Indeed, this is shown quite clearly in the opposing results between papers by Porterba, Venti, and Wise (1994a, 1994b, 1995, 1996, 1998a, 2001) and Gale (1998, 1999) on the effect of 401(k) schemes on total US household savings, despite the fact that these findings were estimated using the same data set. However, some more recent research has attempted to resolve this apparent impasse, most notably by looking at variations in offset effects by income group, as discussed below.

2.3.2 Variations in offset effects by income group in US studies

Engelhardt (2001) uses self-reported and firm-reported pension information, Social Security, and household wealth data to examine the extent to which 401(k) pension plans have raised total household saving. The study suggests that household responses vary significantly by income group: even though relatively little of the average dollar of 401(k) wealth appears to be net new household saving, 401(k) schemes may have stimulated saving significantly for lower-to-middle-income households and, hence, increased retirement income security for an important segment of the population.

Engelhardt finds, using firm-reported data instead of self-reported data to address the measurement error in self-reported pension assets, that 401(k) schemes generate economically large, and sometimes statistically significant, household saving effects for lower-to-middle income households: the average dollar contributed generates between 70 cents and one dollar of new household saving. However, these saving effects attenuate with income: for households with income in the $50,000-$75,000 range, the household saving effect is estimated as just one per cent (see Figure 2.1). This pattern of declining saving is consistent with the view that higher-income households have had greater opportunities or incentives for substitution between components of wealth.

Engelhardt’s savings effects for the lower-to-middle income households are similar in magnitude to those found in Engelhardt (1996) for a Canadian tax subsidy to saving, and by Venti and Wise (1986, 1990b) for IRAs. Over all households, Engelhardt (2001) finds that around 38 cents of the average dollar of 401(k) wealth represent new household saving, although this estimate is subject to an estimated standard error of 16 cents. This weighted average estimate allows for the fact that higher income groups tend to save significantly more in 401(k) accounts, on average, than lower income groups.
When Engelhardt adjusts the data by integrating self- and firm-reported data, the overall impact of household saving was estimated to be -8 cents, with a standard error of 29 cents, and not statistically different from zero. However, the key conclusion from Figure 2.1 that offset effects increase with income levels remains robust and we would tend to give more weight to the results shown in this chart since it comes from a single consistent source of firm-reported data.

Engen and Gale (2000) allow the impact of 401(k)s to vary over both time and earnings groups in order to measure how household wealth is affected. They use data from 1987 to 1991 from the Survey of Income and Program participation and find that the effects of 401(k)s on household wealth varies significantly by earnings level. Variants of this test were originally laid out in the work of Poterba, Venti and Wise (1995, 1996a, 1996b), and Engen, Gale and Sholz (1994, 1996). Poterba, Venti and Wise concluded that most 401(k) contributions represent new saving, while Engen, Gale and Sholz found that 401(k) contributions are largely offset by reductions in other assets.

Engen and Gale’s analysis suggests that 70-80 per cent of 401(k) balances accrue to those earnings groups (i.e. $40,000+) where eligibility has no noticeable impact on wealth accumulation due to high offset effects on non-401(k) financial assets. Between 11-16 per cent accrue in the earnings group (i.e. $30,000-$40,000) where upward of 100 per cent of 401(k) balances appear to represent net additions to private saving. Between 9-13 per cent of 401(k) balances accrue to the earnings group (i.e. $10,000-$20,000) where eligibility has an uncertain effect on net private saving. It is worth noting that even if all the balances of households with earnings below $40,000 were net saving, this would only account for between 20-29 per cent of 401(k) balances.
Therefore, the results imply that 401(k)s held by low earnings groups, who hold a small portion of 401(k) balances, are more likely to represent additions to net wealth than 401(k)s held by high earnings groups, who hold the bulk of 401(k) assets. Overall, between 0-30 per cent of 401(k) balances represent net additions to private saving.

Pence (2001) follows a similar method to the paper by Engen and Gale (2000), examining whether the 401(k) program increased private saving over the period from 1989 to 1998 by comparing the changes in wealth over time of 401(k) eligible and ineligible households and using data from the Survey of Consumer Finances (SCF).

Pence argues that the Engen and Gale (2000) analysis suffers one significant limitation. Although they are undoubtedly correct that the 401(k) program has heterogeneous impacts and that eligible and ineligible households are more similar within income groups, they do not account for the fact that eligible and ineligible households differ in their taste for saving even within income categories, and as a result, their estimates are likely to be biased towards suggesting that 401(k)s increase saving. Pence adjusts for this potential bias by constructing subjective measures of saving taste from questions on the SCF.

After implementing these improvements, the growth in eligible wealth is essentially equal to the growth in ineligible wealth for all wealth measures. This finding holds true even within income groups, contrasting with the finding of Engen and Gale (2000) that 401(k) eligibility may raise the wealth of low-income groups. Adding pension assets to the wealth measure increases the difference between the wealth of eligible and ineligible households at a point in time, but again does not increase the wealth of eligible households, relative to ineligible households, over time. Instead, eligible households may fund their 401(k) accounts by decreasing their investments in real assets. These findings appear rather more consistent with those of the various studies of Engen, Gale and Sholz, than with those of Poterba, Venti and Wise.

However, 401(k) eligibility may increase a worker’s interest in saving for retirement. If the saving taste measures also reflect this effect, the results suggest that aspects of the program such as its educational component or the signal sent by employer provision of retirement benefits are important. Even taking this caveat into account, however, the results in Pence’s paper suggest that the 401(k) program has a relatively small effect on private saving.

Attanasio and DeLeire (2002) reach similar conclusions in respect of the effectiveness of IRAs in generating net new savings. They use data from the US Consumer Expenditure Survey for the period 1982-86 and found that new contributors to IRAs during this period (which was the first period when IRAs were extended to the general population having previously been focused on the self-employed only) did not reduce their consumption levels over this period to any significant degree (after allowing for a wide range of control variables), suggesting that they were offsetting...
their IRA contributions either through reducing other savings or through increased borrowing. The same study found that new contributors in this period increased their non-IRA retirement assets by significantly less than continuing contributors, which again suggests a significant degree of offset for other savings.

Our preliminary conclusion from this review of past US studies is that, for lower income groups, additional pension saving is mostly new saving\textsuperscript{13}, while the opposite is the case for high income groups.

2.3.3 UK evidence on impact of savings incentives on total household savings

In addition to the US studies considered above, Attanasio, Banks and Wakefield (2004) consider the empirical evidence from the UK regarding the extent to which funds in Tax Exempt Special Savings Account (TESSAs) and Individual Savings Account (ISAs) represents new saving\textsuperscript{14}. Their results suggest that, while the take-up of ISAs has been quite high, there is no strong evidence that this had much effect on overall ownership of non-pension financial assets, or on levels of saving among those with such assets. Their findings mirror earlier estimates by Banks, Blundell and Dilnot (1994), which suggested that only around 15 per cent of savings in TESSAs represented net new saving. This evidence, particularly on ownership, is consistent with reshuffling behaviour of the kind observed in the US with IRAs. It should be noted, however, that take-up of TESSAs and ISAs has been focused on middle to high earners, for whom (drawing on the US evidence above) offset effects would be expected to be higher than for lower income groups with fewer other financial assets.

2.4 Impact of matching contributions on savings rates

In contrast to specific tax incentives, the provision of matching contributions could potentially represent a much more promising way to bolster incentives for low-to-middle income households to participate in retirement savings accounts. Matching contributions can be independent of the individual’s marginal tax rate, and thus provide a significant incentive even for people in low marginal tax brackets. Furthermore, the fact that these initiatives are targeted on lower income groups suggests that offset effects may be lower than for more general tax incentives.

\textsuperscript{13} This finding is confirmed by the results of studies of UK Savings Gateway pilot schemes (Kempson et al., 2003, 2005), which are referred to in more detail below.

\textsuperscript{14} TESSAs were introduced in the early 1990s in the UK and allowed tax-free income from savings up to certain limits in interest-bearing deposit accounts. Individual Savings Accounts (ISAs) were introduced in the late 1990s in the UK and allowed tax-free (or largely tax-free) returns on savings up to certain limits in interest-bearing accounts and/or equity and certain other investments.
It is, therefore, not surprising that the Pensions Commission recommended in their second report that consideration be given to redesigning the tax relief element of the NPSS to put this on a matching contribution basis. The evidence to support this position is discussed below for the US, the UK and Australia.

2.4.1 Saver’s Credit and other US examples of matching contributions

The Saver’s Credit in the US offers one example of matching contributions provided by the Federal government. Enacted in 2001, the credit provides an income tax reduction of up to 50 per cent of funds contributed to a 401(k) or IRA by qualified filers. It is the first major piece of federal legislation targeted directly on promoting tax-qualified retirement savings for moderate and lower income workers.

The matching rates under the Saver’s Credit reflect a ‘progressive’ structure. The rate of government contributions per dollar of private contributions falls as household income rises: the credit rate applies to contributions of up to $2,000 per year per individual and is 50 per cent for married taxpayers with adjusted gross incomes (AGI) up to $30,000, 20 per cent for AGIs between $30,001 and $32,500, ten per cent for AGIs between $32,501 and $50,000, and is not available at all for those with AGIs greater than $50,000. Estimates from the Tax Policy Centre suggest that almost 60 per cent of the benefits accrue to filers with an adjusted gross income between $10,000 and $30,000 (those earners who are eligible for a 50 per cent matching contribution). It, therefore, has exactly the opposite of the incentive structure created by traditional pension tax relief arrangements.

However, the credit as enacted may not accomplish its full potential (Brookings Institute, 2004). Firstly, the credit is currently not refundable. This means that millions of lower, and moderate, income households receive no incentive from it because they have no income tax liability against which to apply the credit. In particular, 61 million people filing tax returns have incomes low enough to qualify for the 50 per cent credit, but since the credit is non-refundable, only about a sixth of these tax filers could actually benefit from the credit if they contributed to an IRA or 401(k).

Secondly, for families with somewhat higher incomes, the credit provides only a modest incentive for saving. For example, a married couple earning $45,000 a year receives only a $200 tax credit for depositing $2,000 into a retirement account. This small credit represents only a modest matching rate. To promote saving among moderate-income households, the income eligibility for the 50 per cent credit rate could be raised to $50,000 for married couples. Extending the 50 per cent credit rate in this way would add around $5 billion to $7 billion a year to the cost of the credit. Additional expansions might be possible, but each $10,000 increment above $50,000 for married couples adds another $3-5 billion a year in revenue cost.

Individual Development Accounts (IDAs) are another US example where matching contributions have been used. The first systematic study of IDAs, ‘Saving Performance
in the American Dream Demonstration (ADD) showed that the poor do contribute to and accumulate assets in IDAs. This finding has been corroborated by similar IDA demonstrations in the US, as well as by the 3626-account learn$ave demonstration in Canada, the 1478-account Savings Gateway pilot in the UK (as discussed further below), and the nearly 200-account Family Development Accounts demonstration in Taiwan. ‘Saving Performance’ also showed that contributions were not strongly related to income, welfare receipt or most other individual characteristics.

Matching contributions are also present in many employer-sponsored 401(k) plans. Previous studies have found mixed evidence of the effects of the match rates on 401(k) participation and contributions. Several studies (Bassett, Fleming, and Rodrigues, 1998; Papke, 1995; Kusko, Poterba, and Wilcox, 1998) find that the existence of a match raises 401(k) saving, but that a higher match rate itself does not. Some other studies (e.g. General Accounting Office 1997) have even found that a higher match rate, conditional on the existence of a match, actually reduces 401(k) saving because the income effect dominates the substitution effect. Still other studies (e.g. Papke and Poterba 1995, Clark and Schieber, 1998) find that higher match rates do increase 401(k) saving.

Munnell, Sunden and Taylor (2002) used the 1998 SCF to identify factors that influence participation and contribution rates to 401(k) schemes. They find that the planning horizon of the employee is the most important factor, with those taking longer term views being more likely to participate in and contribute more to 401(k) schemes. On the plan design side, they find that the availability of an employer match and the ability of employees to get access to their funds before retirement through withdrawal and borrowing are the most important factors in determining employee contribution levels: the existence of such a match increases the average employee contribution rate as a share of earnings by around eight percentage points for those who decide to participate. In contrast, the level of the employer match is not statistically significant, confirming the finding of several of the other studies listed previously (although not all).

Another recent study, Engelhardt and Kumar (2004), found a positive but modest effect of match rates using individual-level data from the Health and Retirement study. Their results suggest that introducing a 20 per cent or 50 per cent match rate should increase dollar contributions by about ten per cent and 25 per cent respectively. They found the income elasticity to be negative but small, and not statistically different from zero. Nonetheless, the effects of 401(k) match rates, conditional on a match existing, remain unclear.

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15 It should be noted that we are not aware of any studies that have looked specifically at the relative effectiveness of government and employer matches.

16 The data used for this study does not allow the effect of employer matches on participation rates to be assessed.
A concern with some matching studies involving 401(k) plans, however, is that match rates offered by firms in such plans may not be independent of worker characteristics at the firm, which makes it difficult to disentangle the effect of matching rates on contributions from the selection of workers who are likely to work in firms that offer 401(k) plans. Another concern is that the results apply mainly to relatively affluent households. In particular, automatic payroll deduction and the other workplace features associated with the 401(k) plans, which could affect contributions, are more likely to be offered in larger firms with a comparatively better-off workforce. Therefore, the results may not be directly applicable to low- and middle-income families or to policy interventions that occur outside the workplace.

Duflo, Gale, Liebman, Orszag and Saez (2005) carried out a study using evidence from a large-scale, randomised field experiment regarding the effects of matching rates on the willingness of low- and middle-income families to contribute to IRAs. About 14,000 clients of H&R Block (the largest tax preparer in the US), across 60 offices in predominantly low- and middle-income neighbourhoods in St. Louis, were randomly offered either a 20 per cent match on IRA contributions, a 50 per cent match, or no match (the control group).

Unlike the Saver’s Credit, the match provided in this experiment was available in full to (virtually) all tax filers, had a simple and transparent structure, and was deposited directly in an IRA rather than reducing income tax liability. Unlike 401(k) matching contributions, the match provided was independent of individuals’ characteristics and of the workplace environment.

The results of the paper show that match rates can have large effects on IRA participation, with take-up rates of 2.9 per cent, 7.7 per cent and 14 per cent respectively, in the no match, 20 per cent and 50 per cent match groups. The take-up rate in the no match group was low, and less than one per cent higher than take-up before the experiment started. Matching incentives also have strong effects on overall amounts contributed. Indeed, total IRA deposits were 4.5 times larger with a 20 per cent match than with no match, and ten times larger with a 50 per cent match than with no match. The significant difference in take-up rates between the 20 per cent and 50 per cent groups indicates that the level of the match, and not only the fact that there is one, influences take-up. These effects are substantially larger than those found in the context of 401(k) matches.

The welfare and policy implications of savings incentives depend in part on who is most likely to use them. Of particular interest is the response of poorer households, where much of the policy concern is focused. They find that the effect of the match is significant in all income quartiles, although it does actually increase with income (see Figure 2.2).
Responses to the match were also larger for the tax filers owning a savings account or with positive investment income. Those with a savings account presumably have a stronger taste for retirement income or more familiarity with retirement savings, while those with positive investment income may be less credit-constrained and could use other savings to take account of the matches, thereby increasing the effects of matching rates. These attributes may also proxy for other tastes for savings in general and, hence, a higher propensity to respond to savings incentives. In contrast, homeowners respond to matches less than non-homeowners. This may be due to having to service mortgage payments and therefore, being more cash-constrained.

In the focus groups conducted during the study, contributors were asked what they would have done with their tax refund had they not received the match. Some clients gave answers that suggested that IRA contributions from their tax rebates made via the H&R Block scheme might be offset, in part, by lower savings elsewhere, but the responses did not allow precise quantification of this potential offset effect.

The second main result of the paper came from a comparison between the effect of this match experiment and that of the Saver’s Credit. Contributions in the Saver’s Credit were almost five times smaller than that of a 50 per cent match rate, even though the effective match provided by the Saver’s Credit for eligible lower-income households is substantially larger than 50 per cent. Since both programs provide a match for retirement savings contributions, the striking differences in the responses highlights the role of information and simplicity in influencing saving choices.
2.4.2 UK Savings Gateway

The UK Government has also designed a new savings account, the Savings Gateway, that plans to stimulate savings by lower income groups by matching savings up to a limit of £25 per month (and for a limited period of time). There are possibilities that this principle could be extended to pension saving. The Government could match employee, or employer, or joint contributions. An evaluation of early pilot studies (Kempson et al., 2003) suggested that they had succeeded in encouraging people on low incomes to save who had not previously done so, with most of the saving being new saving not just transfers from other savings accounts. The £25 per month maximum seemed to become a target for many participants who could afford to save, with most monthly contributions being either £25 or zero. Two-thirds of participants interviewed said that they intended to continue with regular saving after the account matured.

The final report on these pilots (Kempson et al., 2005) provided insight into their longer-term effects. In particular, three or more months after maturity, 91 per cent of Savings Gateway participants still had a savings account of some kind, although only 41 per cent were still saving fairly regularly (based on a survey of 459 matured accounts). In-depth interviews suggested that, in a significant proportion of cases, people were continuing with their savings accounts out of inertia, although some had reduced their contributions significantly, or closed their accounts, once the incentive of a matched contribution was removed. Some, however, had shifted their money to other accounts that offered better interest rates and a significant proportion of these did seem to have become more regular savers as a result of the pilot.

It should be noted, however, that some care is needed in extrapolating from the apparent success of the Savings Gateway pilots (and indeed other one-off experiments such as the H&R Block exercise in the US discussed above) to the likely results of nationwide implementation. This is because pilot schemes always have a tendency to involve particular concentrations of effort and often a high motivation to succeed by those involved in running the pilot. Replicating this same degree of effort and motivation at national level is not always easy. On the other hand, early pilots can also provide lessons on what works well and not so well, so leading to greater success in later implementations, so it is not necessarily the case that the results of early pilots will given an exaggerated impression of likely nationwide effects.

2.4.3 Australian Super co-contributions

‘Super co-contribution’ is a form of matching contribution from the Australian government. It was introduced on 1 July 2003, replacing the tax offset for personal superannuation contributions and was amended in 2004 to increase the Super co-contribution amounts and to make more people eligible by increasing the income threshold. If an individual’s income for tax purposes is A$28,000 or less a year, the government puts in A$1.50 for every A$1 put into the superannuation, up to a maximum Super co-contribution of A$1,500 a year, declining as income rises to a maximum of A$58,000 a year.
In February 2005, figures showed 450,000 low- to middle-income earners received A$244 million in extra super contributions in 2003/04. According to the Australian Tax Office (ATO), the average government co-contribution payment was around A$510. Superfunds saw a large increase in voluntary contributions in the third quarter of 2004 compared to the same quarter of the previous year.

A preliminary estimate by Bingham and Rothman (2005) suggests that around 70 per cent of the extra money going into Australian superannuation funds due to the introduction of co-contributions might be net additional saving, bearing in mind that this is focused on those in the low to middle income range with low base levels of savings. But the basis for this estimate appears to be expert judgement taking account of survey evidence on savings intentions, rather than analysis of actual data.

### 2.4.4 Summary: effect of matching contributions

Overall, it is rather early to judge the effectiveness of matching contribution schemes in the US, the UK and Australia. Initial evidence suggests that they have attracted funds from lower income groups, but (with the partial exception of the UK Savings Gateway pilot study) we are not aware of studies that have systematically analysed how far these are net new savings, as opposed to just money switched from other savings. However, the fact that these initiatives are targeted on lower income groups suggests that switching effects may be lower than for more general tax incentives.

Probably the main general conclusion is that these matching contributions can be effective in encouraging savings, especially if they are simple, communicated effectively and actively supported by employers and/or savings providers. These features will be important if matching contributions are to be successful in the context of the NPSS, particularly as regards employer support and simple, effective communication of the benefits of participation.

### 2.5 Impact on total savings of changes in mandatory or quasi-mandatory funded savings schemes

We discuss in turn the evidence on total savings impacts of Australian pension compulsion and a variety of other mandatory or quasi-mandatory funded savings schemes in other countries.

#### 2.5.1 Australia: impact of compulsion on total savings

The Australian experience, although different in important respects from the UK (e.g. in that the Australian scheme is compulsory with no opt out, in contrast to the proposed NPSS, and in terms of the way in which it was mediated through a national bargaining process that allowed wages to adjust to offset impacts on employer costs to a significant degree, at least for the initial three per cent employer contribution), does provide one possible basis for quantifying the potential effects of the NPSS in
the UK\textsuperscript{17}. We focus here on impacts on savings, rather than on labour market effects, which were not covered in the key studies we have reviewed.

Compulsory employer contributions (the Superannuation Guarantee), a system where a three per cent employer pension contribution was awarded in lieu of a three per cent wage increase, was extended to apply to most employees in 1992 after being introduced in 1986. The scheme was intended to boost deficient levels of saving and expand pension coverage in the private sector, which had previously been restricted to higher earners. The contribution rate has been gradually raised to its current level of nine per cent, although it has been estimated that a contribution rate of around 18 per cent is required for an adequate retirement income replacement rate in Australia\textsuperscript{18}.

In 1988, before compulsion was introduced, the level of private pension coverage in Australia was only around 40 per cent of the workforce, not significantly different from current coverage levels in the US and the UK. However, by 2001, following the introduction of compulsory contributions, superannuation coverage had more than doubled and stood at just under 87 per cent of the total workforce in Australia.

The key issue here is whether compulsion has led to additional total savings or just a switch of existing voluntary savings, with little or no net effect. Household savings rates in Australia have fallen from nearly ten per cent in the mid 1970s to 0.5 per cent in 2004, and a recent study by the Reserve Bank of Australia\textsuperscript{19} has suggested (as discussed further later) that compulsory superannuation may only have raised household saving rates in recent years by around 1.5-2 per cent relative to what would have happened without compulsion. Paul Keating, who was Treasurer and then Prime Minister during the period when compulsory superannuation was introduced, has said more recently that:

\begin{quote}
People may adjust their discretionary saving due to compulsory saving. Alternatively, compulsory superannuation may prevent earlier repayment of household mortgages, which is also a form of saving.'
\end{quote}

Paul Keating (JAPE, 2004)

\textsuperscript{17} The first Pensions Commission report (2004) focused on the Australian example, arguing that circumstances in Latin America (e.g. Chile) were too different to be of much relevance to the UK, while earlier quasi-compulsory schemes in the Netherlands and Switzerland were introduced very gradually a long time ago, which makes it difficult to isolate the impact of these policy shifts on savings (though we do discuss some studies on the Netherlands further below). The introduction of compulsion in Sweden was also in a very different context to current UK circumstances, although there may be some lesson in terms of scheme design (see Sunden, 2004).

\textsuperscript{18} ‘Superannuation and National Saving’, Fitzgerald (1993).

In general, as for the US 401(k) schemes considered above, the switching effect due to compulsion would be expected to be relatively high for those with higher incomes, but less for those on lower incomes who may have little or no voluntary savings to switch and who may have limited assets against which they can borrow to maintain consumption levels in the face of compulsion being introduced.

Table 2.4  Overview of results of empirical studies on the effects of compulsion on other savings in Australia

<table>
<thead>
<tr>
<th>Study</th>
<th>Period</th>
<th>Offset (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corcoran and Richardson (1995)</td>
<td>1980s</td>
<td>37</td>
</tr>
<tr>
<td>Covick and Higgs (1995)</td>
<td>1960 – 94</td>
<td>75</td>
</tr>
<tr>
<td>Gallagher (1997)</td>
<td></td>
<td>30 – 50</td>
</tr>
<tr>
<td>Connolly and Kohler (2004)</td>
<td></td>
<td>38</td>
</tr>
</tbody>
</table>

Table 2.4 shows that estimates of the offset of compulsory contributions by reductions in voluntary private savings range widely, from 17 per cent to 75 per cent, with the latest estimate by Connolly and Kohler (2004) being for an offset of around 38 per cent (i.e. implying that around 62 per cent of compulsory contributions are net additional savings).

Morling and Subbaraman (1995) found a much larger offset coefficient for net superannuation contributions, with about three-quarters of superannuation saving having been offset by changes in other saving. However, their results are not strictly comparable to the other studies for two reasons: Firstly, although their data covered a period of over 35 years, and so potentially contained a lot of information, over the period estimated (1960-94) superannuation comprised mainly voluntary contributions and, secondly, their coefficients summarise the behaviours of both the contributing and withdrawing cohorts.

The more recent study by Connolly and Kohler (2004) uses annual data from 1966/67 to 2001/02. They model households’ voluntary savings as a function of labour income, compulsory superannuation, net wealth and the debt-to-income ratio, focusing their analysis on what effect compulsory and voluntary superannuation have had on voluntary saving. Their estimate of the offset of compulsory superannuation is around 38 per cent, within Gallagher’s (1997) expected range of 30-50 per cent²⁰.

Connolly and Kohler’s results also suggest that households reduce their voluntary superannuation contributions to offset compulsory superannuation, but large

²⁰ Gallagher’s estimate was based on a review of previous studies, and was used as an assumption in the Treasury’s Retirement Incomes Modelling (RIM) group model.
standard errors make this conclusion tentative. The aggregated data they use does not allow them to derive results by income group, but some supporting evidence on this can be gleaned from the Australian Household Expenditure Survey, which found that although the total value of voluntary contributions has grown since the 1980s, this has been driven by high-income earners, while lower to middle-income earners reduced their contributions. Households who may otherwise have chosen to save through voluntary superannuation, may be increasingly relying on their compulsory contributions. But these results need to be interpreted with some caution, since higher earners may have raised voluntary contributions even more without compulsion, whereas lower income households may still have seen some net increase in saving due to compulsion. Specific empirical tests of these hypotheses against counterfactuals are not yet available for Australia as far as we are aware.

Connolly and Kohler also attempt to estimate the net effect that compulsory superannuation has had on the national saving rate. They conclude that the saving rate would have been lower by around two per cent of GDP by 2001/02 if it were not for the introduction of compulsory superannuation. When they also assume that all of the employers’ superannuation contributions were made in lieu of wage rises, they find that the saving rate would have been lower by around 1.5 per cent of GDP.

2.5.2 The Netherlands

The Dutch pension system consists of three tiers: The first tier is Social Security and is public and mandatory. It provides a minimum income to all Dutch residents from the age of 65 and is financed by social contributions depending on taxable incomes. In 2000, the basic public pension for a single pensioner represented around 50 per cent of their total retirement income on average and was set at a level equivalent to around 70 per cent of the minimum wage for an employed person. The second tier of the pension system consists of funded occupational pension plans that provide supplementary retirement income. They are quasi-mandatory but are in fact near universal, covering more than 90 per cent of the active population, and are financed by contributions. Alessie, Lusardi and Kapteyn (1995) have found that median Social Security wealth is considerably higher than the median value of occupational pension wealth. The third pillar is private, individual and voluntary.

Euwell (2000) uses the CentER Savings Survey, which is especially devised to study household savings and contains detailed information on household wealth holdings and pension rights, as well as questions on saving attitudes. Answers to the questions on savings motives indicate that, on average, households with high social security wealth and pension wealth find it less important to save in order to create a buffer for unforeseen events. This result can be interpreted as evidence for substitution between discretionary saving and mandatory saving.

Results of the empirical analysis suggest that there is a displacement effect for high-income households. However, a reliable quantitative judgement on the size of this effect cannot be made. Euwell can only conclude that there is no full displacement of the occupational pensions in national household savings since no significant effect is found in a representative panel of Dutch households.
Other Dutch studies using survey data are those by Alessie, Kapteyn and Klijn (1997), Kapteyn, Alessie and Lusardi (1999), and Alessie and Kapteyn (2002). These studies use (constructed) data on social security wealth and pension wealth and data on private wealth from the Socio-Economic Panel (SEP), a longitudinal survey administered by Statistics Netherlands consisting of approximately 5,000 households. These studies find a significant negative impact of social security wealth on discretionary wealth, while for occupational wealth the authors find an insignificant (sometimes positive) impact of occupational wealth on discretionary wealth.

2.5.3 Hong Kong

In 1995, Hong Kong enacted the Mandatory Provident Fund (MPF) Schemes Ordinance to provide a legal framework for a system of employment-based, privately managed, DC retirement savings scheme.\(^{21}\)

The MPF is a compulsory retirement system. Typically, the mandatory contribution rate is ten per cent of an employee’s income, with the employer and employee each paying five per cent, while self-employed persons have to contribute five per cent of their relevant income. An employee earning less than the minimum level of income ($5,000 per month) is not required to contribute but may choose to do so, although the employer must contribute five per cent regardless of the employee’s decision. Mandatory contribution is subject to a floor and a ceiling, and is tax deductible. Both the employer and employee can opt to make extra, voluntary contributions in addition to the mandatory contributions.

Prior to the implementation of the MPF in 2000, only around one-third of the workforce, mainly civil servants and professionals, had some form of retirement protection. In 2005, 85 per cent of the working population were benefiting from retirement benefits. Annual MPF contributions were estimated to be around $10 billion in the initial years of operation and to expand to $60 billion when the system matures after 30 years.

Whether the system will succeed in raising the savings rate is unclear. Hong Kong’s national savings rate has hovered between 30-33 per cent since the MPF was implemented (see Figure 2.3), with no clear trend yet emerging. It is unknown how many families will be induced to save more as a result of the MPF, and we are not aware of any studies that have analysed whether or not the MPF has resulted in any net new savings, as opposed to just money switched from other savings. Unfortunately household savings data, either at macro or micro-level, do not appear to be readily available for Hong Kong.

\(^{21}\) The Hong Kong pension regime is discussed further in Liu and Lee (1997), Chan (2000), Siu (2002) and Hong Kong SAR Government (2005).
2.5.4 Other countries

Börsch-Supan (2004) provides an early assessment of the impact of the tax-favoured ‘Riester pension plans’ in Germany in 2001 and a subsequent shift to deferred taxation of pensions in 2004. He concludes that, despite a significant subsidy and favourable tax treatment, there is little evidence yet that Riester plans have boosted retirement saving. He argues that tax incentives may prove ineffective if combined with complex regulations restricting investment possibilities and withdrawal plans. But the Riester plans are very different22 in form to the NPSS, so we would not want to draw any very strong conclusions from this for the present study.

Based on a more general survey of the European evidence, Börsch-Supan also concludes that there is little conclusive evidence that savings-related tax relief or similar subsidies increase total savings, though this is more due to a lack of data than to evidence that clearly shows high offset effects. He does, however, conclude that there is clear evidence of substitution between Pay As You Go (PAYG) state pension benefits and private retirement savings in the long run, so long as the government is clear about communicating changes to the generosity of state schemes (although in Germany he argues this was not done due to the political cost of announcing the full extent of the cuts in future state pension benefits).

22 In particular, the Riester schemes do not involve automatic enrolment or compulsory minimum employer contributions for employees who participate, in contrast to the proposed NPSS.
Raudla and Staehr (2003) review early evidence on the impact of pension reform in Estonia, which began in the mid-1990s and was completed by the introduction of a funded second pillar in 2002. Individuals contribute two percent of their gross earnings, but their payroll tax is reduced by four percentage points, which is transferred to their individual savings accounts. The authors conclude that it is far too early to make any conclusive assessment of the impact on savings, but note that the overall household savings rate in the second half of 2002 was no higher than in the first half of that year, before the reforms were introduced. The authors also argue that the extent of the tax subsidy offered for these schemes appears excessive and could well lead, ceteris paribus, to a decline in government saving that could well offset any net increase in household saving that might occur, so reducing overall national saving. Although accepting that this is subject to many uncertainties, they conclude that ‘it appears unlikely that Estonia’s switch to a funded scheme would have any major positive impact on overall saving.’ (p.19)

For Sri Lanka, Abeysinghe and Karunarathne (2005) found a significant negative effect of mandatory savings on other private savings. The authors contrast their results with earlier studies for Singapore, which generally found that the Central Provident Fund had played a major role in boosting aggregate savings in that country over the past few decades.

Lavi and Spivak (1997) used both macro and micro data to investigate possible pension saving offset effects in Israel. Using the macro approach, they find that pension fund assets had a coefficient of at least 0.5 in a time series regression model explaining national saving, suggesting that the offset effect on other forms of national saving was 50 per cent or less. Using the micro approach they looked at more than 1,100 observations from the 1979 consumer expenditure survey to determine how far pension fund saving was offset by lower levels of other private voluntary saving. After controlling for other characteristics, they found an offset effect of 50 per cent or less.

For New Zealand, Scobie and Le (2004) used data from the 2001 Household Savings Survey for single people and couples. They find that, after controlling for other potentially relevant characteristics (i.e. income, main source of income, age, gender, ethnicity, education level, geographic location, partnering status and migrant status), there was a strong statistically significant result that those who were members of workplace superannuation schemes had higher net worth, but this effect was not statistically significant for those who were members of personal pension schemes. They then go on to test directly whether there is evidence of substitution between pension and non-pension wealth and again, find no statistically significant evidence of such offset effects. In this sense, their results mirror those of US 401(k) savings effects by Venti, Wise and Poterba (1996) rather than those of Gale and Engen (1996). If anything, they find evidence of complementarity: those with more wealth in pension schemes also have higher levels of non-pension savings, although there is considerable variability in these results across the sample.
However, as the authors point out, these results are subject to two important caveats: First, they are only looking at a snapshot of wealth levels at a particular point in time, whereas a more informative test would be to look at how pension and non-pension wealth evolve over time for a panel of people who could thereby act as their own controls. Second, although they control for a wide range of observable characteristics, there may be other unobservable characteristics reflecting people’s inherent propensity to save (i.e. attitudes to risk or preferences for consumption now rather than the future) that may influence both pensions and non-pensions saving in the same direction, so biasing the results (this is also Gale and Engen’s basic critique of the Venti, Wise and Poterba studies). At the same time, Grant and Scobie point out that their results are also consistent with the hypothesis that the very fact of joining a workplace pension scheme in particular might stimulate heightened awareness of the need for saving, so boosting other forms of long-term saving as well.

### 2.5.5 Summary: savings impact of changes in mandatory and quasi-mandatory funded savings schemes

Our preliminary conclusion from this evidence is that the effect on total savings of increases in mandatory or quasi-mandatory funded schemes is likely to be less than one-for-one, but there would still be expected to be a significant net boost to total household savings over time. Savings offset effects may also be somewhat lower due to the fact that these mandatory or quasi-mandatory savings schemes apply to a broader cross-section of the population than tax-favoured voluntary savings schemes (e.g. 401k and IRA schemes in the US or PEPs and TESSAs in the UK) that tend to be focused more on higher earners. Overall, we consider it would be reasonable to assume that around, say, 30-50 per cent of any additional pension saving due to additional mandatory saving is diverted from other savings on average, but with this ratio being below 30 per cent for lower income groups but above 50 per cent for higher income groups. These conclusions are discussed further in the context of the NPSS in Chapter 3.

### 2.6 Evidence on the impact of automatic enrolment on participation rates and contribution levels

Under automatic enrolment, employees would be automatically enrolled in their company’s pension scheme unless they elected to opt out of the plan. In the US, this contrasts with the usual arrangement in which employees must actively choose to participate in their employer’s 401(k) plan.

Standard economic theory predicts that automatic enrolment should not influence the employee’s saving decision, since automatic enrolment does not change the economic fundamentals of the planning problem. However, several empirical studies in the US suggest that automatic enrolment does have significant impacts on 401(k) participation rates, contribution rates and asset allocation.
The widely cited paper by Madrian and Shea (2001) analyses the 401(k) savings behaviour of employees in a large U.S. corporation before and after automatic enrolment was introduced. Before the plan change, employees who enrolled in the 401(k) plan were required positively to elect for participation, whereas after the plan change, employees were automatically enrolled in the 401(k) plan immediately upon being hired, unless they made a negative election to opt out of the plan. Choi et al (2001) carry out a similar analysis, with similar findings.

Madrian and Shea report a 48 percentage point increase in 401(k) participation among newly hired employees and an 11 percentage point increase in participation overall 15 months after automatic enrolment was introduced. They also note that automatic enrolment has been particularly successful in increasing participation by those demographic groups which are least likely to participate in standard retirement plans, although it does not appear to have had the same equalising effect on the variation in contribution rates.

However, this success in boosting participation rates has come at a cost. The employer must choose a default contribution rate and a default money market fund in which to invest employee contributions, and Madrian and Shea show that, at least in the short term, only a small fraction of automatically enrolled 401(k) participants choose a contribution rate and/or asset allocation which differs from the company-specified default option, even though less than one per cent of employees hired before automatic enrolment picked this particular outcome corresponding with the default rate (see Figure 2.4, which shows how automatic enrolment led around 75 per cent of participants to cluster around the three per cent default contribution rate). This ‘default’ behaviour appears to result from participant inertia and from many employees taking the default as investment advice on the part of the company. Therefore, low default contribution rates and low return default funds may lower employee wealth accumulation in the long run. Good communication with those enrolled and mechanisms to increase contributions over time, as in the ‘Save More Tomorrow’ (SMarT) schemes proposed by Thaler and Benartzi (2004)\textsuperscript{23}, may be important in counteracting these potential negative effects of automatic enrolment.

Employees in the lower percentiles of the savings distribution appear to benefit from automatic enrolment because it turns non-participants into participants and hastens the participation of others. At higher percentiles in the fund balance distribution, however, ‘default’ behaviour works to the detriment of plan participants by anchoring them to lower contribution rates and lower return investment allocations (given the default was a money market fund in this case). However, it should be

\textsuperscript{23} The analysis of (SMarT) plans by Thaler and Benartzi (2004), which suggests that automatic enrolment can boost savings significantly if schemes are carefully designed, with low initial contribution rates that rise automatically over time. They found that 78 per cent of those offered a SMarT plan enrolled and relatively few dropped out as the required savings rate rose.
noted that their results also suggest that employees hired under automatic enrolment do tend to move away from the default rate over time, tending, on average, to increase their contribution rate and adopt a more aggressive investment strategy.

**Figure 2.4 Pension contribution rates with and without automatic enrolment in US case study**

These US findings are supported by recent experience with automatic enrolment in the UK. For example, since February 2003, the Building and Civil Engineering (B&CE) stakeholder scheme for construction workers has moved to a form of automatic enrolment, leading to an increase in participation by new workers from just 15 per cent to nearly 100 per cent. Informal evidence from ABI members suggests typical automatic enrolment rates of around 90 per cent (or more) for good quality schemes and surveys by the NAPF (2005) and the CBI (2006) also suggest participation rates of the order of 80 per cent or higher for good quality occupational pension schemes with automatic enrolment.

More recent DWP-sponsored research by Horack and Wood (2005) uses case studies to explore the impact of automatic enrolment and other scheme joining techniques for workplace pensions with an employer contribution. They find that automatic enrolment has been successful in boosting participation rates. In the first case study, of a motor manufacturer with around 1,000 eligible employees, the participation rate in a stakeholder pension scheme rose from 25 per cent to 58 per cent following the introduction of automatic enrolment with default contribution rates of five per cent for employees that could be varied (subject to a one per cent
minimum) and a matching contribution from the employer that was set two per cent higher than the employee rate.

A second case study, for a medium-sized financial services company, saw participation rates in a stakeholder scheme with a ten per cent employer contribution (but an equivalent cash alternative for non-joiners) rise from 45 per cent to 62 per cent after automatic enrolment. The other two case studies saw already high participation rates of 86 per cent and 88 per cent rise to 92 per cent and 100 per cent respectively for a healthcare and a construction company, both of which offered stakeholder schemes. In summary, automatic enrolment does seem to be a powerful tool for boosting pension participation rates where there is a reasonable employer contribution on offer as well.

But this study also revealed that a significant number of companies approached had decided not to go down the automatic enrolment route due to a combination of fears that automatic enrolment might increase employer contribution and administration costs, infringe employee autonomy and so cause negative reactions, and/or possibly result in inappropriate enrolment for some employees. The potential impact of higher participation under automatic enrolment on employer pension contribution costs might be expected to be of particular significance for small and medium-sized employers24.

2.7 Summary of key findings from research review

This research review has highlighted many uncertainties and conflicting results across studies, but the following broad conclusions can be drawn:

First, the message from a number of macroeconomic studies is that introducing a new form of funded pension scheme may well be associated, to a significant degree, with offsetting reductions in other savings.

Second, while earlier studies of voluntary tax-favoured savings schemes in the US pointed to significant net increases in household savings as a result, a number of more recent studies have thrown doubt on these findings and suggested high offset levels, possibly close to 100 per cent for higher earners. For low to middle earners, however, the evidence points to lower (but still positive) offset effects. The UK evidence is patchier, but consistent with high offset effects for TESSAs and PEPs.

Third, evidence on the effect of changes to mandatory or quasi-mandatory funded savings schemes also suggests some offset effects, but probably to a lesser degree. For Australian compulsion, for example, a 40 per cent offset effect would seem a reasonable central estimate, although this is subject to considerable uncertainty and there is a broad range of results for other countries. Unfortunately, there have been

24 Byrne et al. (2005) discuss how small and medium-sized employers in the UK typically approach pension decisions.
few if any studies that have broken down these results by income group, although a priori arguments would suggest that offset effects would be higher for higher income groups with greater stocks of other assets to switch into mandatory schemes.

Fourth, evidence of matching contribution schemes in the US, the UK and Australia suggest that these may be more effective at generating a savings response than standard tax relief, especially if they are simple, effectively communicated and supported by employers and/or pension providers. There is also less evidence of offsetting reduction in other savings for these matching schemes, which is consistent with the fact that they are targeted on lower earners with few other savings.

Fifth, there is strong evidence from both the US and the UK, consistent with recent advances in behavioural economics, to suggest that automatic enrolment should boost participation rates in pension schemes. There is much less evidence on the effect of default rates adopted in automatic enrolment schemes on contribution levels.

Having reviewed the available UK and international research on these issues, we now turn to consideration of how these findings can be applied to the particular case of the NPSS.
3 Implications of research findings for assessment of the impact of the proposed National Pension Savings Scheme on total household savings

The findings of the research review presented above are quite diverse and considerable care is needed in making use of these results in assessing the National Pension Savings Scheme (NPSS) (or alternative personal account schemes with automatic enrolment), given that there are no very close parallels with the NPSS in past UK or international experience. To address this issue, we therefore need to:

• review the likely characteristics of participants in the NPSS; and

• assess how their behaviour is likely to be influenced by the detailed design features of the NPSS (as opposed to voluntary saving schemes without automatic enrolment and mandatory schemes, which are the types of schemes for which international evidence is available on offset effects).

These two issues are discussed in turn in Sections 3.1 and 3.2. Section 3.3 concludes.

3.1 Characteristics of likely participants in the National Pension Savings Scheme

The target population for the NPSS consists of lower and middle earners with relatively low average levels of other savings, compared to those with good pensions. They are also likely to work in smaller businesses on average than those with good pensions. However, this may be offset, to some degree, by the fact that
those people most likely to choose to opt out of the NPSS (i.e. the young, those struggling with debts and the self-employed) may tend to be those in lower income and wealth categories\textsuperscript{25}.

On the assumption that the opting out process mitigates but does not entirely eliminate the key relative characteristics of the target group, it seems likely that NPSS participants will still be those with relatively low income, savings and wealth levels. As such, many will face constraints on their ability to offset NPSS contributions by reducing other savings. NPSS contributions (net of tax relief) would be around £600 per annum, or around £50 per month, for a fairly average member of the eligible group earning £20,000 per annum (assuming employee net contributions are four per cent on income above £5,000 as proposed by the Pensions Commission). Some of the target group will not be saving at all prior to the introduction of the NPSS, so unless they run down earlier stocks of savings (which is possible of course), offset effects for them should be small. For those who are saving now, offset effects are potentially larger, but many may not be saving enough now to offset the full effect of likely NPSS contribution levels.

3.2 Assessment of how behavioural responses to the National Pension Savings Scheme might vary depending on its detailed design features

There is considerable research in the behavioural economics and psychology literature indicating that behaviour can be very sensitive to the precise way in which choices are framed. Broadly speaking, most people operate in an everyday ‘coping’ mode driven by habit, custom and routine and they only start making detailed analytical assessments and judgements if something happens that shocks them out of this comfortable everyday coping mode. Barring such shocks, behaviour tends to show a high degree of inertia.

The NPSS model proposed by the Pensions Commission is designed to overcome as well as exploit this inertia effect by minimising the extent to which active choices are required in order to participate in the NPSS. This is linked to a further insight from the behavioural economics and psychology literature that, when forced to make active choices on long-term savings, most people display a relatively high degree of myopia (as reflected in hyperbolic discounting models, though there could be other reasons for this to do with constrained rationality given the cost of information and calculation) and tend to take decisions that, from the perspective of their older selves, may appear highly sub-optimal. In other words, they typically do not save enough. In the present context, prompting such an active choice might either cause

\textsuperscript{25} There could be an offsetting effect, however, to the extent that lower income groups are less financially aware and so less likely to make an active decision, in which case they would be automatically opted into the NPSS. The balance of these effects remains uncertain.
people to opt out of the NPSS or cause them to shift savings from other accounts into the NPSS, rather than increasing total savings.

The NPSS model proposed by the Pensions Commission is designed to minimise such potential opt out or offset rates through the following design features:

• automatic enrolment, with an active choice required to opt out;

• your NPSS account follows you across jobs, so there is no active decision required to re-enrol at this stage;

• if you do not enrol initially, then you are automatically enrolled after, say, another five years unless you again actively choose to opt out at this stage.

All of these procedures, which can probably only realistically be applied to employees rather than the self-employed, should tend to reduce opt out rates. But it also seems plausible to expect them to reduce offset rates for those who do not opt out, because there is no active decision required from this group that might prompt a wider consideration of their financial circumstances and a corresponding offsetting reduction in their other savings.

These conclusions might not apply so strongly in relation to those deciding whether or not to participate in the NPSS initially, since the introduction of such a major new national scheme is likely to attract considerable publicity and people may be much more likely to make an active decision, either to opt out or to opt in but offset, at that stage than in later years when the initial publicity has faded.

The experience with the introduction of individual Premium Pension accounts in Sweden in 1998 offers some indirect parallels here in the sense that initially, 68 per cent of new participants (including 60 per cent of those aged under 30 who might have been expected to be less interested in retirement planning than older workers) made an active investment choice, whereas in subsequent elections only around 10-15 per cent of new participants typically made an active choice. This may partly reflect the lower costs of the default fund and also the generally less negative returns on the default fund relative to the average fund following the equity price falls of the early-2000s, but it is also consistent with the view that active choice is unlikely in such circumstances without a lot of marketing push from the selling side. This is certainly consistent with the conventional wisdom in the UK pensions and life insurance industry that pensions are sold not bought, and the generally modest impacts on savings seen from just providing more information to people in the pensions area.


27 The DWP-sponsored research project by Leston and Watmough (2005) suggests that providing additional information to employees does not necessarily lead to a significant increase in retirement saving. This study was restricted to companies providing little or no employer contribution, but this does match the NPSS target group.
These considerations are much less applicable to the self-employed, who as we understand it would need to opt in actively to the NPSS. In their case, those who opt in are likely to be those who already give importance to retirement provision and who will tend as a result to have already built up some such provision through personal pensions or other long-term savings vehicles. In these cases, offset rates may be relatively high (after controlling for other factors such as income levels) compared to those for comparable employees.

Putting aside the issue of the self-employed, how might we expect offset rates for the employed automatically into the NPSS to compare with the offset rates from the literature review above for either voluntary schemes without automatic enrolment (e.g. US 401k and IRA schemes, or UK PEPs, TESSAs and ISAs) or mandatory schemes (e.g. as in Australia)?

In relation to voluntary schemes, the evidence is decidedly mixed as discussed in Section 2.3. Many of the US and UK studies do point to high offset rates, perhaps close to 100 per cent in some cases, particularly for higher income groups. Such groups are, however, likely to be making active decisions to switch money into tax-favoured voluntary schemes, whereas most NPSS participants will not be making such active decisions, so one might expect offset effects to be significantly lower than 100 per cent if the behavioural arguments above are accepted.

In relation to mandatory schemes, the evidence is also mixed, with a 40 per cent offset effect being the central estimate of the most up-to-date and rigorous Australian study (Connolly and Kohler, 2004), but with other estimates ranging from around 25-75 per cent and the most plausible range being perhaps around 30-50 per cent, which also seems broadly consistent with the wider research evidence reviewed in this report. For other countries, there is certainly evidence of some offset effects with mandatory or quasi-mandatory schemes, though again with a broad range of estimates of the scale of such effects. To the extent that participants can, by definition, not opt out of mandatory schemes, it is more difficult to predict clear behavioural differences from the NPSS here. However, the Australian schemes are distinct to the extent that compulsion is only on the employer side, so any offsetting that goes on by the individual is less direct: if their employer is saving on their behalf (and probably to a large extent through paying lower wages), then there is less perceived need for the individual to do so. The offset effect might be higher for individual contributions to the NPSS than for the employer match, though there is limited hard evidence to quantify this difference. But we would expect, based on the Australian results, to see some offset for both categories of contributions.

Assuming this is the case, opt in rates for the self-employed will depend to a significant degree on the profile and effectiveness of the advertising for the launch of the NPSS.
3.3 Conclusions

The discussion in Sections 3.1 and 3.2 has identified a wide range of results from the literature review in Chapter 2 and some broad indications as to how these results might translate to the NPSS context.

The results certainly point to some savings offset effect being associated with the introduction of the NPSS, although they also suggest that this is likely to be less marked for lower income groups than for higher income groups, which is relevant given the primary focus of the NPSS on low to middle earners. The offset effect might also be less for the employer match than for individual contributions, and greater in respect of other pension savings than non-pension savings. But the evidence on these various effects is not conclusive and there is clearly a significant degree of unresolvable uncertainty surrounding the likely net impact of the NPSS on household savings.

Such uncertainties would remain even in an ex-post study of the relationship between NPSS contributions and total household savings given the many other variables that could influence the latter, but are particularly great in an ex-ante study where there are no very close precedents for the NPSS either in the UK or internationally. Additional uncertainty arises from the fact that the behavioural response to the NPSS may be sensitive to the fine details of its design, as well as to the profile and effectiveness of the advertising of its launch. Employer attitudes will also be important, but are difficult to assess with any precision.
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