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What should be the balance between state and private pensions?

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Shaping a stable pensions solution
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What should be the balance between state and private pensions?

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Introduction

Pension policy is at a critical juncture. Previous PPI research has shown that there is consensus on the UK's pensions problems and that reform of the state pension system is needed. Yet Government was preoccupied with private pension provision until *Principles of Reform*, published in February 2005, set out the Government's commitment to seeking a consensus for reform. The pensions community wants a simple and sustainable solution.

The aim of *Shaping a stable pensions solution* is to build up a picture of the possible shape of a consensus pension solution that could work for the long-term, through a series of seminars to debate the most critical pension issues on the interaction of state and private pensions. Expert individuals from a wide range of backgrounds, and who between them have a variety of perspectives, will be able make an important contribution to the debate.

Each seminar will examine a critical and topical pension policy question. This paper ***What should be the balance between state and private pensions?*** is the first issue to be considered.

What should be the balance between state and private pensions?
60% of pension income currently comes from the state. The Government has set a target to reduce this to 40% by 2050. But there has been little analysis as to whether this shift in the balance is appropriate or possible.

This PPI paper will look at:
- The macro-economic background behind setting the target.
- How individuals would have to behave to achieve the target.
- The differences between state and private pension provision.

A companion paper by Chris Dobson, Lead analyst for the Secretariat to the Pensions Commission will look at macro-economic issues around the "40:60".

Subsequent seminars will tackle other major issues such as:
- How does the interaction of state and private pensions affect incentives to work and save?
- Should state pensions be universal or contributory?
- Should earnings-linked pensions be voluntary or compulsory?
- What should be the role of means-testing in state pensions?

Feedback from the papers presented at each seminar, and each seminar discussion will be consolidated into a report to be published in 2006. The report will contribute new facts, analysis and insights to the public debate highlighting where consensus lies and where and why the areas of disagreement exist.

Summary of conclusions

The Government has a long-term target of switching pension provision from 60% state and 40% private to 40% state and 60% private.

The distinction between 'state' and 'private' in the target refers to the delivery of the pension, rather than how the pension is paid for. On other potentially relevant definitions, the proportion covered by the state is more like 70%.

Macro-economic analysis suggests that the "40:60" target is unlikely to be met because:

- Future state spending has increased.
- Income from private sources is not expected to increase as significantly as it would need to.

Micro-economic analysis, analysing the likely state and private pension outcomes for illustrative individuals, further suggests that the "40:60" target looks achievable for only a small segment of the population:

- Given the level of state pension, fewer than half of women and around half of men could ever achieve a 40:60 ratio in favour of private provision, even assuming they save enough to reach target replacement rates.
- But actual saving patterns suggest that people would save less than required to meet this condition, so that in practice even fewer would reach the "40:60" goal.

This paper develops the argument that the 'right' balance between state and private pension provision depends more on structural social policy issues at the level of the individual than macro-economic considerations.

This view is developed as follows:

1. The total resources available to the retired population are likely to be similar under different mixes of state or private pension provision.
2. The investment return potential of private pension saving does not always boost ultimate pension income.
3. Individual ownership may be more important in growing the resources available in the economy than whether a pension is funded or unfunded.
4. Flexibility in private pension savings increases the variability of pension outcomes for individuals.
5. Although most people agree that both state and private pension provision should be strong, there is no consensus on how state and private pensions should mix.

This argument provides support for the "40:60" measure being used as an interesting indicator of outcomes over time, but not for the setting of a target outcome.

Chapter 1: Why "40:60" and what does it mean?

This chapter explains the Government's long-term target of switching pension provision from 60% state and 40% private to 40% state and 60% private.

The distinction between 'state' and 'private' in the target refers to the delivery of the pension, rather than how the pension is paid for. On other potentially relevant definitions, the proportion covered by the state is more like 70%.

This chapter also shows, using macro-economic analysis, that the "40:60" target is unlikely to be met because:

- Future state spending has increased.
- Income from private sources is not expected to increase as significantly as it would need to.

The Government has a long-term target of switching from state to private pension provision

In December 1998 the Government announced a target of switching the proportion of pension income from 60% state and 40% private to 40% state and 60% private:

Currently, about 60 per cent of pension income is accounted for by the State and 40 per cent by the private sector. As a result of the reforms set out in this Green Paper, the State's share is expected to fall to around 40 per cent by 2050[1].

This has subsequently been adopted as a Public Service Agreement (PSA) Target - the specific targets that must be met in return for the resources provided through the Government's Spending Review[2]. It therefore remains an important item in the objectives of the Department for Work and Pensions (DWP).

The PSA Target sets a timescale for the change – *50 years' time* - with an intermediate target of moving to a 50:50 share of provision from state and private sources by 2025[3].

The switch from the state to private provision was stated as allowing the Government to *meet the demographic challenge of much higher numbers of pensioners whilst delivering a decent income in retirement for everyone and maintaining public expenditure at prudent levels*[4].

[1] DSS (1998) page 31
[2] DWP (2004 DR)
[3] DWP (2004 DR)
[4] DSS (1998) page 32

Other than this statement, no analysis was published as to whether a shift from state to private provision would be desirable (in macro-economic, micro-economic or social policy terms), or why private provision is preferable. Full privatisation and full state provision were ruled out in 1998, but there was no examination of the correct balance between them[5].

What counts as state provision and what counts as private provision?
The definitions used by the DWP in the "60:40" ratio calculation are:

- **Pension income from the state** includes all pension and benefits delivered by the state to older people[6]: retirement pensions, disability benefits and income related benefits such as Pension Credit.
- **Pension income from private pensions** includes occupational, personal pension and investment income, the latter including income from annuities, property, stocks and shares and savings[7].

Under this definition, the proportion of pension income derived from the state in 2002/3 was 57%. The balance has not changed in recent years. (Table 1).

Table 1: Proportion of pension income coming from state and private sources[8]

	State	Private
1996/7	58%	42%
1997/8	57%	43%
1998/9	56%	44%
1999/2000	57%	43%
2000/1	55%	45%
2001/2	57%	43%
2002/3	57%	43%
Target	**40%**	**60%**

[5] DSS (1998) page 30
[6] In this context people over state pension age
[7] Although this includes non pension saving, this paper continues to refer to this total private provision as 'private pension income', for brevity
[8] PQ Mr David Willetts 21 June 2004, House of Commons *Hansard* Column 1262W

Any change in the mix of state and private income is likely to be gradual over a long period or time, because[9]:

- Although each successive cohort of people reaching retirement are, on average, likely to have a higher proportion of their income from private sources (at least in the short-medium term)…
- …once they retire the proportion they receive from the state is likely to increase, as private pension income grows more slowly than state pension income when in payment (private pensions are flat or at best indexed to prices; state pension income is at worst indexed to prices, and elements such as Pension Credit tend to be indexed to earnings), and,
- Increases in life expectancy will increase the number of the 'oldest old' pensioners, who have lived longer than they expected to have to provide for, and are most reliant on the state for pension income.

The official definition used in the "60:40" calculation refers to whether the pension income is **delivered** by the state or the private sector. It is not:

- Referring to how much of the total pension provision the state (that is, the taxpayer) actually pays for, or,
- Comparing the extent of funded versus unfunded provision.

On alternative definitions of the ratio, it could be said that up to 70% of pension provision is paid for by the state (Chart 1). For example:

- Most **public sector pensions** are unfunded, and paid for out of current taxation, but are treated in the "60:40" calculation as private pension income. The cost of public sector pension schemes is projected to increase from 1.5% of GDP today to 2.3% of GDP by 2050[10]. Just over half of this cost (0.8% of GDP) is paid to people over state pension age[11]. Including this amount as state provision rather than private provision would increase the proportion of pensioners' incomes that is derived from the state today to around 66%.
- **Contracted-out pensions** are paid for by contracted-out rebates paid by the Government to private pension schemes, and/or by National Insurance Contributions (NICs) that have been re-directed from the state to private pensions. They are therefore paid for by the state[12], but are 'delivered' as private pension income. Contracted-out rebates and reduced NICs account for one-fifth of current contributions to private pension schemes[13]. Even if only 10%[14] of current private sector pensions in payment were derived from contracted-out rebates, the

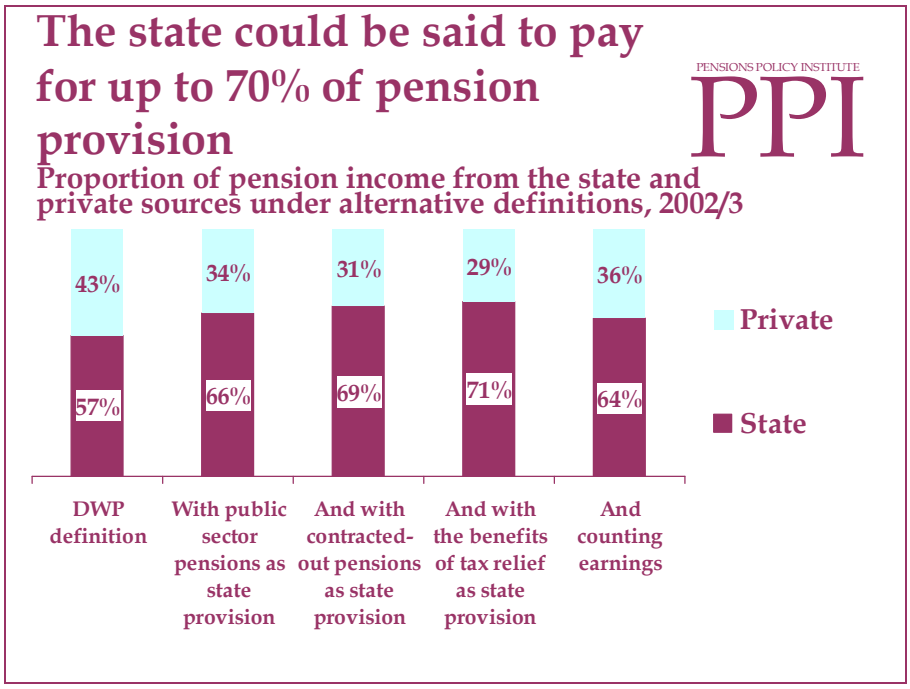
[9] Curry and O'Connell (2003)
[10] HMT (2004)
[11] Pensions Commission (2004) page 17
[12] That is, paid for by reduced National Insurance contributions that would otherwise have been collected
[13] PPI calculation
[14] The amount may be less than the 20% of contributions as some pensions in payment will relate to pension contributions made before contracting-out was introduced in 1978. 10% is used as a conservative illustrative figure.

proportion of pensioners' incomes that is derived from the state today increases to 69%.

- **Contributions to private pensions attract tax relief**, which is paid for by the state. Another one-fifth of contributions to private pensions comes from tax relief[15]. Although tax is then paid on the private pension when it comes into payment, not all of the relief is 'paid back', as part of the pension can be taken as a tax free lump sum, and the rate of tax paid on the pension in payment can be lower than the rate of tax relief given. If a further 10%[16] of current private sector pensions in payment were derived from tax relief, the proportion of pensioners' incomes that is derived from the state today increases to 71%.

Some pensioners also receive income from other sources that are not included at all in the definition of private pension income, for example earnings. Including earnings reduces the proportion of pensioners' incomes paid for by the state to 64% (Chart 1).

Chart 1[17]



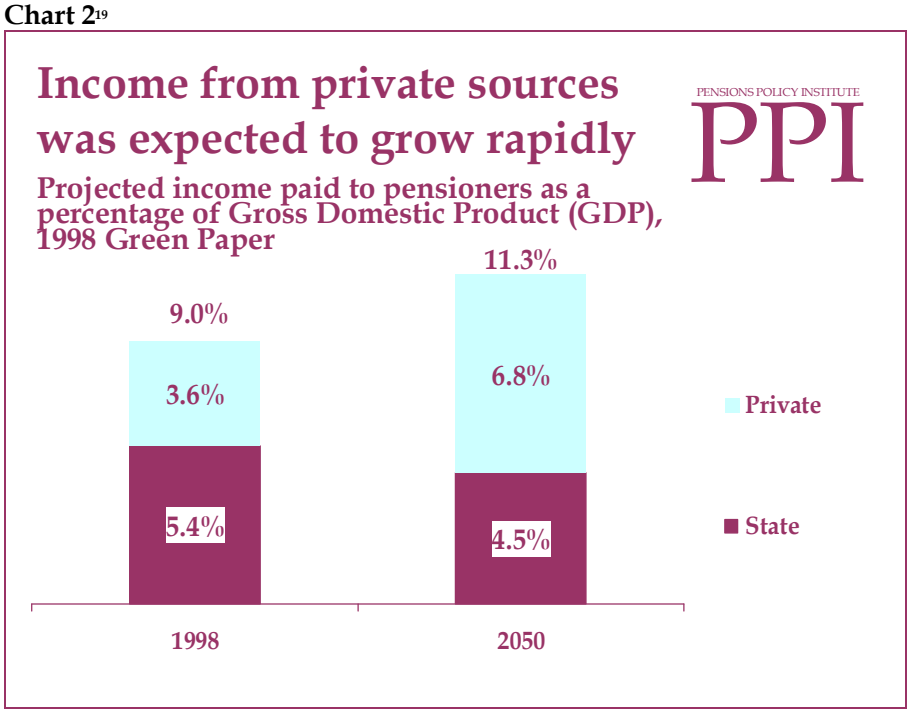
[15] PPI calculation, covering occupational and personal pension provision
[16] The tax free lump sum alone gives a tax advantage worth around 7% for a basic rate tax payer and 17% for a higher rate taxpayer – Curry and O'Connell (2004).
[17] PPI calculations based on data from DWP (2004 PI) and Pensions Commission (2004) page 17

The shift from 60:40 to 40:60 is not likely to happen
A shift in pension provision from 60:40 state:private to 40:60 was the projected outcome of the state pension policy reforms announced in 1998.

Public spending on pensions will decline as a share of GDP, from 5.4 per cent today to 4.5 per cent in 2050. By 2050, the proportion of pensioner incomes coming from the State, now 60 per cent, will have fallen to 40 per cent, and the proportion coming from private pension provision will have increased from 40 to 60 per cent[18].

In order for it to be true that the decreased state budget on pensions would represent 40% of the total by 2050, income from private sources would need to increase to 6.8% of GDP by 2050 from its level of 3.6% of GDP in 1998. This implies that the total income to people over state pension age would increase from 9.0% of GDP in 1998 to 11.3% of GDP in 2050 (Chart 2).

Chart 2[19]



[18] DSS (1998)
[19] PPI calculations based on DSS (1998) page 8

The implied switch to a 40:60 ratio of state to private pension income is unlikely to happen (without a change in the pension system in the meantime) for two reasons:

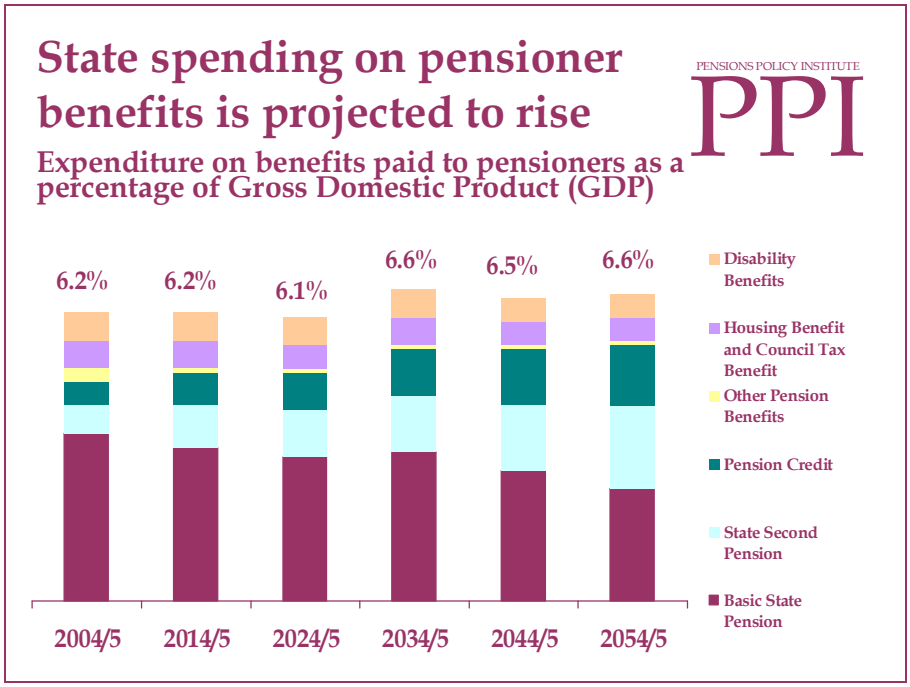
- Current projections of state pension expenditure are significantly higher than 1998 projections, and,
- Current projections of income from private sources are significantly lower than 1998 expectations.

Higher projected state pension expenditure

In October 2003, the Pension Credit was introduced. This increased future state spending on pensions. Projections of state spending have also been increased by more up-to-date demographic assumptions, which have increased the projected number of pensioners in future.

The most recent projections of state spending on pension income[20], as used in the DWP definition, shows expenditure increasing from 6.2% of GDP today to 6.6% of GDP by 2054 (Chart 3).

Chart 3[21]



[20] Basic State Pension, SERPS/S2P, Pension Credit and other state pensions such as Winter Fuel payments and Age additions

[21] DWP long-term estimates – www.dwp.gov.uk/asd/asd4/expenditure.asp. Disability Benefits are Attendance Allowance and Disability Living Allowance. Other Pension Benefits include Winter Fuel Payments, Over 75s TV Licences and Christmas Bonus. There is a high degree of uncertainty surrounding these estimates, and in particular the future cost of Pension Credit. The cost of Pension Credit could be higher than projected if take-up increases above the levels seen today, or the income taken in to account for the Pension Credit does not keep pace with the growth in average earnings. Chart 3 may therefore underestimate the future amount of state pension income – see NAPF (2004) and PPI Briefing Note 16 *State spending on pensions: an update* for further information.

Given this level of state spending, then in order for the balance of provision to shift to "40:60" by 2054:

- Total pension income would need to increase to 16.5% of GDP[22], and,
- 9.9% of GDP[23] would need to come from private sources.

Lower projected income from private sources

If the total income from the state is projected to increase in future, then income from private sources needs to grow faster than was projected in 1998 for the 40:60 shift to happen. In fact, more recent analysis suggest that less income will come from private sources in future than was expected in 1998[24].

When the target was set, the amount provided by private pensions was projected to increase based on the levels of pension saving seen in 1998 continuing. Further increases were expected *as stakeholder pension schemes [became] established and occupational pension schemes [were] strengthened and supported*[25].

Since 1998, the outlook for private pension provision has changed. New data suggests that contributions to private pensions are not as high as had been previously thought[26]. Projected increases in longevity and reductions in the long-term rate of return have reduced the expected income derived from contributions. Occupational pension provision is declining[27].

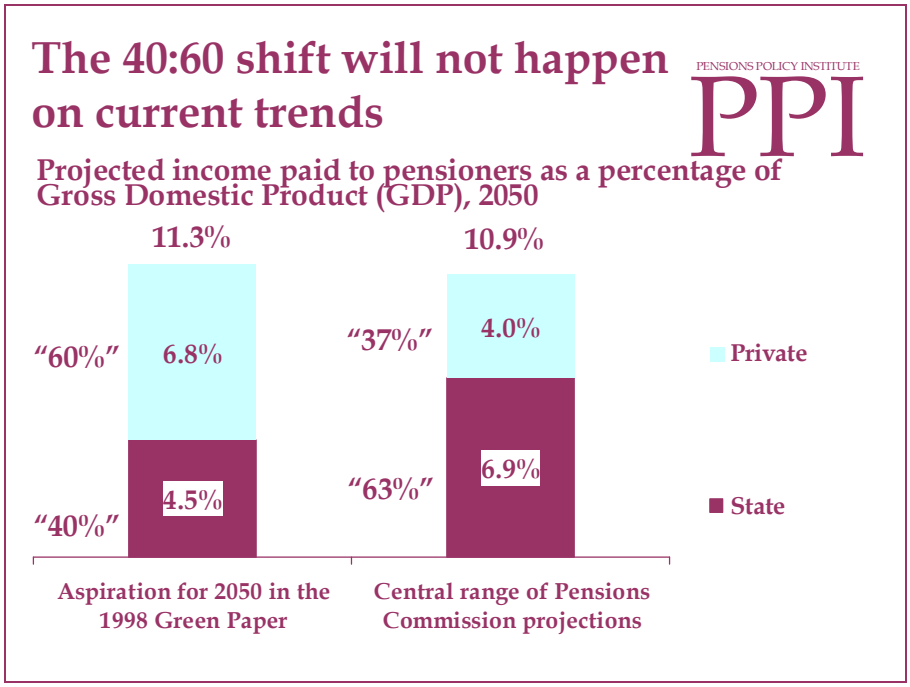
Recent estimates of likely levels of private pension income in 2050 suggest that income from private pension sources are unlikely to grow enough to meet the "40:60" target:

- The central estimates used by the Pensions Commission allow for a continued shift from Defined Benefit to Defined Contribution provision and a fall in pension saving. These projections suggest that income from private pensions in 2050 will be similar to the levels seen today, at around 4.0% of GDP[28].

[22] As 6.6% / 40% = 16.5%
[23] As 16.5% - 6.6% = 9.9%
[24] See for example Curry and O'Connell (2003), Hawksworth (2003) and Pensions Commission (2004)
[25] DSS (1998) page 31
[26] Forrest et al (2004)
[27] Curry and O'Connell (2003), Pensions Commission (2004)
[28] Pensions Commission (2004) page 17 central point of the range for private pension income in 2050 from 2.9% to 5.0% (including 0.8% of GDP from unfunded public sector pension schemes). This is based on private pension contributions falling from 3.8% of GDP today to 2.9% of GDP by 2030, and a real rate of investment return of 3% - 4%. See the companion paper for this seminar, Appendix B of the Pensions Commission's First Report.

- In this scenario, total pension income in 2050 is projected to be lower than forecast in 1998 (10.9% of GDP (4.0% + 6.9%[29]) compared to 11.3% projected in the 1998 Green Paper) although still higher than it was in 1998 (9.0% of GDP) (Chart 4). The projected increase is around one-fifth of what it needs to be to maintain relative income levels for each person over state pension age, given an increase in the number of pensioners of one-half in that time period.
- The proportion of income from private sources in this scenario is projected to be 37% of the total, so retreating from the 60% expected under the "40:60" rule (and lower than the current 43% (Table 1)).

Chart 4[30]



[29] In all of the estimates of total pension income, state spending on pension is assumed to be constant. In fact, state spending on pensions, and on Pension Credit in particular, is dependant on the level of income from private pensions. There are good reasons for thinking that if private pension income is at the level projected in the Pensions Commission central assumptions state spending on pensions could be considerably higher. This impact was not estimated by the Pensions Commission (see PPI (2005) pages 14-15 for further information).

[30] PPI calculations based on DSS (1998) and Pensions Commission (2004) page 17. The Pensions Commission figures do not include the latest DWP estimates of future levels of states spending on pensions (published February 2005), which are likely to be inconsistent with the Pensions Commission estimates for income from private sources. Income from private sources based on the central point of the range specified by the Pensions Commission (page 17).

- The most optimistic scenario envisaged by the Pensions Commission, assuming that pension saving would continue at broadly the same level as it is today[31], results in private pension income in 2050 of 7.9% of GDP[32]. This means income from private sources would make up 53% of the total.
- More recent projections highlight the fact that the "40:60" shift is unlikely to be achieved by 2050[33]. Even on the most optimistic scenario modelled[34], still only 57% of pension income in 2050 would come from private pension sources.

There may be other sources of private income that are not included here that help tip the balance more towards private income. However, income from these sources would need to almost treble to make enough difference to take private income to 60% of the total[35]. For example:

- Income from non-pension saving currently accounts for 10% of pensioners' incomes[36]. This could increase in future. One possible source of growth is equity release from housing, though the potential should not be over-estimated[37].
- People may work to older ages than they do currently. Earnings currently account for a further 10% of pensioners incomes[38].

In summary, while there may be some increase in the proportion of retirement income coming from private sources, it seems unlikely to make it all the way to "40:60".

Overall picture

This macro-economic picture suggests that it is extremely unlikely that the switch from "40:60" to "60:40" can be achieved. If anything, it appears that the relative proportion of state pension income is increasing (even on the definition used in the target figure which is least 'generous' to state provision).

The next chapter moves from the macro to the micro perspective, and investigates which individuals could be expected to achieve 60% of their pension income from private sources.

[31] Assuming pension contributions worth 4% of GDP, compared to the current level of 3.8% of GDP, in effect assuming no further reductions in pension contributions arise from the DB – DC shift. This projection also assumes that all pensions are paid to people over state pension age and real long-term returns of 5% a year, compared to the central range of 3% - 4%.

[32] Including 0.8% of GDP from unfunded public sector pensions

[33] PWC (2005)

[34] Where public sector pension schemes provide almost twice as much income as assumed in the Pensions Commission projections (based on new projections), private pension contributions increase to 5% of GDP per year, all private pension are paid to people over state pension age and the real rate of return is 5% a year

[35] PPI calculation

[36] PPI calculation based on DWP (2004 PI)

[37] Curry (2004), Pensions Commission (2004) page 171

[38] PPI calculation based on DWP (2004 PI)

Chapter 2: How much would individuals need to save to meet the "40:60" target?

The previous chapter cast doubt on whether the "40:60" switch could be achieved from a macro-economic perspective. This chapter investigates whether it looks feasible at the level of individuals.

By analysing the likely state and private pension outcomes for illustrative individuals, the "40:60" target looks achievable for only a small segment of the population:

- Given the level of state pension, fewer than half of women and around half of men could ever achieve a 40:60 ratio in favour of private provision, even assuming they save enough to reach target replacement rates.
- But actual saving patterns suggest that people would save less than required to meet this condition, so that in practice even fewer would reach the "40:60" goal.

The approach used

The calculations in this chapter project possible pension income for illustrative individuals reaching state pension age in 2053, to investigate the likely state/private mix of that income. See Box 1 and Appendix for details of the calculation.

Box 1: Summary of micro-economic modelling method

There are 3 elements in the calculation of the ratio of state to private pension income:

- **State pension income** can be calculated for illustrative individuals by making assumptions about the characteristics of those individuals (for example, about gender, future earnings levels, contracted-in or-out status) and assuming that the current state pension system continues as planned. This paper analyses male and female individuals at different points of the respective earnings distributions.
- **Total income** desired at state pension age has been taken to be the 'benchmark' Target Replacement Rates (TRRs) assumed by the Pensions Commission[39].
- **Private pension income** can then be identified as the amount needed to reach the TRR, on top of the state pension expected. The savings rate (contributions made as a % of salary) needed to achieve that level of pension income can be calculated making assumptions about the investment return on contributions[40].

[39] Pensions Commission (2004) page 143. These are based on current actual replacement rates, rather than a specific definition of adequacy.

[40] Non-pension saving can also be counted as part of private pension income adjusting for different tax regimes

Fewer than half could achieve "40:60"

Even assuming that the individuals do save enough privately to reach their target replacement rate, the "40:60" state:private ratio is achieved at age 65 for fewer than half of fully contracted-in women, and around half of contracted-in men (Chart 5 and 6)[41].

- For low earners, the state provides a high replacement rate, through a combination of Basic State Pension (BSP), State Second Pension (S2P) and Pension Credit (if claimed). As women earn less than men, the importance of the state pension goes further up the income scale for women: the state provides 90% of total income for the lower-earning 30% of women, but for fewer than 10% of men.
- For high earners, the state will provide less, but is still significant for many: over 20% of total income for the higher-earning 20% of both men and women.
- As these individuals age, state pension income becomes a more important part of the total. This is because of the different indexation of private and state pension. This analysis assumes that any private pension income is level; it therefore exaggerates the trend towards the state compared to a price-linked private pension[42].

Taking an overall view across gender, income distribution and age, it can be seen that for most contracted-in men and women, the ratio 40:60 could not be achieved: there would be more than 40% of total income coming from the state in most cases.

Contracting-out makes some difference, assuming contracted-out pension is counted as 'private' income (see Chapter 1 for a discussion of different definitions of the 40:60 ratio). However, the amount of contracted-out income is a small proportion of the total (for people at mid-high earnings levels), so the overall picture is not too much changed (Charts 7 and 8)[43]:

- Just under half of contracted-out women still could not achieve 60% of total pension income from private sources.
- The "40:60" could be achieved by over 70% of contracted-out men.
- The greatest increase in private income is at lower earnings levels, as by 2053 S2P is relatively generous to lower earners.
- At higher earnings levels, S2P is a small percentage of total income (5% for the highest-earning decile of men) so contracting-out is of much less importance[44].
- Just less than half of working–age people are contracted-out currently, but that proportion is expected to fall to around one-third[45].

[41] A similar picture is seen for couples. Versions of the Charts produced in this Chapter based on illustrative couples are available on request.
[42] Over 80% of annuities purchased by individuals are level, Stark (2002)
[43] This analysis assumes that individuals contract-out at age 40 (to coincide with starting pension saving) and contract back in at age 55, when contracting-out rebates appear less attractive
[44] For people reaching age 65 in earlier years, the full S2P reform will not have worked through. This means that that people in lower earnings deciles would have a slightly lower proportion of state income than people aged 65 in 2053; and people with higher earnings a slightly higher proportion of state income.
[45] GAD (2004)

Chart 5[46]

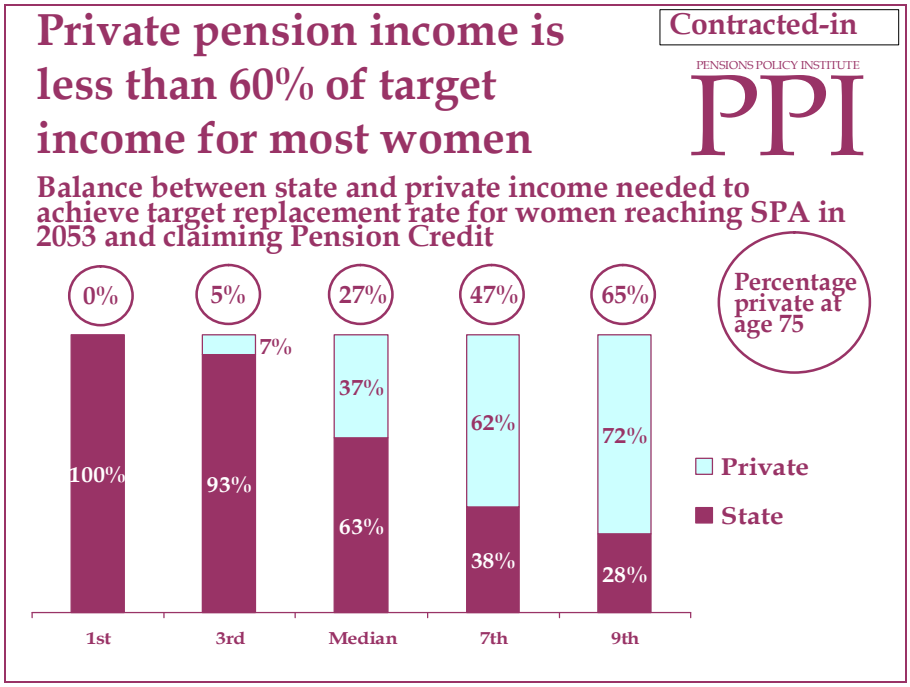
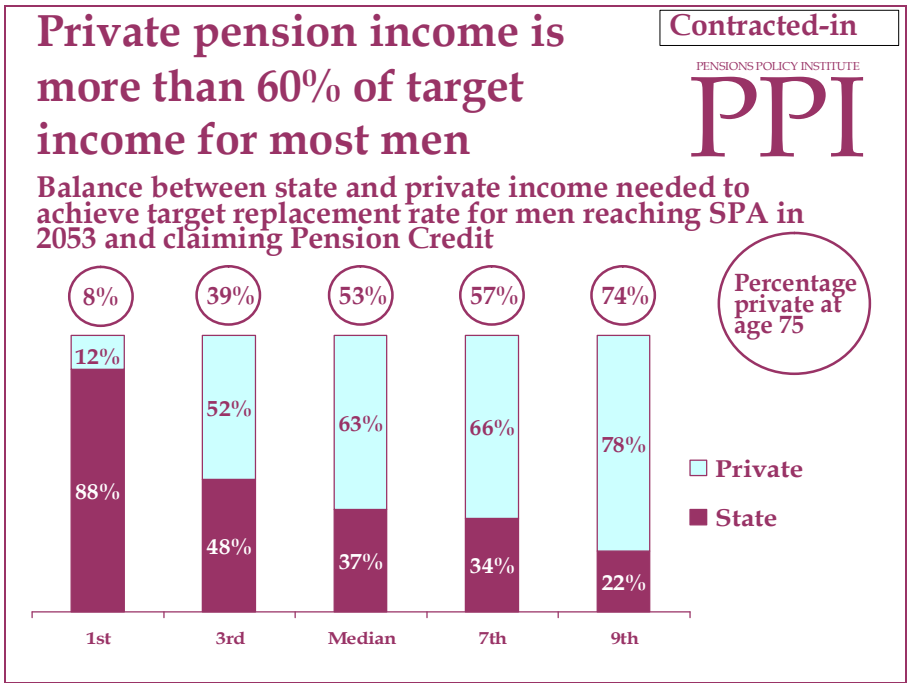


Chart 6[47]



[46] PPI analysis
[47] PPI analysis

Chart 7[48]

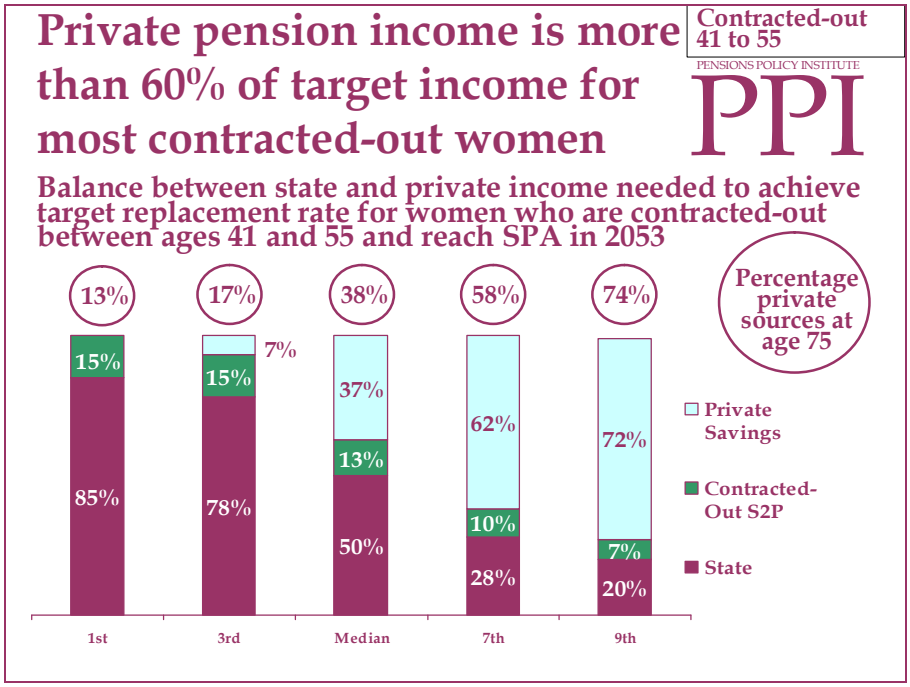
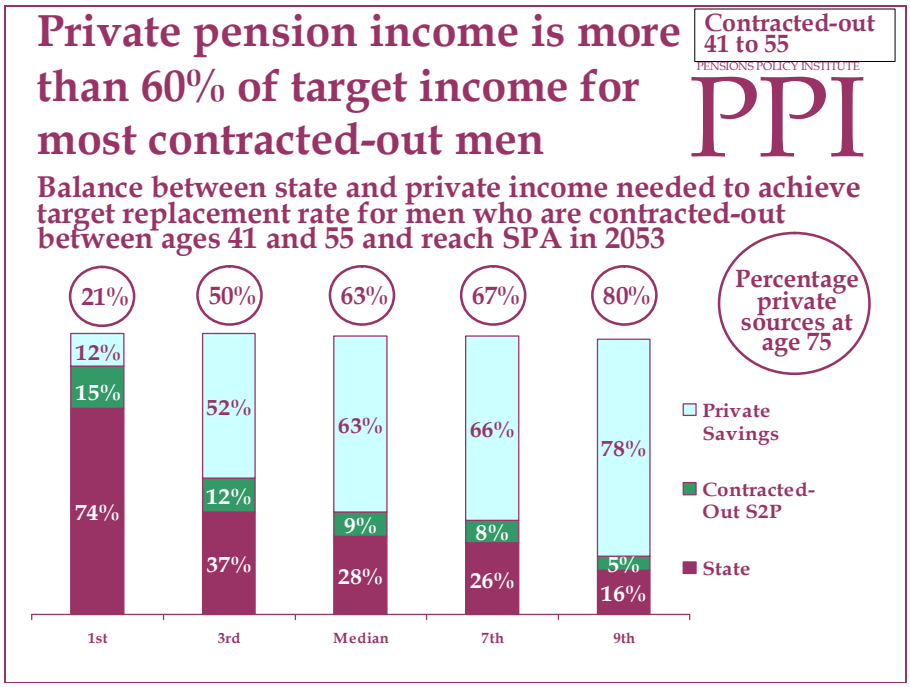


Chart 8[49]



[48] PPI analysis
[49] PPI analysis

Actual savings patterns fall short of required for 40:60

Achieving the state:private mixes in Charts 5-8 assumes savings at a level to reach the assumed target replacement rates, which are based on the replacement rates achieved today[50]. These levels of saving appear too high, compared to the actual average level of saving today, to be likely (Charts 9 and 10).

- For women, if saving starts at age 41[51] and continues until age 65 the implied required savings rates are close to or above the value of a typical contribution to a standard DB scheme for all above median earnings. The savings rates at the higher earnings levels (17-29% of salary) would be obtainable only from persistent membership of a very generous occupational scheme, or significant non-pension saving on top of a good pension.
- For men, the required savings rates for the top 70% of earners are in the category of a generous occupational scheme.

This suggests that Charts 5-8 over-estimate the likely proportion of private pension income in the total for each individual.

Another way of looking at the savings issue is to drop the requirement for target replacement ratios to be met, but just ask what the required savings rate would be to achieve the "40:60", given the state pension income projected for each individual. This still seems to suggest that current savings behaviour will not allow the "40:60" to be met (Charts 11 and 12):

- To meet the test in this way, the savings rate is inversely proportional to earnings: lower-earning people need to save a higher proportion of salary.
- Only the higher earning 10% of women and 30% of men need to save at levels which look feasible.

[50] Pensions Commission (2004) page 143

[51] This is the central case, based on general patterns of pension saving (see, for example, Curry and O'Connell (2003)). The impact of starting saving earlier or later than this is shown on page 20.

Chart 9[52]

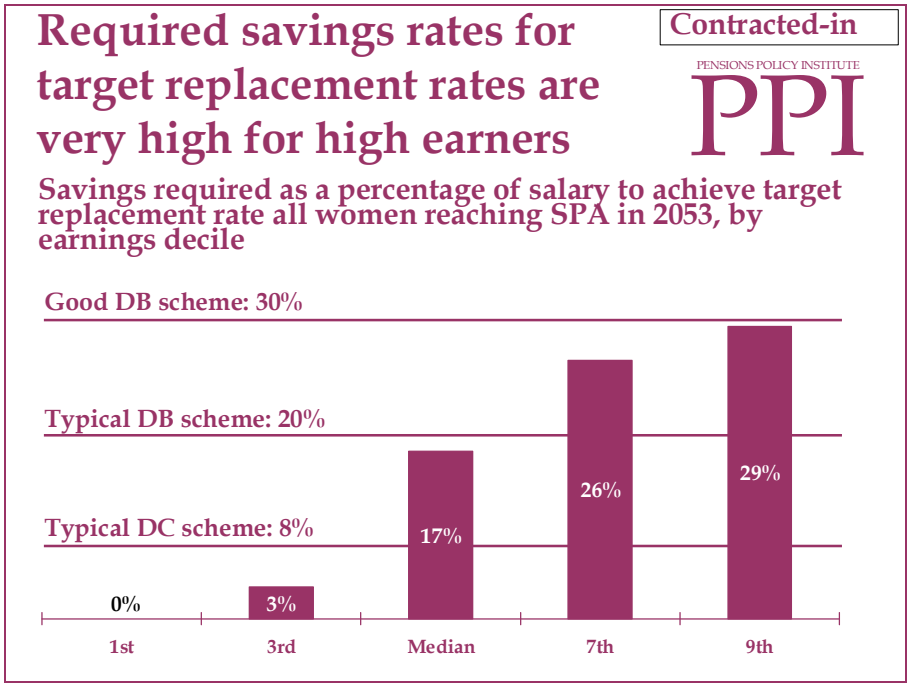
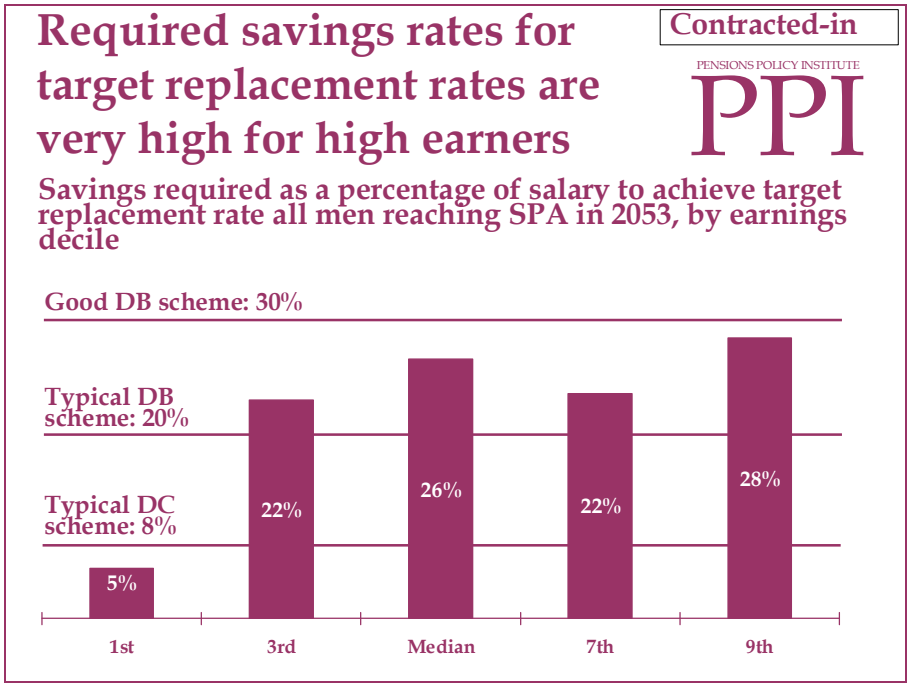


Chart 10[53]



[52] PPI analysis. DB and DC contribution rates are derived from GAD (2003) and O'Connell and Silver (2005); they include both employer and employee contributions to contracted-in schemes. The "typical DB scheme" is a 60ths scheme with a normal retirement age of 65. The "good DB scheme" is illustrative of the most generous DB schemes available: it is a 45ths scheme with a normal retirement age of 60.

[53] PPI analysis

Chart 11[54]

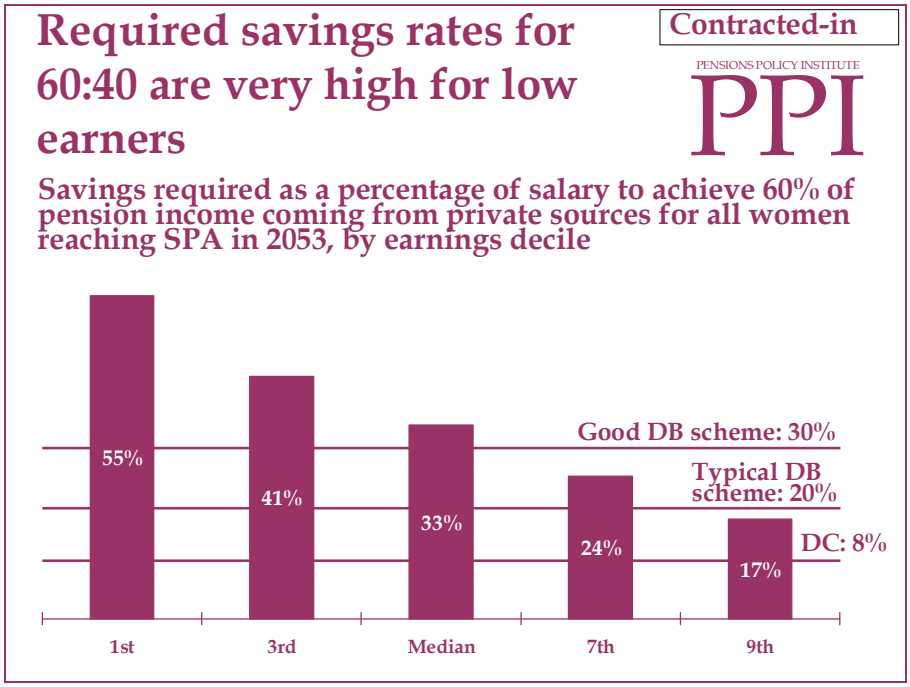
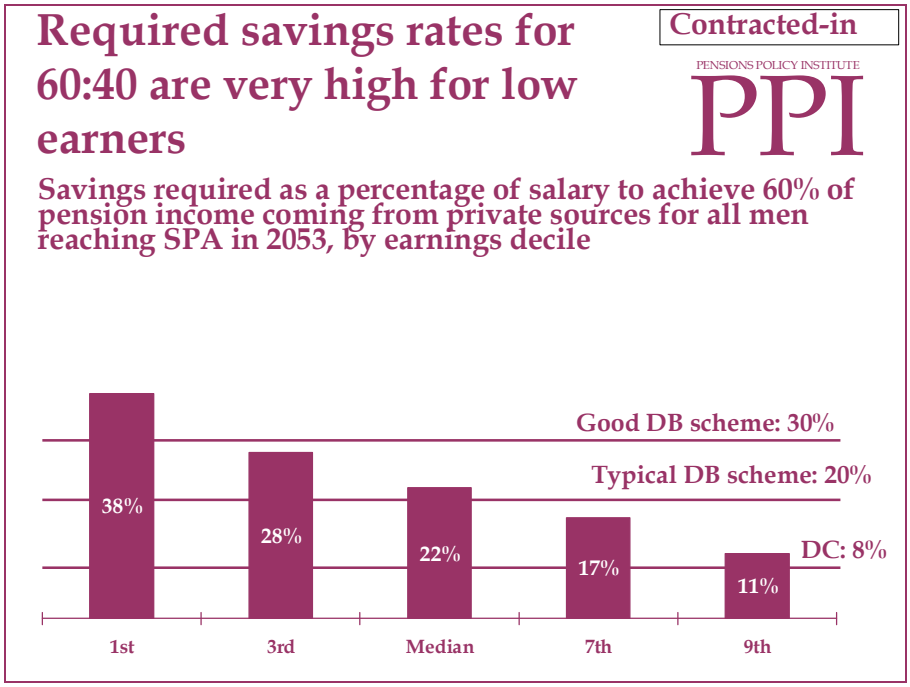


Chart 12[55]



[54] PPI analysis. DB and DC contribution rates are derived from GAD (2003) and O'Connell and Silver (2005); they include both employer and employee contributions to contracted-in schemes. The "typical DB scheme" is a 60ths scheme with a normal retirement age of 65. The "good DB scheme" is illustrative of the most generous DB schemes available: it is a 45ths scheme with a normal retirement age of 60.

[55] PPI analysis

Charts 9 - 12 use illustrative individuals, with specific characteristics. In reality, there are a number of different circumstances in which people may be more or less likely to receive 40% of their pension income from private sources (Table 2). The implied required savings rates needed to reach a target replacement income, or to achieve 60% of pension income from private sources are lower if people:

- Start to save earlier
- Work for longer (retire later)
- Have private non-pension income, such as released housing equity

Implied required savings rates are higher if people:

- Start to save later
- Work less (retire earlier)

Table 2: Implied required savings rates for a median earning woman reaching SPA in 2053[56]

	Implied savings rate to reach target replacement income	Implied savings rate to achieve 40:60 state:private if contracted-in	Implied savings rate to achieve 40:60 state:private if contracted-out 41 - 55
Central estimate – starts saving at age 41 and retires at age 65	17%	33%	24%
Starts saving at age 35	15%	29%	21%
Retires at age 70[57]	0%	38%	21%
Releases maximum housing equity from a median value house at age 65	7%	23%	14%
Starts saving at 35, works until 70 and releases maximum housing equity	0%	27%	12%
Starts saving at age 45	21%	42%	31%
Retires at age 60	18%	52%	31%

No single change appears to be enough to allow the median woman to achieve the "40:60" target. However, by starting persistent saving at age 35, contracting-out at age 40, working until age 70 and releasing maximum housing equity she would only need to save 12% of income each year to achieve "40:60".

[56] PPI analysis. Equity release assumed a median house value of £150,000, house prices grow in line with average earnings and a maximum amount released on 20% of the house value. A similar sensitivity analysis for the 'median man' is available on request.

[57] No change to state pension age is assumed in this example

40:60 can only be achieved by some segments of the population
The analysis in the chapter suggests that "40:60" might be achieved by higher earning people, especially if contracting-out is counted as private income, but it is hard to see how actual patterns of saving at the individual level can ever combine to achieve "40:60" in aggregate.

This means that to achieve the "40:60 switch", some change to the current pension system would be required. But is this a desirable outcome? It seems appropriate to consider first whether the "60:40" measure should be used to indicate a target result; whether it is useful to set the appropriate balance of state and private pension provision. This requires a consensus view on the merits of private as compared to state pension provision. The next chapter considers whether a switch to a high level of private provision is desirable.

Chapter 3: Is private provision preferable to state provision?

Previous chapters have indicated that the "40:60" switch is unlikely to be achieved, both in macro- and micro-economic terms. This chapter looks at the presumed rationale behind the switch: that an increase in the amount of private saving towards pension provision is desirable.

This chapter develops the argument that the 'right' balance between state and private pension provision depends more on structural social policy issues at the level of the individual than macro-economic considerations.

This view is developed as follows:

1. The total resources available to the retired population are likely to be similar under different mixes of state or private pension provision.
2. The investment return potential of private pension saving does not always boost ultimate pension income.
3. Individual ownership may be more important in growing the resources available in the economy than whether a pension is funded or unfunded.
4. Flexibility in private pension savings increases the variability of pension outcomes for individuals.
5. Although most people agree that both state and private pension provision should be strong, there is no consensus on how state and private pensions should mix.

This argument provides support for the "60:40" measure being used as an interesting indicator of outcomes over time, but not for the setting of a target outcome.

1. The total resources available to the retired population are likely to be similar under different mixes of state or private pension provision

Private pension saving can boost the economy if:

- Total saving is increased, and,
- Increased saving leads to increased investment, and,
- Increased investment leads to increased output.
- Or, if labour market distortions are reduced[58].

However, none of these relationships is guaranteed[59]. The evidence as to whether private pension saving leads to economic growth is mixed, and not conclusive[60]. Some economists would go further, and say that savings and investment follow growth, rather than stimulate it[61].

More important than this debate seems instead to be the fundamental issue that, by and large, state and private pension resources come from the same source – the country's economy. Whether it is taxpayers financing state provision, or workers generating the returns on savings which retirees are enjoying, in aggregate, it is the current economy that drives pensioner resources. In other words, the total income available for pensioners is a consequence of the size of the economy[62]. Growth in the economy is a more important macro-economic issue than the split between state and private resources[63].

This suggests that the resources available to the retired population would be similar under different models of the balance of state or private pension provision. This turns out to be true: the size of total pension per pensioner across countries can be of a similar level despite very different mixes of state and private provision in different countries (Table 3).

[58] A further mechanism for boosting economic growth is if private pension saving helps to develop financial markets (Davis and Hu (2004) and Holzmann et al (2005)). This is unlikely to be significant in the UK, where financial markets are well developed.
[59] Barr (2000)
[60] Barr (2000)
[61] See Littlewood (1998) p. 30-33
[62] Turner (2003)
[63] Littlewood (1998) and Barr (2000)

Table 3[64]: Proportion of pension income from the state (1998) and average retirement income replacement rate (2002)

	Proportion of pension income from state sources	Total income of people aged 65+ as a ratio of total income of people aged 0-64
Spain	92%	91%
Germany	85%	97%
France	79%	90%
Italy	74%	96%
UK	65%	78%
Netherlands	50%	93%
US	45%	64%

2. The investment return potential of private pension saving does not always boost ultimate pension income

The implicit rate of return on an unfunded state pension system is equal to the growth in the economy[65]. The ultimate size of the pensions of people contributing today depends on the contributions (and therefore earnings) paid by future workers.

It therefore seems obvious that a pension fund invested in bonds and/or equities should give a higher rate of return on contributions, and result in a larger pension. However:

- The expected demographic trends are likely to dampen future returns to private pension saving, though not lead to a wholesale collapse in asset prices[66].
- Private pensions may need to stay invested in equities for a very long time period - forty years or more - to achieve a positive equity risk premium, that is, the investment return more than compensates for the additional risk taken by investing in equities[67].
- A higher return on private pension funds can be offset by higher administration costs relative to state pensions. For example, even in a stakeholder pension scheme[68] the value of the pension can be reduced by 20% over 40 years[69].
- Individuals may be expected to make the risk/return trade-off decision differently and preferences are likely to change over time.

[64] EC (2003), US Census Bureau (2001), Börsch-Supan (2004). European figures for replacement income refer to income (equivalised disposable income) of people aged 65+ as a ratio of income of people aged 0-64 in 2002. The denominator for the US is age 15-64 and figures refer to 2000. Sources of retirement income refer to total income of an average 2-person household just after retirement and is income from the First Pillar (for the UK this includes SERPS).

[65] Samuelson (1958)

[66] Young (2002), Pensions Commission (2004)

[67] Dimson et al (2003)

[68] Assuming a 1% p.a. annual management charge. Some group schemes will have lower charges than this.

[69] PRG (2002). It can be argued that some of this cost is in part subsidising the administration of the state system.

After stock market crashes, or private market failure (ASW or Equitable Life in the UK) sentiment seems to have swung away from investing in private pensions.

- Potential future returns, particularly from equities, tend to be over-estimated more than under-estimated ('the cult of the equity')[70], by financial experts as well as by less-informed savers.

The higher rate of return from private pension saving compared to that from state pensions cannot therefore always be taken for granted, but should be tempered by realistic assessments of future return and by the ability of the participants to bear possible risk scenarios.

As an example of where the private alternative seems to have been worse than staying in the state system for some individuals, it is estimated that between 0.5 and 1.5 million individuals who are contracted-out of the State Second Pension into a Defined Contribution private pension will get lower benefits than if they had stayed contracted-in[71].

If it is thought that the higher return potential of equity investment should be 'harnessed' for the provision of pensions in future, it is not necessary for that to be individualised. For example, the Irish National Pensions Reserve Fund and the New Zealand Superannuation Fund are effectively national investment funds set up so that higher taxes now can be invested to smooth the tax increases likely in future as the cost of state pensions grows in line with the increasing number of pensioners[72].

3. Individual ownership may be more important in growing the resources available in the economy than whether a pension is funded or unfunded

It is sometimes proposed that more privately funded pension provision in individual accounts would grow the overall size of the economy.

- Funded individual accounts provide a direct link between contributions and benefits, so that the pension is more readily seen as a higher wage. This may act to increase labour supply, and therefore economic growth[73].
- However, a notional individual account would have a similar labour market impact as a funded individual account[74].

[70] Samuel Brittan The long death of the cult of the equity in Financial Times 7 January 2005

[71] NAPF (2004) p. 17. This is partly due to investment returns being worse, and longevity being better, than assumed in the terms of the contracting-out rebates, which should be set so that the private alternative will be actuarially equivalent of the state benefit given up. The other main contributor is the cap on rebate levels at higher ages. This indicates the difficulty in attempting to use a funded individual-based private system to mirror the unfunded, pooled state system.

[72] Norway has a similar scheme (Barr (2000)) and a similar concept has been mooted for the UK by the Pensions Reform Group (2002)

[73] See, for example, Holzmann et al (2005) and Miles (2000)

[74] Holzmann et al (2005). As the notional rate of return may be lower than the rate of return to a funded system, there would still be some reduction in labour supply with a notional DC arrangement compared to a funded DC arrangement.

- Individual accounts can encourage later retirement, as working longer increases the amount of pension received. Some pooled arrangements may encourage earlier retirement, if benefits are not increased for longer working.
- Individual accounts can increase voluntary contributions. Once a funded individual account is held, there is more incentive for pension providers to on-sell higher pension contributions, so that the assets on which charges are levied are higher. However, UK experience suggests that encouraging individual accounts is not cost-free, as individuals need a financial incentive to start an account. Contracting-out was successful when it was introduced in 1988 in part because incentives were built-in to the contracted-out rebates. Now that rebates are actuarially neutral[75], the rebates are seen as too low to encourage people to contract-out, reducing the possibility of encouraging voluntary contributions[76].
- Individual ownership may be preferred over a pooled state system because of the political risk that future governments might cut benefits. Notional accounts could be reduced by changes in the notional rate of return, or the annuity terms. However, funded pensions are not immune from political risk. For example, the tax treatment of dividend income from UK equities was changed in 1997. And it is not clear (at least in the UK context) that private pension providers enjoy greater trust than the Government.

4. Flexibility in private pension savings increases the variability of pension outcomes for individuals

Apart from the potential for higher investment return, private pension savings can give more choice to the individual than state pension benefits which are more uniform (because they are pooled). For example, the choices available to a UK personal pension holder, as compared to the state pension, are:

- Which provider to use.
- Amount contributed, and therefore level of benefits received.
- Type of income stream: annuities can be level or indexed at different rates; state pension is indexed to prices and may also be increased by ad hoc rises.
- Timing of when pension is taken: personal pension can be taken before state pension age (SPA); state pension can only be taken at or after (SPA).
- Package of related benefits, for example, pension provided to a spouse or partner.

This flexibility has the potential to encourage individuals to contribute more to private pensions, or to other investment vehicles such as Individual Savings Accounts (ISAs) which are even more flexible, but with less tax advantage than pensions.

[75] As there is a margin in the rebate for the administration costs of private provision, even an actuarially neutral rebate has a 'cost' to the state

[76] ABI (2004)

Employer-sponsored pension provision has similar flexibility to personal pensions if it is on a Defined Contribution basis, but choice may be limited to the last two in the above list in a Defined Benefit scheme.

The advantages of the greater flexibility in private pensions need to be set against the risk of making what turn out to be the 'wrong' choices. For example:

- Insolvency of a provider.
- Myopia in not contributing 'enough' for the level of pension desired.
- The erosion of the real value of a level pension with high inflation. and longer than expected longevity.
- Taking pension early reducing the pension level and exacerbating the inflation and longevity risk.
- Not providing a spouse's pension, reducing income in old age for surviving spouses.

There is also evidence that increasing choice can reduce participation – the more choices are available, the fewer people make a positive decision[77].

The different pattern of risks and benefits in private pensions, compared to state pensions, means that a balance of the two should generally be a good diversification. It is sometimes said that whereas the state pension has political risk, private pensions do not, and it is that difference that argues for a mix of state and private provision. However, there is still a fair amount of political risk (in the sense of state intervention changing the environment) in private pensions:

- Largely because private pensions are tax-advantaged, the state intervenes in regulating the amounts that can be invested in private pensions, and the benefit structure. For example, the Finance Act 2004 has introduced the £1.5m lifetime limit and raised the youngest age a private pension can be taken to age 55[78].
- Because the state has a strong interest in ensuring against private market failure, it will intervene to improve market conduct or improve market stability. For example, the Pensions Act 2004 changed the basis of pensions regulation with the introduction of the new Pensions Regulator[79].
- Contracting-out, as a specific mechanism to switch state pension to the private sector, is particularly susceptible to state intervention. For example, the rules on how contracted-out benefits must be provided have changed several times since its introduction which has led to unexpected complexities in administration. The actuarial basis on which the terms of contracting-out are calculated changes at least every 5 years[80].

[77] Pensions Commission (2004) page 209
[78] Finance Act 2004 (Part 4)
[79] Pensions Act 2004 (Part 1)
[80] GAD (2001)

5. Although most people agree that both state and private pension provision should be strong, there is no consensus on how state and private pensions should mix

The average incomes of people over state pension age (as a proportion of final salary) do not vary significantly across countries which have different mixes of state and private provision (Table 3). However, the level of poverty among pensioners varies much more across the same countries (Table 4).

Table 4[81]: Proportion of pension income from the state (1998) and old age poverty rate (2002)

	Proportion of pension income from state sources	Spend on state pensions as % GDP	Old age poverty rate
Spain	92%	9.4%	16%
Germany	85%	10.8%	11%
France	79%	12.1%	19%
Italy	74%	13.8%	14%
UK	65%	5.5%	21%
Netherlands	50%	7.9%	7%

This suggests that the balance of state and private pension provision may not impact the average pensioner income as significantly as it impacts on how the pension income is distributed among pensioners.

This is not surprising. Going back to first principles, possible roles for a state pension can be ranked from the minimal to the generous (with obvious consequences for cost)[82]:

1. Alleviation of poverty
2. Prevention of poverty
3. Belonging and participation so that retired people feel part of the community
4. Continuance of economic status so that the standard of living relates to pre-retirement levels.

The debate on where state provision ends and private savings takes over is not a purely factual macro-economic exercise. There is no consensus on where the roles of state and private pensions should meet: there are valid differences of opinion on whether private pensions are better than the state at income replacement, and a useful metric for the impact at the individual level is lacking.

[81] Börsch-Supan (2004), EU (2003) The poverty rate shows the percentage of persons with an equivalised income below the defined 'at risk of poverty threshold'. In this case those whose income falls below 60% of the median equivalised income.

[82] St. John and Ashton (1993) discussed in Littlewood (1998) and Blackburn (2002). See PPI (2005).

- There tends to be general agreement that the state is better at poverty prevention (Level 1 and 2) as state pensions are pooled across incomes and generations, so can more easily[83]:
    - Redistribute across income groups.
    - Insure against those risks difficult to cover by private provision (especially if individualised), for example, long spells of low investment returns, recession, inflation and private market failure.

  The World Bank has recently strengthened its focus on the basic role of the state in preventing pensioner poverty[84], consistent with viewing the state pension as *insurance against living too long*[85].

- There seems to be general agreement that private pension provision is better targeted at higher income people than lower income, with the aim of pre-retirement income replacement (Level 4).
    - Saving in individualised funded private pensions can smooth consumption from earning age to pension age; such saving is more possible for higher income people than lower income people.
    - Target replacement rates for lower income people may well be met by a Level 1 or 2 state pension.
    - The risks of private pensions, especially if individualised, of longevity, investment return and inflation cannot be easily borne by lower income people with little or no other wealth as a cushion.

- There are political choices on how much the state could spend on an income replacement pension (Level 4) over and above paying for an acceptable level of poverty alleviation or prevention. The political economy may not allow more of the state's resources to be spent on income replacement. This seems to have been the case in the UK, where the plan for SERPS to provide a generous income replacement was progressively cut back until the current second tier is now intended to be a flat-rate benefit[86]. However, in France, Germany and Italy, generous income replacement has been a feature of the state pension scheme for many years[87].

[83] World Bank (1994); O'Connell (2003)
[84] Holzmann et al (2005)
[85] O'Connell (2003)
[86] PPI Briefing Note 19 (forthcoming)
[87] See O'Connell (2003). A later paper in this series will examine the arguments for an earnings replacement pension benefit to be provided by the state.

- Despite the agreement about the emphasis for state pension being poverty prevention and the focus for private pensions being income replacement, there is no general sense for where the line should be drawn between the two:
    - At the aggregate level, the "40:60" switch suggested such a target, but there was no analysis shown to support the rationale for that particular ratio as opposed to another (Chapter 1).
    - Even if there was agreement at the aggregate level, there seems to be no useful metric to express the ratio in terms that can be useful to the individual.
    - Uniquely, contracting-out complicates the UK system further, particularly as the decision to contract-out in most cases is the employer's, so applies to the pension scheme for the whole workforce.

- Currently in the UK the pension system achieves different levels of pension income adequacy for different groups of people[88]:
    - Poverty is not prevented because of the c. 80% take up of Guarantee Credit, so for lower income people the state system operates only at Level 1.
    - For higher income people, the state pension system has been operating at Level 4, because of the generous state benefits through SERPS. Even with the flatter State Second Pension benefit, as private savings are generously tax incentivised, the state will in future still be at a (less generous) Level 4 for higher income people.
    - For lower income individuals, the State Second Pension, in becoming flat-rate on top of a reducing Basic State Pension (and with the sum of the two benefits under the Pension Credit level for most people) has a role in Level 2 rather than an earnings replacement Level 4.

This section shows that the 'right' balance between state and private provision cannot be considered without understanding how that impacts the distribution of pension income across income groups. It also shows that consensus on the right balance is extremely unlikely, at the aggregate or individual level, as there is room for different opinions even if the facts are agreed.

[88] PPI (2005)

From this chapter there are two main conclusions to be drawn:

- That the balance of state and private provision is more than a macro-economic exercise: social policy considerations at the level of the individual have to be made.
- That it is therefore not particularly useful to set a numeric long-term target such as the "40:60" for the balance between state and private provision, although it could shed some light on trends if used as an indicator of outcomes.

From these conclusions it is also worth emphasising that fundamental reform of pension policy has to be considered in the round: covering both state and private pension provision.

Questions for discussion

This paper is written to prompt debate at a Nuffield Foundation / PPI seminar to be held on 6 April 2005. The following questions are suggested for discussion:

1. What potential advantages or disadvantages of state and private provision has this paper missed?

2. What are the objectives in switching from state to private provision, and would they all be met by switching?

3. Where in the Levels 1-4 (page 28) should the line be drawn between state and private pension provision? How much agreement is there on this, and what are the areas of disagreement? What would this mean for different individuals?

4. Is there an appropriate metric for "40:60" at the level of the individual? Should it vary by income level, whether the private pension is provided by the employer or individual, or other factors?

5. Is there sufficient consensus on the merits of private as compared to state pension provision that a target such as the "40:60 switch" makes sense as a desired target rather than an interesting indicator of outcomes?

Appendix: Modelling details

The charts in Chapter 2 show the amount of state and private pension income that illustrative individuals with different levels of earnings might expect to receive when they reach age 65 in 2053. These are based on projections using the PPI Individual Model. This appendix outlines some of the assumptions used.

The PPI Individual Model

The Individual Model (IM)[89] is a model that simulates pension income for individuals and households reaching state pension age today and in the future.

The main characteristics of the IM

In this paper, the model uses a set of assumptions about an individual's past and future working mode and level of earnings, private pension contributions and investment performance to estimate his or her likely state and private pension at different points in future.

- State pension entitlement is calculated according to the individual's work and National Insurance contribution history. The 'rules' used are the current rules and uprating conventions projected into the future, so it is assumed that the current system continues[90].
- Private pension accrual also depends on the individual's work history and level of contributions. It is assumed that each year in which private pension is accrued, contributions are made into a Defined Contribution pension scheme (such as a stakeholder pension) by the individual and/or the employer.

State and private pension accruals are used to calculate weekly pension income from state pension age:

- State pension provision includes Basic State Pension (BSP), Graduated Retirement Benefit (GRAD), State Earnings Related Pension (SERPS), State Second Pension (S2P) and other state benefits such as Winter Fuel Allowance and Pension Credit (PC).
- Private pension provision includes pension saving and can include other forms of savings (such as ISAs or housing). Future streams of private pension provision are calculated through annuity purchase.

Illustrative individuals

Typical policy analysis assumes that individuals remain in full-time work at the same earnings level from the day they leave education to the day they reach 65. Rather than use these artificial assumptions, the individuals analysed here illustrate some of the range of characteristics that exist in the working population that affect current and future pension income. They are similar to individuals analysed in previous PPI studies.

[89] The Individual Model (IM) has been developed as part of a research project *Evaluating long-term policy reform options in the UK pension system*, which is funded by the Nuffield Foundation. Further technical details of the IM are available in Curry (2003 TP).

[90] The model also enables the impact of different reform options on individuals' pension income to be tested

The illustrative individuals used are:

- **An illustrative man**: He worked mainly full-time from age 21, but was unemployed for two years in his twenties and worked part-time between age 55 and age 60.
- **An illustrative woman**: She started work at the age of 21, working full-time until 28. She then had a career break to care for her children for six years, but the break did not coincide with the financial year, so she lost two credits to BSP and S2P. She returned to part-time work for four years. She then worked full-time until taking another 5-year career break in her 50s to care for an elderly relative, for which she received no carer benefits or credits[91]. She returned to full-time work again, until reaching state pension age.

Charts 7 and 8 of Chapter 3 show the balance between state and private pension for illustrative contracted-out individuals. These individuals are the same as those described above, only that instead of being contracted-in for their entire careers, they are contracted-in until age 40 (to coincide with starting voluntary saving) and then contract-out for 15 years before contracting back in at age 55 (when the age-related rebates are less attractive). This means that about half of the women's S2P entitlement is contracted-out, and around 35% of the men's[92].

The contracted-out individuals are assumed to neither gain nor lose out by contracting-out. Effectively, the contracting-out rebates are assumed to be actuarially neutral in the long-term, set using the same assumptions on investment returns that the IM uses to model the individual's private pensions.

Earnings

Typical policy analysis tends to assume that individuals stay on a percentage of the median or average earnings of all workers throughout his or her working life. The earnings levels used here are instead based on the earnings received at different ages. For example, the illustrative woman with median earnings is assumed to have the median earnings of all full-time employed 21 year-old women when she is aged 21, and the median of all full-time employed 22 year-old women when she is aged 22. As earnings tend to be higher in the middle of working life than at younger and older ages, using age-specific earnings in this way should give a more realistic picture.

[91] The credit system for carers is currently imperfect. For example, Home Responsibility Protection (HRP) for carers is given to people looking after someone for at least 35 hours a week who has been getting Attendance Allowance, Constant Attendance Allowance or the highest or middle rate of Disability Living Allowance (DLA).

[92] Around 46% of employees were contracted-out in 2004. The latest projections by the Government Actuary's Department assume that 36% of employees will be contracted-out in 2020, falling to 31%, GAD (2004).

The earnings are estimated by the PPI from the latest available data[93] and are shown in Tables A1 and A2 for selected ages:

Table A1: Annual earnings in 2005/06 earnings terms of the illustrative men

Decile	Earnings at 25	Earnings at 50	Final earnings
1st	11,400	13,800	11,700
3rd	15,100	19,500	16,100
Median	18,300	25,100	21,300
7th	23,200	32,600	25,900
9th	32,400	50,200	50,200

Table A2: Annual earnings in 2005/06 earnings terms of the illustrative women

Decile	Earnings at 25	Earnings at 50	Final earnings
1st	10,400	10,400	9,000
3rd	13,600	14,100	10,800
Median	16,800	17,500	13,500
7th	20,400	24,300	17,600
9th	26,900	34,700	24,600

Replacement rates

Chapter 2 shows what the balance between state and private pensions would be if the individuals saved enough to reach a target level of pension income at retirement. Their target level of pension income is found by multiplying their final salary by the replacement rates suggested by the Pensions Commission (Tables A3 and A4)[94].

Table A3: Target replacement rates and incomes for the illustrative men

Decile	Final earnings in 2005/06 earnings terms	Target replacement rate	Target pension income (state and private) per year at age 65 in 2005/06 earnings terms
1st	11,700	70%	8,200
3rd	16,100	70%	11,300
Median	21,300	67%	14,300
7th	25,900	60%	15,500
9th	50,200	50%	25,000

[93] Labour Force Survey, Spring 2004
[94] Pensions Commission (2004) page 143

Table A4: Target replacement rates and incomes for the illustrative women

Decile	Final earnings in 2005/06 earnings terms	Target replacement rate	Target pension income (state and private) per year at age 65 in 2005/06 earnings terms
1st	9,000	80%	7,200
3rd	10,800	70%	7,600
Median	13,500	70%	9,500
7th	17,600	67%	11,800
9th	24,600	67%	16,400

The state pension system

The current pension system is assumed to continue, with the same uprating conventions as are used today[95]:

- The Basic State Pension and State Second Pension are assumed to be increased in line with prices when in payment. The Basic State Pension level is assumed to remain the minimum income level for entitlement to Savings Credit.
- The Guarantee Credit is assumed to be increased in line with earnings.
- The Lower and Upper earnings limits for State Second Pension are assumed to increase in line with prices. The Lower Earnings Threshold (the LET – the 'flat-rate' part of State Second Pension) is assumed to increase in line with earnings. The Upper Earnings Threshold is assumed to increase to reflect the changes in the LET, ensuring that higher earners receive the same in State Second Pension as they would have received in SERPS. However, when the Upper Earnings Threshold overtakes the Upper Earnings Limit, it is assumed to be uprated in line with prices.

Macroeconomic assumptions

Other assumptions used are as follows. Differences from these principal assumptions have been tested; details available on request. The results are most sensitive to changes in earnings growth.

- Prices are assumed to grow by 2.5% each year.
- Earnings are assumed to grow by 2.0% per year in excess of prices.
- Investment returns earned on private pension contributions are assumed to be 2.0% per year in excess of prices and after expenses.
- Accumulated private pension funds are converted into pension using an annuity rate of 7.0% for men and 6.6% for women.

[95] For more details, see *The Pensions Primer*, www.pensionspolicyinstitute.org.uk

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