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David Spiteri Gingell
Chairman
Pensions Working Group
Valletta

Dear Mr Spiteri Gingell

I am pleased to forward to the Pensions Working Group the Report titled 'Actuarial Study of Key Recommendations Made in the 2004 Pensions White Paper' commissioned by the Malta Financial Services Authority on behalf of Government.

In the event that the Report is published arising queries should be handled by the Pensions Working Group.

Yours sincerely

Prof Joe Bannister
Chairman
Malta Financial Services Authority
Attard

Hewitt

Hewitt Bacon & Woodrow Limited

Actuarial study of key recommendations made in the November 2004 Pensions White Paper

Prepared for

Malta Financial Services Authority

Prepared by

Tony Hewitt

Simon Ferry

Executive Summary

Summary of key proposals in this report

The key proposals arising from the actuarial study comprise:

(a) making use of a number of design parameters to help control the **sustainability** of the First Pillar Pension Scheme (FPPS) and the overall **adequacy** of benefits for lower paid members earning at or close to the Minimum Wage

(b) a hybrid design for the mandatory Second Pillar Pension Scheme (SPPS) Tier 1 with fixed - and therefore **sustainable** - contribution rates

(c) making available voluntary SPPS Tier 2 contributions – to enable higher paid members to achieve higher SPPS benefits using the hybrid design for SPPS Tier 1 – topping up the overall **adequacy** of their benefits to a level which they consider appropriate.

Target level of the FPPS pension

The White Paper proposes a number of changes to the formula used to calculate the FPPS pension. These changes fall into two categories:

(1) changes to design parameters – phased-in over a fixed period of years

(2) changes to the rate of revaluation applying each year to pensions in payment, the Maximum Pensionable Income (for calculating the FPPS pension and contributions), the Minimum Pension Guarantee and the method of wage averaging.

Design parameters for controlling the sustainability of the FPPS

We investigate in section (13) of this report the sustainability of the FPPS having regard to the following design parameters:

- the extent to which social security contributions are channelled to the Health Fund
- the extent to which social security contributions are channelled – or "carved out" – to meet the mandatory SPPS Tier 1 contributions.

Maximum Pensionable Income and Minimum Pension Guarantee reducing in comparison to average basic wages

The rate of revaluation, applying each year to the level of the Maximum Pensionable Income and the Minimum Pension Guarantee, is important in the long term.

This is because the White Paper proposes revaluations in line with inflation for both these limits (Decision of Principle Nos. 4 and 35). These inflation revaluations will mean these limits will reduce in wage terms year by year – given average basic wages can be expected to

increase at a rate faster than inflation.

We consider the long-term impact of these limits reducing in comparison to average basic wages in section (12) of this report.

We also consider the long-term comparison between Minimum Wage (which is revalued each year in line with COLA) and the Minimum Pension Guarantee.

Trend towards a flat-rate structure – impact on sustainability

The reduction of the Maximum Pensionable Income in wage terms is an important factor in keeping the FPPS costs to a sustainable level.

Over time, more and more members will have basic wages in excess of the Maximum Pensionable Income. In theory, ultimately every member would pay contributions and receive a pension based on the Maximum Pensionable Income. This would convert the FPPS into a scheme with flat-rate benefits for everyone, and with all contributing members paying the same flat-rate contributions.

However, under this structure it would become impossible to achieve adequate benefits at sustainable costs particularly for those earning at or close to the Minimum Wage. This is because there would be no cross-subsidy – with a totally flat-rate structure – from high earners to low earners.

Separate Maximum Salary Limit

For this reason we have proposed in this paper separate maximum pay limits for FPPS benefits and FPPS contributions:

- the Maximum Pensionable Income, revalued in line with RPI, is used only for the purpose of calculating FPPS benefits
- a separate limit, the Maximum Salary Limit, is used for the purpose of calculating the FPPS contributions.

The Maximum Salary Limit can be revalued automatically each year in line with RPI in the same way as the Maximum Pensionable Income.

It can then be used as an extra "control lever" – increasing its level from time to time with a view to keeping the limit at or close to 132% of average basic wage (its current level in January 2005).

This extra control lever can be used to keep the FPPS contributions on an earnings-related basis, whilst the FPPS benefit evolves towards a flat-rate benefit. This has a major impact on the sustainability of FPPS costs, as shown in Section (13) of this report.

SPPS Tier 1 hybrid design involves

The proposed hybrid design involves a pooling of risks – with a gradual allocation of investment returns to provide a smooth rate of

pooling of risks

accumulation of contributions before retirement.

Equally, the terms of conversion into pension at retirement are designed to be stable:

- allowing members to plan for retirement
- but subject to adjustment after an appropriate period of notice, particularly if people live longer than expected.

We have made projections which indicate that the level of the SPPS Tier 1 pension will amount to about 10% of basic wages at retirement – for a member accumulating the mandatory 4% contributions for 40 years on basic wages which increase broadly in line with average basic wage increases.

Further details are given in section (14) of this report.

Control levers for strategic management of the SPPS Tier 1

Both the allocation of investment returns and the pension conversion terms are "control levers" enabling the SPPS Tier 1 to be managed strategically at a fixed, sustainable cost.

These "control levers" will also smooth out the peaks and troughs of favourable and unfavourable investment conditions, helping to ensure the SPPS Tier 1 pension remains adequate even when investment conditions are variable.

Adequacy of the combined pension from the FPPS and the SPPS Tier 1

In section (14) of this report, we also model the adequacy of the combined pension from the FPPS and the SPPS Tier 1.

In particular, we look at three individuals with different level of wages throughout their career – from the introduction of the SPPS when they are aged 25 to retirement at age 65.

As an illustration, we show the projected combined pension at age 65 assuming the following key parameters have been strategically managed over time to the following levels:

(1) the Minimum Wage is stabilised at 40% of average basic wage

(2) the Maximum Pensionable Income reduces to 40% of average basic wage and is stabilised at the same level as the Minimum Wage

(3) the Minimum Pension Guarantee is stabilised at 70% of the Minimum Wage – resulting in a flat-rate FPPS pension equal to 28% of average basic wage

(4) the Maximum Salary Limit – used to calculate contributions – is

regularly reviewed and maintained at 132% of average basic wage.

Basic Wage throughout career			Pension components		Combined pension	
Level of Basic Wage	in today's wage terms	% of average basic wages	SPPS Tier 1 pension	FPPS pension	in today's wage terms	% of Basic Wage
Maximum Salary Limit	6,841	132%	707	1,456	2,163	32%
Average basic wage	5,200	100%	537	1,456	1,993	38%
Minimum Wage	2,080	40%	225	1,456	1,681	81%

Adequacy for higher paid members

For higher paid members, the combined benefits from FPPS and the mandatory SPPS Tier 1 will not provide benefits in the future at the same level as at present.

To address this, we propose that all members have the opportunity to pay additional voluntary contributions – ideally with employer support – to the SPPS Tier 2 using the same hybrid design as SPPS Tier 1.

The limitations on the size of these voluntary SPPS Tier 2 contributions will be determined by the size of tax incentives granted on them. The size of these tax incentives will be another "control lever" – determined each year (or perhaps every 5 years) having regard to their impact on Government tax revenues.

This tax impact is considered further in section (5) of this report.

Key economic implications

From an economic perspective, the key implications of the White Paper recommendations can be summarised as:

(a) eliminating a substantial increase in mandatory pension costs over the next 25 years, and achieving a significant reduction in mandatory pension costs in the longer term. This will enhance nationwide employment prospects by helping to create a more flexible and competitive labour market in Malta

(b) potentially a greater rate of overall saving, if the mandatory and voluntary retirement saving through the SPPS exceeds – as can be expected – any dissavings from other categories of saving

(c) enabling retirement savings to be made in a cost effective way through good governance, competitive structures and large potential economies of scale – further enhancing the ability to

create a more attractive and competitive labour market in Malta.

If the White Paper recommendations are not implemented as a matter of urgency, there will be a high risk of the labour market in Malta being viewed as potentially uncompetitive and inflexible.

Further details on the economic implications are given in section (4) of this report.

Using tax incentives to enhance the attractiveness of the SPPS

The perceived attractiveness of the SPPS will be enhanced to a greater extent if:

(a) the tax incentive is immediate (i.e. applied to contributions), rather than deferred (i.e. applied when benefits are received)

(b) for defined contribution and hybrid asset accumulation schemes, the assets held within each member's savings account accumulates without any Maltese tax deduction or penalty.

This points to excluding the SPPS contributions from the insured person's taxable income and applying the income tax to the pension benefits when they are received in retirement.

It also points to allowing the asset accumulation within each insured person's savings account to be free of Maltese tax on all forms of investment income and capital gains.

Further details on possible tax incentives are given in section (5) of this report.

Contents

1. Introduction

Actuarial study commissioned in December 2004	This report sets out the main results and recommendations of the actuarial study commissioned by the Malta Financial Services Authority in December 2004 – at the request of the Prime Minister, Mr Lawrence Gonzi – in accordance with Decision of Principle No. 22 of the November 2004 Pensions White Paper.
Objectives	The report sets out the objectives of the actuarial study in section (2), outlines the key proposals arising from the actuarial study in section (3), and addresses each of the objectives in sections (4) to (13).
Modelling the mandatory pension design	The recommended design of the overall mandatory pension provision – the combined pension from the First Pillar Pension Scheme (FPPS) and the first Tier of the Second Pillar Pension Scheme (SPPS Tier 1) – is modelled in section (14).
Financial management using "control levers"	A summary of the "control levers" incorporated in the recommended design is set out in section (15). These "control levers" will enable the Pensions system to be managed strategically, with gradual adjustments as necessary over time – with the aim of ensuring: • the desired level of adequate pension benefits • within acceptable and sustainable contribution levels.
Recommended next steps	Our recommendations on the next steps to be taken are given in section (16).

2. Objectives of the actuarial study

Original objectives

The original objectives for the actuarial study are set out in the November 2004 Pensions White Paper – in the section leading up to Decision of Principle No. 22 on page 66 of the White Paper.

Subsequent additions

Additions to the original objectives were put forward in January 2005 by Mr David Gingell, the Chairman of the Pension Working Group which prepared the White Paper.

Objectives addressed in this report

The original objectives, as modified in January 2005, were:

(1) an assessment of the economic implications of the recommendations proposed;

(2) a review of possible tax incentives for the SPPS, including the implications of these incentives for Government tax revenues;

(3) proposals on how the SPPS – as proposed in the White Paper – could be improved;

(4) proposals on the recommendation in the White Paper covered by Decision of Principle 14: specified limitations to determine the diversification parameters of the investment portfolio of the pension fund;

(5) the cut-off age for the introduction of the mandatory contribution;

(6) the quantum of the Second Pillar savings contribution to be paid by an employee and the employer in the case of an employed person, and by the self-employed;

(7) the indexation to be applied to the SPPS;

(8) the capping to be placed on the SPPS savings contribution in proportion to the wage or income earned; and

(9) definition of whether the SPPS should be introduced as a defined benefit or defined contribution scheme.

Further modelling to test sustainability

At a review meeting on 1 February 2005, a tenth objective was added:

(10) an assessment of the extent to which the proposals in the actuarial study are sustainable, working with members of the Department of Social Security in order to base the assessment on the World Bank's PROST (Pension Reform Options Simulation Toolkit) model.

3. Key proposals arising from the actuarial study

Sustainability for the FPPS and the SPPS Tier 1

This report addresses sustainability:

- by proposing a hybrid design for the SPPS Tier 1 – with the mandatory level of contributions fixed at 4% of basic wage
- by proposing a number of design parameters for controlling the pay-as-you-go costs of the FPPS, with sustainability assessed by modelling the projected costs on the World Bank's PROST model.

Design parameters for controlling the sustainability of the FPPS

We investigate in section (13) of this report the sustainability of the FPPS having regard to the following design parameters:

- the extent to which social security contributions are channelled to the Health Fund (with the base line being the assumptions described in paragraph 03.9 of Appendix IV of the White Paper – 2% of basic wages from the employee's Class 1 contributions and 1% of basic wages from the State Grant)
- the extent to which social security contributions are channelled – or "carved out" – to meet the mandatory SPPS Tier 1 contributions (reflecting in particular the level of the cut-off age for the introduction of the mandatory SPPS Tier 1 contributions).

Adequacy of the combined pension from the FPPS and the SPPS Tier 1

This report addresses adequacy:

- by modelling the target level of pension from the SPPS Tier 1 – a hybrid design involving the accumulation of contributions in a retirement savings account for each individual, and the conversion of these accumulated contributions into a pension at retirement
- by modelling the target level of pension from the FPPS – taking into account the progression of the following key parameters over time, measured by comparison to the level of the average basic wage in future years:
  (1) the Minimum Pension Guarantee
  (2) the Maximum Pensionable Income (used to calculate the FPPS pension)
  (3) the Maximum Salary Limit (used to calculate the FPPS contributions)
- by combining this modelling in order to investigate the adequacy of the combined pension from the FPPS and the SPPS Tier 1.

Level of SPPS Tier 1 pension is not guaranteed

Because the proposed hybrid design fixes the level of mandatory SPPS Tier 1 contributions at 4% of basic wage, the level of the SPPS Tier 1 pension is not guaranteed, but depends on:

(a) the rate at which the contributions accumulate before retirement

(b) the terms of converting these accumulated contributions into a pension at retirement.

Hybrid design involves pooling of risks

The proposed hybrid design involves a pooling of risks – with a gradual allocation of investment returns to provide a smooth rate of accumulation of contributions before retirement.

Equally, the terms of conversion into pension at retirement are designed to be stable

- allowing members to plan for retirement
- but subject to adjustment after an appropriate period of notice, particularly if people live longer than expected.

Further details on the hybrid design are given in section (14) of this report.

Control levers for strategic management of the SPPS Tier 1

Both the allocation of investment returns and the pension conversion terms are "control levers" enabling the SPPS Tier 1 to be managed strategically at a fixed, sustainable cost.

These "control levers" will also smooth out the peaks and troughs of favourable and unfavourable investment conditions, helping to ensure the SPPS Tier 1 pension remains adequate even when investment conditions are variable.

Target level of the SPPS Tier 1 pension

Using reasonable assumptions for investment returns, expenses and pension conversion terms, we have made projections which indicate that the level of the SPPS Tier 1 pension will amount to about 10% of basic wages at retirement – for a member paying the mandatory 4% contributions for 40 years on basic wages which increase broadly in line with average basic wage increases.

Further details are given in section (14) of this report.

Target level of the FPPS pension

The White Paper proposes a number of changes to the formula used to calculate the FPPS pension. These changes fall into two categories:

(1) changes to design parameters – phased-in over a fixed period of years

(2) changes to the rate of revaluation applying each year to pensions in payment, the Maximum Pensionable Income (for calculating the FPPS pension and contributions), the Minimum Pension Guarantee and the method of wage averaging.

Changing the base line for wage averaging creates "cliffs"

An important design parameter is the base line for wage averaging – used to calculate the "final pay" element of the Two Thirds FPPS pension.

The White Paper proposes that the base line for wage averaging is phased-in in three steps:

(1) three years to five years

(2) five years to ten years

(3) ten years to 40 years.

The final step creates a significant "cliff" in the level of the FPPS pension for members who are less than 45 years old on 1 January 2007.

Cut-off age for introducing mandatory SPPS Tier 1 contributions

The White Paper proposes a cut-off age for introducing mandatory SPPS Tier 1 contributions to coincide with this final step to wage averaging.

In section (8) of this report, we investigate this linkage between the cut-off age for mandatory SPPS Tier 1 contributions and the "cliff" in the FPPS pension at the final step to wage averaging.

Cliff/cut-off age as a design parameter

We also investigate treating this cliff/cut-off age as a design parameter in section (13) of this report. A lower cut-off age means that a smaller number of younger members will be subject to mandatory SPPS Tier 1 contributions.

If the mandatory SPPS Tier 1 contributions are "carved out" of the social security contributions, the level of the cut-off age will be crucial to the sustainability of FPPS costs in the next 20 years or so:

- a lower cut-off age will mean fewer members will initially pay mandatory SPPS contributions on top of the pay-as you-go FPPS costs
- a higher cut-off age will mean more members will initially pay mandatory SPPS contributions on top of the pay-as-you-go FPPS costs.

Maximum Pensionable Income and Minimum Pension Guarantee reducing in comparison to average basic wages

The rate of revaluation, applying each year to the level of the Maximum Pensionable Income and the Minimum Pension Guarantee, is also important in the long term.

This is because the White Paper proposes revaluations in line with inflation for both these limits (Decision of Principle Nos. 4 and 35). These inflation revaluations will mean these limits will reduce as a percentage of average basic wages year by year – given average basic wages can be expected to increase at a rate faster than inflation.

We consider the long-term impact of these limits reducing in comparison to average basic wages in section (12) of this report.

We also consider the long-term comparison between Minimum Wage

(which is revalued each year in line with the Cost Of Living Adjustment – COLA) and the Minimum Pension Guarantee.

COLA is calculated by reference to the increases in salaries of a particular group of job roles and is a measure of price inflation. This differs from RPI inflation which is calculated by reference to the cost of a particular "basket" of goods.

Trend towards a flat-rate structure – impact on sustainability

The reduction of the Maximum Pensionable Income in wage terms is an important factor in bringing future FPPS costs down to a sustainable level.

However, over time, more and more members will have basic wages in excess of the Maximum Pensionable Income. In theory, the ultimate position would involve every member paying contributions and receiving a pension based on the Maximum Pensionable Income. This would convert the FPPS into a scheme with flat-rate benefits for everyone, and with all contributing members paying the same flat-rate contributions.

However, under this structure, it would become impossible to achieve adequate benefits at sustainable costs particularly for those earning at or close to the Minimum Wage. This is because there would be no cross-subsidy – with a totally flat-rate structure – from high earners to low earners.

Separate Maximum Salary Limit

For this reason we have proposed in this paper separate maximum pay limits for FPPS benefits and FPPS contributions:

- the Maximum Pensionable Income, revalued in line with RPI, is used only for the purpose of calculating FPPS benefits
- a separate limit, the Maximum Salary Limit, is used for the purpose of calculating the FPPS contributions.

The Maximum Salary Limit can be revalued automatically each year in line with RPI in the same way as the Maximum Pensionable Income.

Extra control lever for strategic management of FPPS

Because the Maximum Salary Limit is a separate limit, there will be the opportunity to use this new limit as an extra "control lever" - with the ability to revalue its level from time to time with a view to keeping the limit at or close to 132% of average basic wage (its current level in January 2005).

This extra control lever can be used to keep the FPPS contributions on an earnings-related basis, whilst the FPPS benefit evolves towards a flat-rate benefit. This has a major impact on the sustainability of FPPS costs, as shown in Section (13) of this report.

Adequacy for higher paid members

The proposed design structure and control levers – discussed so far – will help achieve overall sustainability and a high level of adequacy for lower paid members.

For higher paid members, the combined benefits from FPPS and the mandatory SPPS Tier 1 will not provide benefits in the future at the same level as at present.

To address this, we propose that all members have the opportunity to pay additional voluntary contributions – ideally with employer support – to the SPPS Tier 2 using the same hybrid design as SPPS Tier 1.

The limitations on the size of these voluntary SPPS Tier 2 contributions will be determined by the size of tax incentives granted on these SPPS Tier 2 contributions. The size of these tax incentives will be another "control lever" – determined each year (or perhaps every 5 years) having regard to their impact on Government tax revenues.

This tax impact is considered in more detail in section (5) of this report.

Summary of key proposals in this report

The key proposals arising from the actuarial study comprise:

(a) making use of a number of design parameters to help control the sustainability of FPPS and the overall adequacy of benefits for lower paid members earning at or close to the Minimum Wage

(b) a hybrid design for the mandatory SPPS Tier 1 with fixed - and therefore sustainable - contribution rates

(c) making available voluntary SPPS Tier 2 contributions – with appropriate tax incentives – to enable higher paid members to achieve higher SPPS benefits using the sustainable, hybrid design for SPPS Tier 1.

4. Economic implications

Objective (1)

The first objective requires:

an assessment of the economic implications of the recommendations proposed.

Key economic implications

From an economic perspective, the key implications of the White Paper recommendations can be summarised as:

(d) eliminating a substantial increase in mandatory pension costs over the next 25 years, and achieving a significant reduction in mandatory pension costs in the longer term. This will enhance nationwide employment prospects by helping to create a more flexible and competitive labour market in Malta – through lower and more sustainable mandatory pension costs, and through greater flexibility in designing remuneration packages for employees

(e) potentially a greater rate of overall saving, if the mandatory and voluntary retirement saving through the SPPS exceeds – as can be expected – any dissavings from other categories of saving. The impact of this on the Maltese economy will be significant, given that – as proposed later in this section – high standards of regulated governance can be expected to lead to diversification of SPPS assets into overseas investments, with the prime objective of risk reduction and greater potential investment returns. The impact will nevertheless be gradual, capable of being managed over time through appropriate fiscal and monetary measures

(f) enabling retirement savings to be made in a cost effective way through good governance, competitive structures and large potential economies of scale – further enhancing the ability to create a more attractive and competitive labour market in Malta.

If the White Paper recommendations are not implemented as a matter of urgency, there will be a high risk of the labour market in Malta being viewed as potentially uncompetitive and inflexible.

Impact on the cost of production

The White Paper recommendations include:

- keeping the existing rates of social security contributions unchanged (with part of these contributions channelled to the Health Fund)
- requiring employers to pay additional SPPS Tier 1 contributions for employees under age 45 in 2007, at the rate of 2% from 2010 to 2024 and 5% from 2025 onwards
- requiring the self-employed under age 45 in 2007 to pay additional

SPPS Tier 1 contributions at the rate of 4% from 2010 to 2024 and 10% from 2025 onwards.

In 2010, the extra costs of each 1% of mandatory SPPS Tier 1 contributions will amount to about Lm 5½ million in aggregate for employers and just under Lm 1 million in aggregate for the self-employed.

These direct extra costs will be significant in 2010, and much higher in 2025 when almost all of the future workforce will be subject to mandatory contributions (those under age 45 in 2007 will be under age 63 in 2025).

In addition, there may be further indirect costs if the mandatory SPPS Tier 1 contributions paid by employees under age 45 in 2007 result in pressure for higher pay.

Distortion in the labour market

Introducing mandatory SPPS Tier 1 contributions only for members under age 45 in 2007 will potentially lead to distortions in the labour market. This can be addressed by "carving out" the mandatory SPPS Tier 1 contributions from the existing social security contributions (see section (6) of this report).

Avoiding the impact on the cost of production

"Carving out" the mandatory SPPS Tier 1 contributions will also eliminate any increase to the cost of production.

The sustainability of the FPPS costs with and without this "carve out" is investigated in section (13) of this report.

Impact on disposable income

The White Paper recommendations involve:

- lower FPPS benefits for pensioners in the future
- lower take-home pay for contributing members after 2010 when the mandatory SPPS Tier 1 are introduced.

The impact on pensioners will be gradual because the reduction in FPPS benefits will be phased-in over a period of time.

The impact on contributing members may be less important – as compared to the impact on employers' cost of production – because there may be scope to divert other forms of savings towards meeting the mandatory SPPS Tier 1 contributions.

The impact on contributing members can be avoided if the "carve out" solution is considered feasible.

Impact of voluntary SPPS Tier 2 contributions

To achieve a reasonable level of benefits for higher earners, these members will need to pay voluntary SPPS Tier 2 contributions – ideally with support from employers.

To the extent that employees, employers and the self-employed pay voluntary SPPS Tier 2 contributions, this will also impact on the cost

of production and disposable income.

It will be possible to control the size of these extra voluntary SPPS Tier 2 contributions by applying limits to the tax incentives on these contributions (see section (5) of this report).

Confidence in the SPPS – pitfalls to avoid

It will be extremely important to introduce the new SPPS benefits in a way which builds and maintains the confidence of all contributors and beneficiaries.

To make a telling comparison, confidence in retirement provision in the UK is currently very low, as a result of various pitfalls:

- Government legislation requiring employer-sponsored Defined Benefit pension arrangements to "guarantee" benefit rights without any adequate mechanism to ensure those "guarantees" are met in the event of employer insolvency.
- Recent volatility in investment conditions, resulting in high Defined Contribution benefits for people retiring in favourable times and low, inadequate Defined Contribution benefits for people retiring in unfavourable times.
- Government legislation providing means-tested retirement pensions which are greater than the mandatory State retirement pensions, destroying any incentive to save voluntarily for retirement for lower earners.
- Mis-selling of inappropriate "Retail" pension products by the Financial Services sector, where it has become clear that a high proportion – often effectively more than one quarter – of pension contributions have been used up in meeting investment, administration and commission charges.

Avoiding these pitfalls

These pitfalls can be avoided by:

- designing the SPPS benefits along the lines of the hybrid design in this report
- introducing appropriate "design" control levers to manage strategically the sustainability of the FPPS costs – along the lines of the design parameters proposed in this report
- monitoring the financing of the FPPS and SPPS benefits on a regular basis, using the proposed control levers in a systematic way – enabling members to plan confidently for their retirement
- communicating effectively to contributing members so that they can understand how their benefits are building up, by providing regular benefit statements of their combined FPPS/SPPS entitlements.

High standards of governance

It will be particularly important to ensure the SPPS operates to a high standard of governance – under the MFSA regulatory framework – by creating appropriate procedures for:

(a) the qualifications and continuous developmental training of Scheme Directors and Fund Directors (using the terminology in Appendix VIII of the White Paper)

(b) the appointment of the Non-Executive Scheme Directors through elections from appropriate "constituencies" to a nationwide consultation group – who will receive regular briefing/training and from whom Non-Executive Scheme Directors can be selected

(c) reporting, reviewing and learning lessons from any breach in the required standards of governance

(d) the creation of a limited number of competing Funds – with the MFSA granting licences to appropriately qualified organisations – who bid for these licences through competitive tender

(e) the regulation of these competing Funds by the MFSA to encourage cost-efficiencies and innovation through competition (with the ultimate sanction of licence cancellation)

(f) ensuring cost-effective administration services are put in place with clear terms of reference and service level agreements

(g) ensuring effective investment management services are put in place, with clear objectives and guidelines for governing investment strategy and day-to-day investment management, using appropriately qualified investment management organisations

(h) effective communication to members and employers, allowing members to choose – either individually or, if they wish, with their sponsoring employer – how to invest their SPPS contributions between the various competing Funds available within the SPPS Scheme.

(i) the publication of annual reports and accounts (and other more user friendly communication) by Scheme Directors and Fund Directors – to evidence high governance standards and steps taken when those standards have been breached.

Economies of scale

The real benefits from achieving high standards of governance will be gained when the funds under management within the SPPS reach a substantial size.

If the mandatory SPPS Tier 1 contributions are set at 4% (split between employees and employer) for members under age 45 in 2007, the total amount contributed to the SPPS will amount to about Lm 16 million in the first year of mandatory contributions.

After about 5 years, these conditions can be expected to accumulate to about Lm 100 million. The total funds under investment could be considerably larger if a significant level of voluntary SPPS Tier 2

contributions are paid.

Within 10 years, the total funds under investment will enable significant economies of scale to be achieved, particularly on investment management charges.

Investment objective for the initial years when economies of scale are limited

It will be important to develop clear investment objectives for handling the investment of funds within the SPPS – in the initial years when economies of scale are limited:

- making use of passive investment vehicles with in-built economies of scale and low charges
- enabling competition between the licensed Fund managers through the part of their funds which are actively managed.

Diversification and investment within Malta

Proposals on specific diversification limits are given in section (7) of this report.

The issue of investing in Malta is important because it can result in significant economic implications.

Size and concentration of Malta quoted securities

The 2004: 3 Quarterly Review of the Central Bank of Malta indicates:

- the total market capitalisation of the Maltese Stock Exchange is about Lm 800m
- over Lm 550m of this comprises Maltese Government securities and corporate bonds
- of the Lm 250m in equities, over Lm 150m is in the banking sector and most of the remaining Lm 100m is concentrated in the telecom and tourism sectors.

Diversification outside Malta

This high level of concentration means the ability to diversify investments within Maltese equities is very limited. This points to diversification limits permitting a high level of diversification outside Malta.

The ability to improve investment opportunities by investing outside Malta will make even more sense if Malta joins the Euro - or fixes its exchange rate in advance of joining the Euro.

Investment in Maltese Government securities

On grounds of spreading risks through diversification, it would make sense to limit very tightly any investment in Maltese Government securities.

It can be argued that members contributing to the SPPS will already have a considerable stake in the Maltese Government, through the State Grants paid as social security contributions to the FPPS and Health Fund. From this base line, it may not be appropriate to increase that stake by investing SPPS assets in Maltese Government Securities.

Furthermore, our expectation is that the investment objectives will be set to outperform RPI inflation, both before and after retirement, enabling pensions to be provided after retirement at a level linked to RPI inflation. If this is the case, Government Securities – including those issued by other Euro countries – will not be attractive unless they are designed to provide returns linked to RPI inflation over long maturity periods.

Avoiding risks which are interdependent

Investing the SPPS funds within Malta will involve the following interdependent risks:

(a) the risk of poor performance of the Maltese economy

(b) linked to low rates of growth in wages as compared to RPI inflation – leading to higher FPPS deficits than those given in the World Bank's PROST projections (which assume wages will grow at 5½% p.a. as compared to RPI inflation of 2½% p.a.) and the risk of FPPS benefits being reduced further as a consequence of this

(c) linked to low investment performance in Maltese equity investments and a worsening in the credit rating and investment performance in Maltese bond investments – leading to lower SPPS benefits if the SPPS Funds have a material proportion of their assets invested within Malta.

Diversification outside Malta will help reduce these interdependent risks.

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5. Possible tax incentives

Objective (2)

The second objective requires:

a review of possible tax incentives for the SPPS, including the implications of these incentives for Government tax revenues.

Possible tax incentives

The range of possible tax incentives for the SPPS can be analysed by looking at:

(a) tax incentives when contributions are paid into the SPPS

(b) tax incentives applied to the accumulation of assets held within the SPPS

(c) tax incentives when benefits are paid out of the SPPS.

Using tax incentives to enhance the attractiveness of the SPPS

The perceived attractiveness of the SPPS will be enhanced to a greater extent if:

(c) the tax incentive is immediate rather than deferred (i.e. applied when contributions are paid in preference to when benefits are received)

(d) for defined contribution and hybrid asset accumulation schemes (see section (6) below), the assets held within each member's savings account accumulates without any Maltese tax deduction or penalty.

This points to excluding the SPPS contributions from the insured person's taxable income and applying the income tax to the pension benefits when they are received in retirement.

It also points to allowing the asset accumulation within each insured person's savings account to be free of Maltese tax on all forms of investment income and capital gains.

An alternative incentive might be for the Government to make additional contributions at a set ratio of the employee and employer contributions e.g. the Government could contribute Lm 1 for every Lm 10 of employee/employer contributions.

This method has the advantage that it is not influenced by marginal tax rates and makes the incentive worth the same for both low and high earners. Under a system of tax relief, the incentive is worth most to those paying tax at the highest level and the least to those who pay tax at the lowest level.

Impact on Government tax revenues of mandatory Tier 1 contributions

A consequence of this approach is that the tax incentives are immediate, whereas the taxation of the pension benefits may be deferred for many years. This has an obvious, immediate impact on Government tax revenues.

A solution to this potential disadvantage is to a make use of the fact that the employer's Class I contributions already enjoy immediate tax incentives:

- they are treated as a deduction from the taxable profits of the employer
- they are not included as part of the employee's taxable income.

In section (5) below, we recommend that the SPPS Tier 1 mandatory contributions are "carved out" of the existing Class I and Class II contributions. To avoid any sudden change in Government tax revenues – whilst allowing the SPPS Tier 1 mandatory contributions to qualify for full tax relief – we recommend that these contributions are "carved out" of the existing employer's Class I contributions.

The solution is not as straightforward for the self-employed because their Class I contributions are paid out of their after-tax income. To ensure the SPPS operates in a clear, transparent way for the self-employed, it may be appropriate to review the tax deductibility for the Class II contributions to bring them into line with Class I contributions – for example by making the "carved out" mandatory Tier 1 SPPS contributions tax deductible for the self employed as well as the employed.

Greater solidarity will be achieved – within the Tier 1 of the SPPS - if the employed and self-employed enjoy consistent tax relief on contributions paid and consistent taxation of benefits received.

Potential loss in Government tax revenues

If the "carve out" solution is not feasible, the mandatory SPPS Tier 1 contributions – recommended in the White Paper as 4% of basic wages of members under age 45 in 2007 and mandatory from 2010 – will result in extra contributions (potentially tax deductible) amounting to about Lm 16 million each year. If the average tax rate - on the part of taxable income to which the Lm 16 million tax deductible contributions apply – is 20%, then the loss in Government tax revenues will amount to 20% of Lm 16 million, or just over Lm 3 million each year.

This loss will increase steadily in future years as the members under age 45 in 2007 grow older. By 2027, the loss in Government tax revenues can be expected to increase to about Lm 12 million (expressed in terms of today's wage levels – i.e. without allowing for future wage increases), assuming the same 20% average tax rate but allowing for the SPPS Tier 1 contribution rate to increase to 10% as recommended in the White Paper.

Tax immunity

As already mentioned, full tax relief on all forms of investment income and capital gains is a powerfully visible incentive.

There is an added advantage if the legal owner of the SPPS assets is the Maltese Government – nevertheless held in practice by specialist custodian organisations, with the delegation of investment powers to a qualified Board of Directors under the Malta Financial Services Authority regulatory framework. This will facilitate the reduction of withholding tax on overseas investment if it is possible to make use of tax immunity (where Governments agree mutually not to tax each other).

Tax incentives for voluntary SPPS Tier 2 contributions

To ensure the SPPS is simple to understand – helping maintain trust and confidence in the Scheme – we recommend that the same tax incentives apply to voluntary SPPS Tier 2 contributions.

This approach provides the same tax relief whether the SPPS Tier 2 contributions are paid by the employer or the employee. This provides full flexibility to employers when designing remuneration packages. The capping to be placed on SPPS Tier 2 contributions is discussed in section (11).

Impact on Government tax revenues of voluntary Tier 2 contributions

Additional tax relief granted on voluntary SPPS Tier 2 contributions will result in an immediate loss of Government tax revenues.

This can be managed by controlling on a year-by-year basis the amount of Tier 2 contributions which is eligible for tax relief (either to a flat-sum limit or a percentage of basic pay limit). The limit on tax relief for Tier 2 contributions can be increased gradually year-by-year to avoid any sudden impact on Government tax revenues.

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6. Possible improvements to the SPPS

Objective (3)

The third objective requires:

proposals on how the SPPS – as proposed in the White Paper – could be improved.

Maximum Salary Limit for calculating contributions

We recommend that the Maximum Salary Limit (for calculating contributions) be defined as a separate limit, distinct from the Maximum Pensionable Income.

This will allow the Maximum Salary Limit to be revalued in line with the increase in the average basic wage, instead of inflation – applying to the Maximum Pensionable Income under Decision of Principle No. 35 of the White Paper.

The Maximum Salary Limit (Lm 6,841) is about 32% higher than the average basic wage (estimated to be Lm 5,200). It will be important to maintain this range of higher pay on which contributions are levied:

(a) to maintain the degree of cross-subsidy from higher paid to lower paid as the FPPS pension evolves into a flat-rate scheme (an inevitable consequence of the Maximum Pensionable Income increasing in line with inflation)

(b) to maintain a broad range of pay on which the SPPS contributions and pension benefits are based.

If the Maximum Salary Limit were to be revalued in line with RPI indexation:

(a) it would progressively apply to more and more insured persons, evolving into a flat-rate contribution which would need to be set at a level which is high for the lower paid – and corresponding low for the higher paid

(b) it would equally erode the contribution base for SPPS contributions, leading to inadequate benefits for the majority of insured persons – other than the lower paid.

Minimum pension guarantee

In accordance with Decision of Principle No. 04, the proposal is to revalue the Minimum Pension Guarantee each year in line with RPI indexation (the White Paper also covers this on pages 89 and 92).

With the level of average basic wage anticipated to increase at a rate faster than RPI indexation, this will result in the Minimum Pension Guarantee progressively becoming a smaller proportion of the average basic wage.

We recommend that the long-term financial strategy for the FPPS be established with a "control lever" which allows the level of the Minimum Pension Guarantee to be stabilised at a chosen proportion of the average basic wage. At this chosen point, the Minimum Pension Guarantee would be revalued in line with the rate of increase in the average basic wage.

This recognises that social exclusion and risk-of-poverty are concepts which in practice are judged relative to the growing prosperity of wage earners – particularly in periods of significant real wage growth relative to RPI inflation.

For illustrative purposes, we have assumed in section (12) of this report that the Minimum Pension Guarantee will be stabilised at a chosen level equal to 28% of the average basic wage.

Minimum Wage

In the past, the level of the Minimum Wage has been revalued each year in line with COLA indexation. We understand that over the last 30 years or so, the level of the Minimum Wage has declined from a level close to the average basic wage to now Lm 2,983 – equivalent to 56% of the average basic wage today.

If the status quo is maintained, the Minimum Wage will continue to decline when expressed as a percentage of the average basic wage.

In planning the long-term financial strategy for the FPPS, we recommend that the Minimum Wage be assumed to stabilise at a chosen level when expressed as a percentage of the average basic wage. The level of this stabilisation of the Minimum Wage is another "control lever".

For illustrative purposes, we have assumed in section (12) of this report that the Minimum Wage will be stabilised at 40% of the average basic wage. If the Minimum Pension Guarantee is stabilised at 28% of the average basic wage, the Minimum Pension Guarantee would be 70% of the stabilised Minimum Wage.

"Carve out" of SPPS Tier 1 contributions

We recommend that the mandatory SPPS Tier 1 contributions are not paid on top of the existing Class I and Class II contributions, but are instead "carved out" of these existing contributions.

This will avoid any distortion in the labour market – as currently exists at age 18 – at the proposed cut-off age of 45 for the mandatory SPPS Tier 1 contributions (see section (12) of this report).

It will also avoid the need for a sudden increase in social security contributions for members under the cut-off age.

This has the advantage that older members – entitled to comparatively high FPPS pensions – will not contribute at a lower rate than younger members who will receive comparatively low FPPS pensions.

Phased introduction of the mandatory SPPS Tier 1 structure

"Carving out" the SPPS Tier 1 contributions will mean no change in the overall level of contributions paid. This should greatly simplify the introduction of the mandatory SPPS Tier 1 structure.

In accordance with Decision of Principle No. 02, the introduction could, for example, be phased in by focusing first on a few larger employers with well-developed payroll systems, treating these employers as pilot projects to iron-out any implementation issues.

The implementation roll-out could gradually be extended over say a period of 4 years to include all employers and the self-employed, using this time to develop cost–effective and timely contribution collection processes – essential for the SPPS where the benefits will be based on the accumulation of invested contributions.

Because there are no additional contributions, it would be possible to design the implementation process so that all insured persons under age 45 paying mandatory SPPS Tier 1 contributions are treated as having retroactively joined the SPPS from the initial launch date of the SPPS. There are clear advantages in this approach, demonstrating equal treatment of all insured persons under age 45 who join the mandatory SPPS Tier 1 structure.

This approach would mean there would be no need to start with voluntary participation in the early years (as proposed under Decision of Principle No.'s 21 and 23).

EU directive on age discrimination

It is worth mentioning the forthcoming EU directive on age discrimination. The impact of this directive on pension contributions is not yet known. Nonetheless, there may be advantages in adopting the "carving out" proposal – avoiding higher contribution rates for younger generations who will receive lower overall benefits than older generations.

Competition and choice in the mandatory SPPS Tier 1 structure

In accordance with Decision of Principle No. 09, we recommend that the SPPS Tier 1 structure be designed so that a small number of competing organisations be permitted under a common, regulated SPPS structure. The regulatory objective would be to ensure sufficient competition to encourage innovative and effective management – competition going hand in hand with freedom of choice for the insured contributor – whilst at the same time creating an environment that exploits economies of scale.

Given the relatively small size of accumulated assets in the early years – when the phased implementation will still be rolling-out – it would make sense to introduce gradually the competitive, regulated structure, in line with the growing scope for economies of scale.

Competition and choice in the voluntary SPPS Tier 2 structure

Likewise, for the voluntary SPPS Tier 2 structure, it will be important to develop a strategy for creating competition and choice – as the tax relief limits on voluntary SPPS Tier 2 contributions are gradually phased–in.

Avoiding "cliffs" in the design of the FPPS and SPPS

We recommend the phasing of the proposed changes to the FPPS be reviewed, to investigate whether there are any "cliffs" in the proposed design which could be reduced.

By "cliffs", we mean a sudden change in the level of a person's benefit as a result of being a day younger or a day older.

For example, the phased change in retirement age (in accordance with Decision of Principles No. 29) involves the retirement age moving by two years from age 63 to age 65 by being just under 49 on 1 January 2007, as compared to just over 49.

It would be possible to reduce this two-year "cliff" to two separate one-year "cliffs" by moving from 63 to 64 for those just under 50 on 1 January 2007, and by moving from 64 to 65 for those just under 49 on 1 January 2007.

Likewise, it would be possible to have a larger number of smaller "cliffs" to phase in:

(a) the change in the contribution period for the FPPS pension (in accordance with Decision of Principle No. 33)

(b) the change in the wage averaging period from 3 years (for the employed) to 10 years (in accordance with Decision of Principle No. 34).

The implications of these proposals are considered in section (13).

Option to take part of the SPPS benefits as a lump sum

We recommend that Decision of Principle No. 18 be reviewed to establish:

(a) the extent of this lump sum option

(b) the tax treatment of this lump sum benefit.

We recommend that the mandatory benefits of Tier 1 of SPPS be designed solely to provide an adequate level of pension income in retirement.

On this basis, any lump sum option would be restricted to Tier 2 of SPPS, or even to the Third Pillar Pension Scheme (TPPS).

To focus the tax incentives on encouraging adequate pension provision, we recommend that the SPPS lump sum benefit be taxed in the same way as pension benefits.

Alternatively, the TPPS could be earmarked as the sole vehicle for lump sum benefit – with tax incentives limited to:

(a) tax relief applying to the accumulation of assets

(b) no tax relief given on voluntary TPPS contributions

(c) no tax on the accumulated assets paid out as the TPPS lump sum benefit at retirement.

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7. Proposals on specific diversification limitations

Objective (4)

The fourth objective requires:

proposals on the recommendation in the White Paper covered by Decision of Principle 14: specified limitations to determine the diversification parameters of the investment portfolio of the pension fund.

Setting the framework

During the period of phased implementation of the SPPS, we envisage that a common set of principles and limits would apply to the SPPS structure where initially economies of scale are limited, and correspondingly there may be limited competition and choice.

When the phased implementation of the SPPS is completed and the overall level of SPPS assets is sufficient to justify significant economies of scale in investment management charges, the regulatory environment can be modified to permit and encourage more competition and choice.

In this new environment, there would be a number of regulated, competing Retirement Funds. We believe that each Retirement Fund should have to adhere to a common set of principles and limits, but each Retirement Fund Administrator should be able to introduce further constraints, determined by the Directors, providing these do not breach the common principles and limits.

Dependence on the Maltese economy

Compared to global opportunities, investment opportunities are limited in Malta. The greater the investment of SPPS assets in Malta, the more the fortunes of the SPPS will be linked with those of Malta. Other countries in a similar position to Malta have determined that all their pension assets should be invested outside their own islands to ensure that the pension assets can prosper even when the local economy may not be buoyant.

We suggest that the rules should be set to determine the maximum of the assets of any Retirement Fund which may be invested locally, and this maximum depends on the extent to which it is likely that the prices of the available local assets would be affected by any pension fund contributions.

It would, for example, be undesirable for the SPPS asset flows to artificially inflate the prices of local assets to unrealistic levels. Given that wide investment opportunities are available globally, we believe that the maximum should be set at a fairly low figure, even if not at 0% as in some countries.

Diversification

SPPS assets should be diversified, by type of investment, by industry and by country. Limits could be set up for each, but a general diversification requirement such as applies elsewhere may suffice. However, a maximum should be set of the exposure to any single entity (such as 5% in the equity of a single company) to reduce vulnerability to any single event.

Self investment

An employee is already reliant on the solvency of his employer for his salary and hence there is a case for ensuring that he needs to have no reliance on his employer for his retirement income. This would lead to a prohibition on self investment in the equity or debt of the employer, or in any property where the employer is a tenant.

This principle means that time limits need to be set on contributions from an employer to avoid the creation of a debt to the Retirement Fund from late contributions. Some flexibility on this approach occurs in some countries, but it would be best to ensure effective contribution collection processes are adopted – rather than only rely on penalties for late payment of contributions.

Marketability

Since individuals will be able to change provider, with no hidden costs, most of the assets need to be marketable in order to avoid remaining beneficiaries being exposed to high levels of unmarketable assets if there were substantial transfers from a poorly performing provider. We believe that a maximum level of assets whose value is unquoted should be set.

Asset category limits

Historically many countries have had minimum levels of domestic bonds and/or maximum levels of equities which must be held. Although bonds have generally performed well in the last two decades as interest rates have declined on a global basis, pension schemes need to invest over long periods of time and the assets held need to provide real rates of return. Conventional bonds can be appropriate assets where benefits are defined in monetary terms but are less suitable where benefits are designed to meet benefit targets linked to wage levels at retirement, and post-retirement RPI indexation targets.

We believe that it may be beneficial not to set in stone very prescriptive limits or ranges for the main asset categories such as bonds, equities, and property - but if this is done it should be capable of variation to accommodate changing investment conditions over time and new asset categories.

It is worth mentioning that the EU pensions directive will require a qualitative “prudent person” approach, replacing the quantitative investment restrictions currently operated by many European countries.

Currency

The benefits will be payable in local currency, and many of the assets will be in other currencies. There is a case for limiting the proportion of the overall assets which is exposed to overseas currencies, and this

can be done by requiring the use of forward foreign exchange contracts back into local currency. The adoption of the Euro is clearly a relevant issue.

Gearing

Some types of asset, e.g. derivatives, can be used to achieve greater exposure and diversity than could be obtained from the available assets using physical asset types. Gearing needs to be controlled, if allowed at all, although derivatives when used on an un-geared basis can be a useful investment management tool.

The key issue is to restrict gearing and focus the use of derivatives on achieving risk-reduction and greater diversity.

Real estate

The characteristics of real estate (property) vary greatly between countries, and exposure to real estate can be via the equity market, real estate investment trusts (REITs), direct purchase of freehold or leasehold interests, or by loans or mortgages.

As mentioned above we do believe that there should be a limit on local investments and this should cover local investment in real estate. Limits on marketability may be sufficient to avoid setting specific limits on unquoted real estate elsewhere.

REITs and equity shares in property companies should in our view be treated as quoted investments and come within any limits for quoted equities, or specific limits for REITs which may be introduced.

8. Cut-off age for introducing mandatory SPPS contributions

Objective (5)

The fifth objective requires recommendations on:

the cut-off age for the introduction of the mandatory contribution.

Proposals set out in the White Paper

Decision Principles 19 and 21 of the White Paper set out the need to decide how SPPS Tier 1 is introduced on a mandatory basis.

The White Paper contains projections which assume that the SPPS is introduced on a mandatory basis for persons who are 45 years of age or younger.

The age at which the SPPS Tier 1 could become mandatory will be governed by the level of total benefits that are considered adequate and, hence, also by the benefits provided by the FPPS. In section (5) of this report we comment on the desire to avoid "cliffs" in the overall design. There are a number of potential "cliffs" in the FPPS design proposals, when considered alone. The biggest impacts are caused by the proposed changes to the FPPS wages averaging period – in particular, when moving from the current best consecutive three years in the last ten (for employees) to the average of 40 years of contributions accumulation history.

Projections of the FPPS and SPPS Tier 1

We have produced projections of the FPPS benefit for people who are aged between 25 and 60, on introduction of the SPPS, taking account of the design proposals set out in the White Paper. We have also produced projections of the SPPS Tier 1 benefits for the same individuals. This was repeated for people currently earning:

- the Minimum Wage (currently LM 2,892)
- the estimated average basic wage (Lm 5,200); and
- the Maximum Salary Limit (currently Lm 6,841).

By considering the FPPS and SPPS Tier 1 benefits together, based on our assumptions which are set out in Appendix A, we propose that the SPPS Tier 1 should be mandatory for people aged under 45 on its introduction.

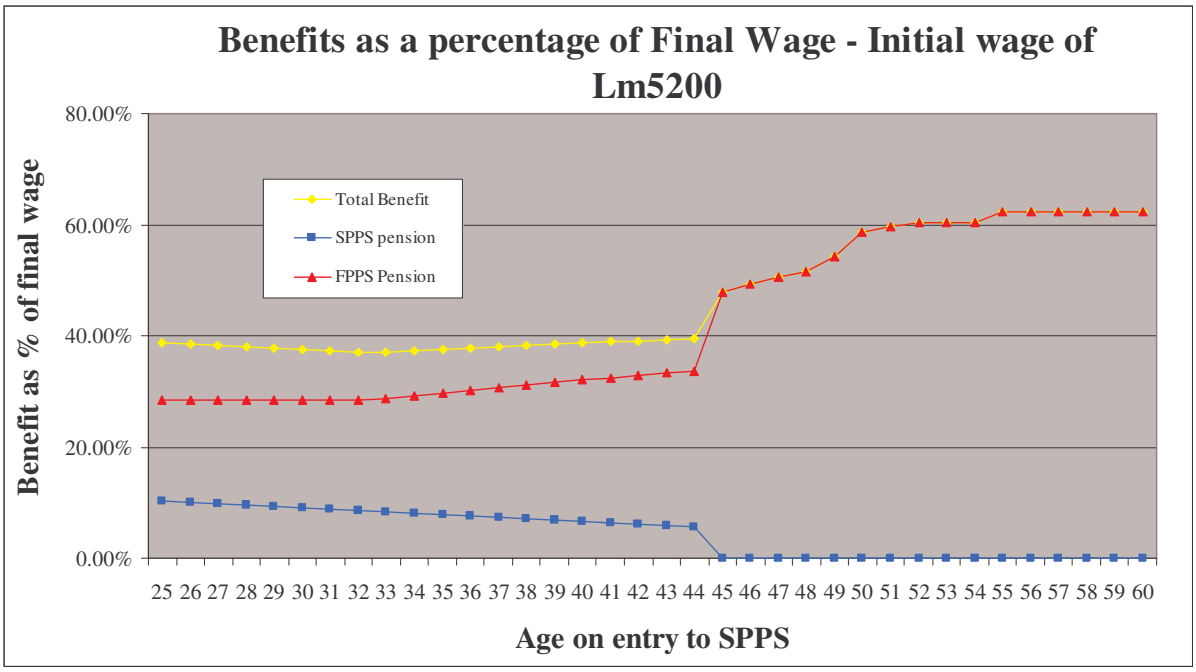
Details of the modelling that we have undertaken (and the assumptions underlying the modelling) can be found in the section (12) of this report.

Projections for people earning the estimated average basic wage

The graph below sets out the projected FPPS and SPPS Tier 1 pension as a percentage of the wage received at retirement for people earning the estimated average basic wage, aged between 25 and 60 on introduction of the SPPS.

The SPPS Tier 1 pension is based on overall contributions of 4% of basic wage. (Our proposal is to "carve out" the 4% entirely from employer contributions).

This example is based on the proposals set out in the White Paper, but with the split between the Maximum Salary Limit and the Maximum Pensionable Earnings. It also includes stabilisation of the Minimum wage, which we have assumed to occur at 40% of the average basic wage. We explore the effect of different levels of the Minimum Wage in section (14).



The impact of the proposed changes to the FPPS can be clearly seen where the "cliff" changes occur at ages:

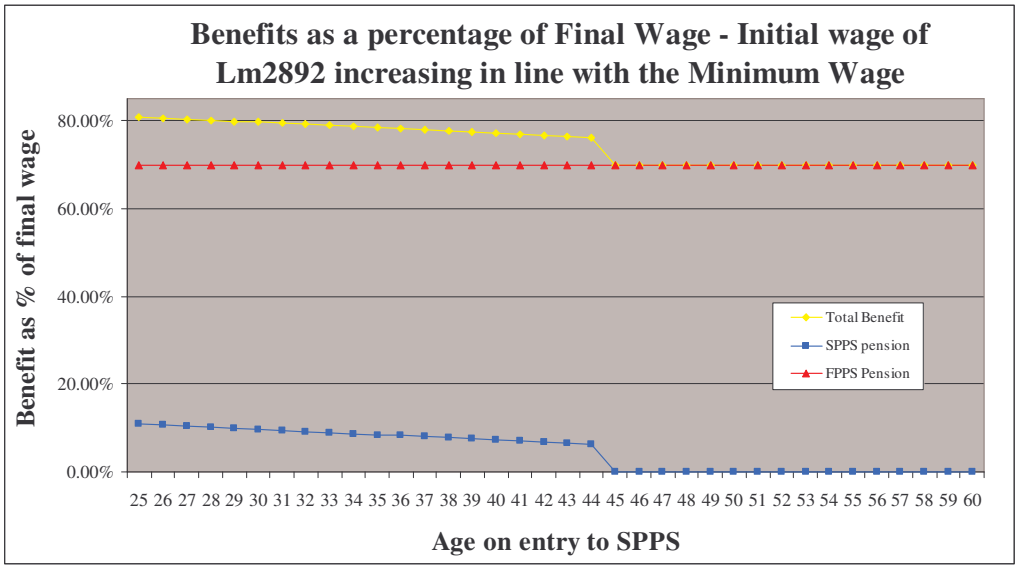
- 54 to 55 (changing from a 3 year to a 5 year base-line);
- 49 to 50 (changing from a 5 year to a 10 year base-line); and
- 44 to 45 (changing from a 10 year to a 40 year base-line).

The biggest of these "cliff" impacts occurs between ages 44 and 45. The impact of the Minimum Pension Guarantee can also be seen for people aged 32 and younger (where the red line flattens out at 28%).

We propose that the SPPS is made mandatory for people aged under 45 on its introduction. This will allow the lower FPPS pension – below the "cliff" at ages 44 to 45 – to be offset, to an extent, by the SPPS Tier 1 benefits. This should allow the total FPPS and SPPS Tier 1 pension to be maintained at above 37% of wage at retirement, for persons whose earnings over their career are equal to the average basic wage.

Projections for people earning the Minimum Wage

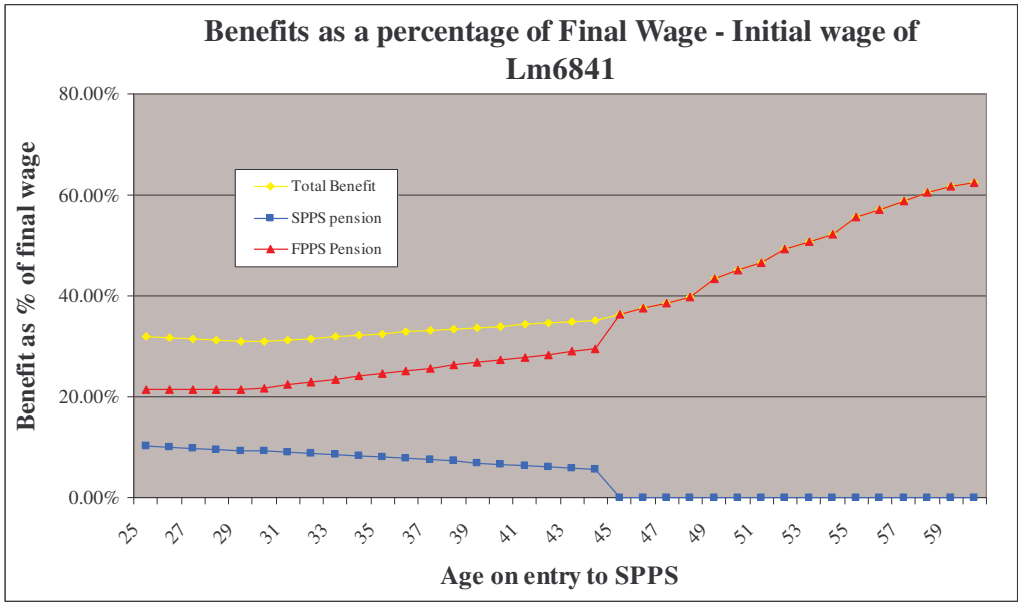
The graph below sets out the projected FPPS and SPPS Tier 1 pension as a percentage of the wage received at retirement. It shows results for persons at each age between 25 and 60 on introduction of the SPPS, earning the Minimum Wage throughout their career.



This graph shows the larger impact of the Minimum Pension Guarantee for people on the Minimum Wage. The Minimum Pension Guarantee determines the FPPS pension for people over all the ages considered. The overall benefit has been kept at above 70% of the final wage and at about 80% for people aged 45 and under, for persons earning the Minimum Wage throughout their career.

Projections for people earning the Maximum Salary Limit

The graph below sets out the projected FPPS and SPPS Tier 1 pension as a percentage of the wage received at retirement for people aged between 25 and 60 on introduction of the SPPS, earning the Maximum Salary Limit throughout their career.



Setting the SPPS Tier 1 contribution rate at 4% overall, should allow the total benefit to be maintained above 30% of wage at retirement, for persons whose earnings over their career are equal to the Maximum Salary Limit. The FPPS pension provides a lower proportion of the total benefits than for people on lower wages and the Minimum Pension Guarantee does not affect the FPPS benefit for people aged 30 and over.

9. Quantum of SPPS contributions

Objective (6)

The sixth objective requires recommendations on:

the quantum of the Second Pillar savings contribution to be paid by an employee and the employer in the case of an employed person; and by the self-employed.

SSPS Tier 1 Contributions

Our analysis has concentrated on the contributions that could be paid by an employed person and their employer. We suggest that the treatment of the self-employed should take a structure that follows as a natural consequence of the employees/employer structure. In the graphs given in the previous section, we set the SPPS Tier 1 contribution rate at

- 2% of wage from the employee; and
- 2% of wage from the employer

We have assumed that the salary on which contributions are based is subject to the current Maximum Salary Limit, increasing in line with average wage inflation. (Noting that this will differ from the Maximum Pensionable Income on which FPPS contributions are based.)

These contributions could be structured in several different ways eg as set out above, or 4% from the employer – this is described in more detail in section (4) of this report.

Phasing of Contributions

The graphs given in the previous section were based on a total contribution rate of 4% of wage for all people aged under 45 on the introduction of the SPPS. This results in a benefit from SPPS Tier 1 which is lower for people who are closer to 45, than for people who are aged closer to 25. This is due to the shorter time to build up contributions before retirement. At ages where the Minimum Pension Guarantee is dictating the FPPS benefit, this results in a slightly downward sloping total FPPS and SPPS Tier 1 benefit by age on introduction of the SPPS.

The shape of the projected total FPPS/SPPS Tier 1 benefit by age on introduction of the SPPS could be altered. by setting the SPPS contribution rate differently for people of different ages and salaries on introduction of the SPPS, this may, however, prove complex to administer and to communicate to people.

Over time, the distortions that are currently present should disappear, as the FPPS and SPPS settle down and the whole population has experienced a similar history of contributions and benefit structure.

10. Indexation to be applied to the SPPS pension

Objective (7)

The seventh objective requires recommendations on:

the indexation to be applied to the SPPS.

Targeted Pension Increases

Our proposed design for the SPPS means that the indexation for the SPPS Tier 1 pension would not be guaranteed in advance. The SPPS could be targeted to provide pension increases after retirement in line with price inflation. The actual increases given would, however, depend on the performance of the assets of the Fund and how long people live.

Pension increases are one of the "control levers" to achieve adequacy and sustainability. These levers are a key element of the hybrid design that we are proposing.

11. Capping to be placed on SPPS contributions

Objective (8)

The eighth objective requires recommendations on:

the capping to be placed on the SPPS savings contribution in proportion to the wage or income earned.

Tier 1 capping

We propose that the SPPS Tier 1 contributions could be capped based on the Maximum Salary Limit which we recommend increases in line with average wages (see section (6) above).

Tier 2 capping

Additional voluntary contributions to SPPS Tier 2 could, for example, be capped:

a) as a flat-rate limit unrelated to the individual's wage;

b) as a percentage of the individual's wage;

c) as a percentage of the Maximum Salary Limit; or

d) as a limit on the total value of the individual's fund at retirement (any excess over the limit being permissible but subject to additional taxation).

Options c) and d) have the advantage that they provide more flexibility. This should help the low paid and the self-employed (who may have a variable income) to better save for retirement.

Option a) will provide more control over the utilisation of the contribution tax incentive (and the resulting impact on Government tax revenue).

12. Design of the SPPS pension

Objective (9)

The ninth objective requires:

definition of whether the SPPS should be introduced as a defined benefit or defined contribution scheme.

Defined Contribution (DC) vs Defined Benefit (DB)

The White Paper highlights the need for adequacy and sustainability for the new pension arrangements. The question is asked whether a DC or DB scheme would best achieve these goals.

DC schemes have the advantage of being sustainable, by the very nature of their design. They do, however, transfer the majority of risks from the employer to the individual, in particular

- the longevity risk (subject to the purchase of annuity from insurers)
- the investment risk
- career progression (with the employer avoiding the risk of increased costs in DB schemes based on final pay, when large pay increases occur close to retirement)

This means in practice that the benefit provided may not be seen as adequate in all circumstances, especially in times of poor investment returns and low bond yields.

DB schemes provide a benefit which can be designed to be adequate, but since the risks are carried by the Scheme, they can prove to be unsustainable due to the cost involved. The White Paper highlights the predicted problems of financing the benefits due to be paid under the current Two-Thirds Pension design, with contribution income expected to become insufficient to cover benefit outgo as soon as 2011.

We therefore propose that - to create a scheme that is both adequate and sustainable – a 'hybrid' design is adopted. A hybrid design takes elements from both DC and from DB to reduce the risks faced by individuals, whilst having a controllable and sustainable cost.

A Hybrid Design

Our proposed design would involve a pooling of risks. It has a DC element, in that the individual has a fund, which is increased according to how the assets have performed. However, it would not be a pure DC design as it would involve a gradual distribution of the returns to provide a smooth growth in the individual's fund.

On reaching retirement, some of an individual's fund could be taken as a lump sum, with the rest converted into a pension. It is worth noting that we have suggested in section (6) of this report that it may make sense to focus on pension provision in the SPPS and use the TPPS for

lump sum benefits.

The terms of conversion – from fund assets into monthly pension payments – would be kept under review and modified (with protections to enable retirement planning for those close to retirement) in order to control costs. Increases paid on pensions during retirement could again be controlled, depending on the performance of the assets held.

By having "control levers", such as the allocation of investment returns and the annuity conversion rate, the Scheme can be managed strategically with the aim of ensuring its costs are sustainable. Since this design involves the pooling of assets, it should allow greater freedom of investment than would be available to an individual, thus allowing a higher investment return to be targeted.

Both the higher potential investment returns and smoothing of returns will help to maintain the adequacy of benefits for each member of the Scheme.

Interaction with the FPPS

When considering the adequacy of this proposal, it will be important to take the FPPS into account and hence consider the overall level of benefits that are likely to be provided. The proposals for changes to the FPPS mean that the Maximum Pensionable Income will increase in line with price inflation. Since wages are expected to increase faster than prices, over time the Maximum Pensionable Income will become smaller in comparison to wages. Eventually wages will have risen sufficiently high that almost the entire population will earn more than the Maximum Pensionable Income. At this point, the FPPS effectively provides a flat-rate benefit since almost everyone is capped by the Maximum Pensionable Income – and subject to the Minimum Pension Guarantee.

We have set out an example below which shows how the FPPS and SPPS could work together in practice to provide benefits for people on a range of salaries. For the purpose of this example, we assume that the Minimum Pension Guarantee will be stabilised – increasing in line with the average basic wage – when it reaches 28% of the average basic wage.

We assume that the relationship between the current average wage and the proportion of people earning a salary equal to the current Maximum Salary Limit is maintained (currently the Maximum Salary Limit is 32% higher than the average basic wage).

We assume that the Minimum Wage is stabilised at the level of 40% of the average basic wage. This maintains the current relationship between the Minimum Wage and the Minimum Pension Guarantee – the latter being 70% of the former.

Basic Wage throughout career			Pension components		Combined pension	
Level of Basic Wage	**in today's wage terms**	**% of average basic wages**	**SPPS Tier 1 pension**	**FPPS pension**	**in today's wage terms**	**% of Basic Wage**
Maximum Salary Limit	6,841	132%	707	1,456	2,163	32%
Average basic wage	5,200	100%	537	1,456	1,993	38%
Minimum Wage	2,080	40%	225	1,456	1,681	81%

The overall benefit design can be changed by using the "control levers" of setting the level at which the Minimum Pension Guarantee and Minimum Wage is stabilised in relation to the average basic wage.

Setting the overall benefit design

Changing the (ultimately) flat-rate FPPS pension – by stabilising the Minimum Pension Guarantee at a different level – will impact lower earners more.

Increasing the target SPPS Tier 1 pension will affect all earners equally, but will require higher SPPS Tier 1 contributions.

13. Testing whether the proposals are sustainable

Objective (10)

The tenth objective requires:

an assessment of the extent to which the proposals in the actuarial study are sustainable, working with members of the Department of Social Security in order to base the assessment on the World Bank's PROST (Pension Reform Options Simulation Toolkit) model.

Introduction

This section investigates whether the proposals set out earlier in this report are sustainable by considering the projected macro economic effect. This forms objective 10 of our study. It has been achieved by working with representatives of the Department of Social Security to model the proposals on the World Bank's PROST model.

These results can then be compared with those contained in the White Paper to understand the economic impact of the proposals, as predicted by the PROST model. The 'deficit' figures produced as a result of this modelling are before the inclusion of any Government contributions (other than Class I contributions those paid as an employer).

It should be noted that, whilst the results of these projections have been reviewed at a high level, they have not been checked in detail. We recommend that more detailed checking is undertaken in conjunction with the World Bank before any proposals are implemented.

Scenario 1 assumptions

As per Lm 6750 Scenario, but with smoothed normal retirement age and smoothed service requirement

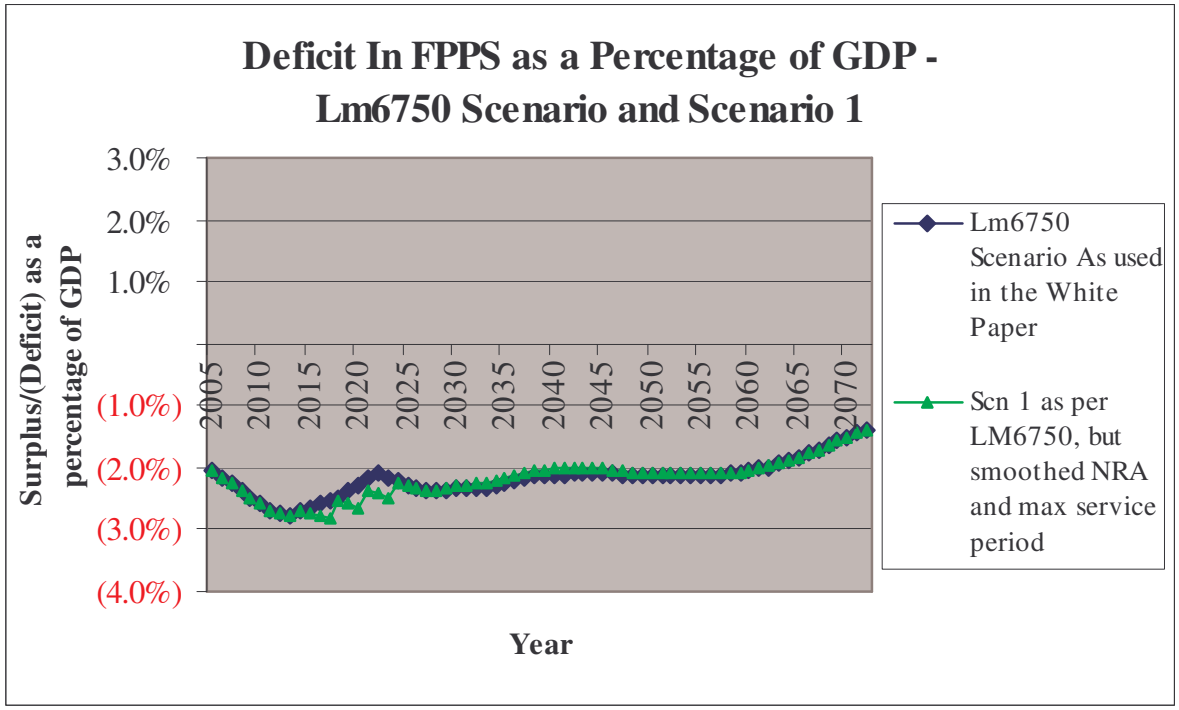
This Scenario is as per the 'Lm 6750' Scenario set out in the White Paper, with the exception that the normal retirement age and service requirement (for a full two-thirds benefit) have been smoothed. The table below contains details of these changes.

Smoothing of normal retirement age and service requirement

Year (of retirement)	Normal Retirement Age		Service Period	
	Lm 6750	Scenario 1	Lm 6750	Scenario 1
2002- 2013	61	61	30	30
2014	62	62	30	30
2015	62	62	30	31
2016	62	62	30	31
2017	62	62	30	31
2018	63	63	30	32
2019	63	63	30	32
2020	63	63	30	32
2021	63	64	30	33
2022	65	64	30	33
2023	65	64	30	33
2024	65	65	30	34
2025	65	65	30	34
2026	65	65	30	35
2027	65	65	35	35
2028	65	65	35	36
2029	65	65	35	36
2030	65	65	35	37
2031	65	65	35	37
2032	65	65	35	38
2033	65	65	40	38
2034	65	65	40	39
2035	65	65	40	39
2036	65	65	40	40

Scenario 1 results

The impact of these changes is demonstrated in the graph below, which was produced from output generated in PROST.



This graph demonstrates that these particular proposals only impact on certain cohorts of people, namely those retiring between 2015 and 2036 with the biggest impact visible between 2015 and 2025. The result is to produce a slightly higher deficit between 2015 and 2025, then a slightly lower deficit from 2029 to about 2060. The change in normal retirement age is responsible for the majority of the change in the deficit as most employees are assumed meet the service requirement for the full Two-Thirds benefit.

Scenario 2 assumptions

As per Scenario 1, but with split between contributions and benefits limits and stabilisation of Minimum Wage

This builds on Scenario 1 by introducing a split between the contribution and benefit limits:

- Maximum Salary Limit – on which contributions to the FPPS and SPPS are proposed to be based – is assumed to increase in line with wage inflation.
- Maximum Pensionable Income – on which FPPS benefits are based – is assumed to increase in line with RPI inflation.

The Minimum Wage is assumed to increase in line with COLA inflation until 2020, then in line with wages inflation (similarly for the Minimum Pension Guarantee). This is projected to result in the Minimum Wage stabilising at about 40% of the average basic wage. As is mentioned earlier in this report, the actual level at which the Minimum Wage stabilises is a "control lever". We have illustrated the

impact on the expected FPPS benefits in section (14) of this report.

The table below sets out the differences in indexation – comparing the Lm 6750 Scenario with Scenario 2 – for:

- The Minimum Pension Guarantee;
- Maximum Pensionable Income;
- Minimum Wage; and
- Maximum Salary Limit.

The table gives the percentage of the increase in each item (and year) that is linked to RPI inflation, and percentage linked to wages inflation.

Comparing the level of indexation between the Lm 6750 Scenario and Scenario 2

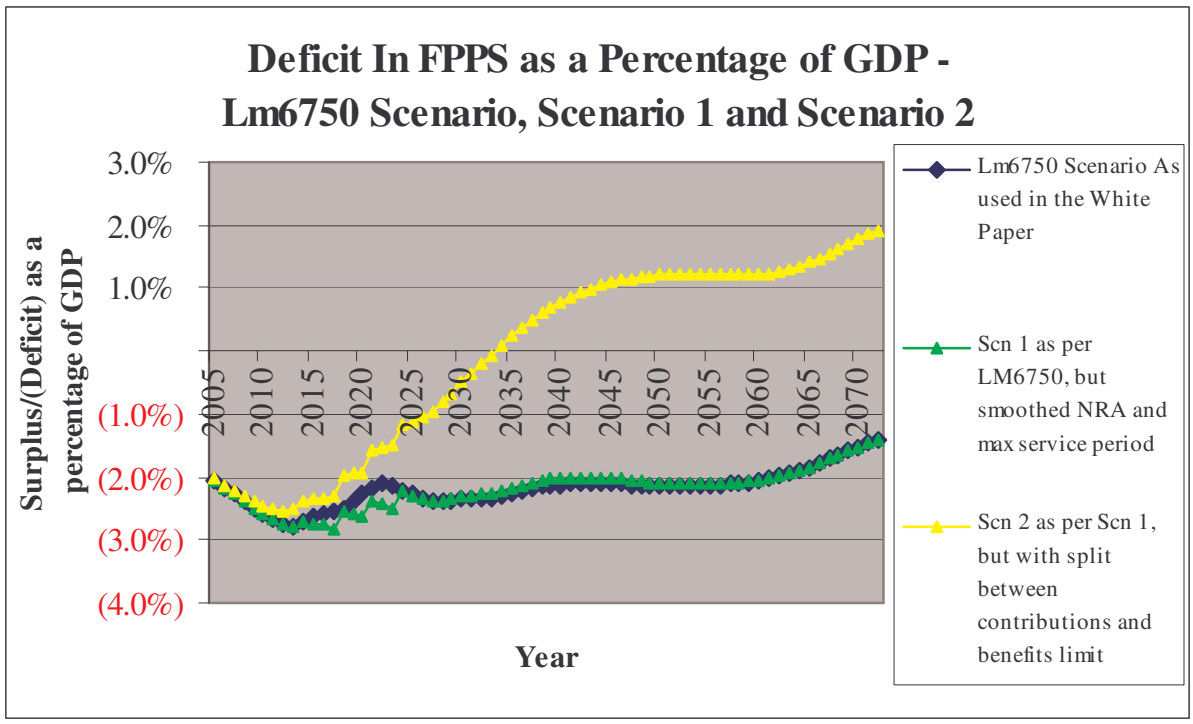
Year	Minimum Pension Guarantee		Benefits Limit (Max Pen Income)		Minimum Wage		Contributions Limit (Max Salary Limit)	
	LM 6750	Scenario 2	LM 6750	Scenario 2	LM 6750	Scenario 2	LM 6750	Scenario 2
	RPI/wages	RPI/wages	RPI/wages	RPI/wages	RPI/wages	RPI/wages	RPI/wages	RPI/wages
2002-04	50/50	50/50	80/0	80/0	50/50	50/50	80/0	80/0
2005	50/50	100/0	80/0	100/0	50/50	100/0	100/0	0/100
2006 - 20	50/50	100/0	80/0	100/0	50/50	100/0	100/0	0/100
2021 +	50/50	0/100	80/0	100/0	50/50	0/100	100/0	0/100

The indexation given in the above table (and the other tables that include indexation) is in relation to RPI inflation and wage inflation. For example:

- a "100/0" entry means that the relevant limit is assumed to increase in line with RPI inflation
- a "50/50" entry means that the relevant limit is assumed to increase at a rate half way between RPI inflation and wage inflation
- a "0/100" entry means that the relevant limit is assumed to increase in line with wage inflation.

Scenario 2 results

The graph below shows the impact that these changes have on the deficit as a percentage of GPP generated by PROST.



In Scenario 2 the Minimum Wage, and the Minimum Pension Guarantee, are assumed to increase in line with RPI for the first fifteen years of the projection, and then to increase in line with wages. The Minimum Wage therefore stabilises at about 40% of the average basic wage in this projection. We have illustrated the impact of changes in the level of the Minimum Wage on the benefits that an individual would be expected to receive, in section (14) of this report.

The impact caused by the change in these limits can be most easily demonstrated by looking at the third graph in Section (14) of this report. This graph sets out the various limits for an individual earning the average basic wage. In particular:

a) Under the Lm 6750 Scenario and Scenario 1, both contributions and benefits are based on the 'Salary of individual for FPPS'.

b) Under Scenario 2, the benefits continue to be based on the 'Salary of individual for FPPS' line. However, the contributions are based on the 'Salary of individual' line. Since the Maximum Salary Limit is maintained at 132% of the average basic wage, the contributions paid in respect of this individual are not affected by it.

The impact of this change on the FPPS deficit gets bigger over time as the difference between the Maximum Salary Limit and the Maximum Pensionable Income grows. After 2050, the gap in deficit between Lm 6750 Scenario and Scenario 2 stabilises because the FPPS benefits under Scenario 2 cease to fall – underpinned by the Minimum Pension Guarantee – in wage terms.

Scenario 3 assumptions – cut-off age 45

As per Scenario 2, but with smoothed wage averaging whilst retaining the cut-off age of 45

This Scenario contains the same limits and minima as Scenario 2 and also the same smoothed normal retirement age and smoothed service requirement as Scenario 1 and Scenario 2.

Scenario 3, however, also includes a smoothed change in the wages averaging period, whilst retaining a final "cliff" at age 45.

This "cliff" in the level of FPPS benefits determines the cut-off age of 45 at which SPPS contributions would be mandatory. This is a design parameter which is discussed further in section (3) of this report.

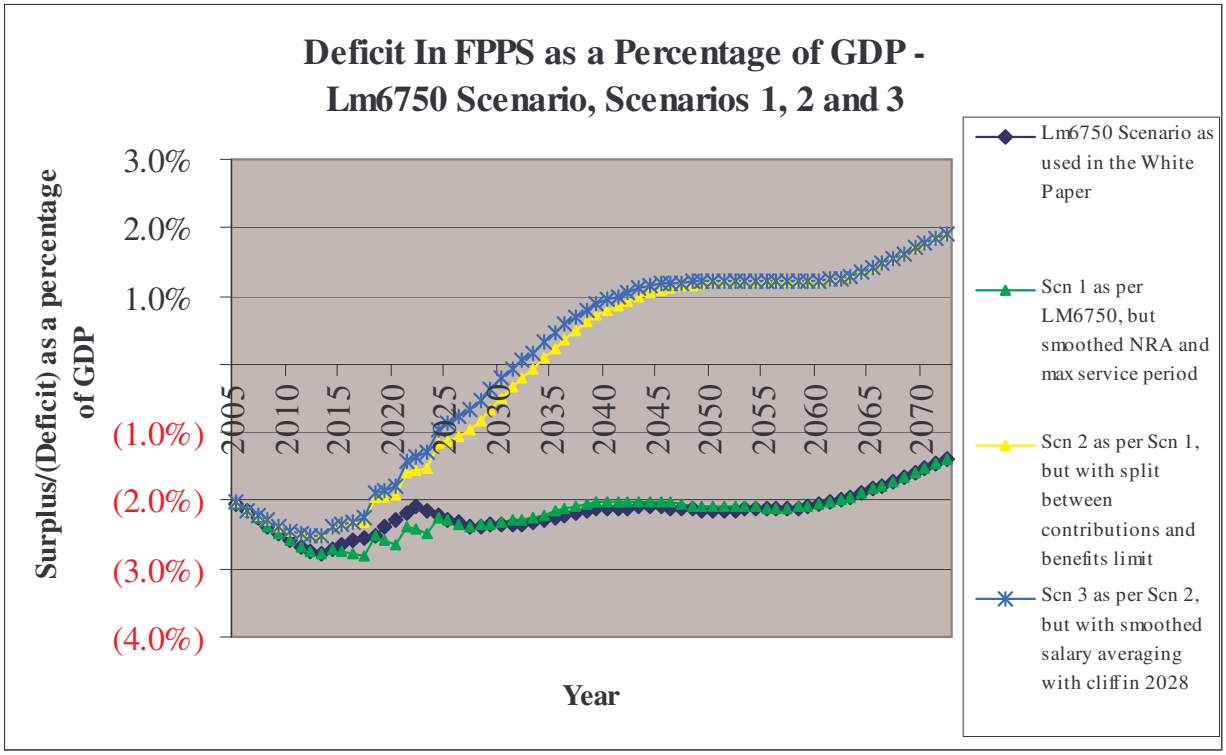
The table below sets out the wage averaging period assumed in the 'Lm 6750' Scenario and Scenario 3.

Year	Wage Averaging Period in years	
	Lm 6750	Scenario 3
2002 - 2013	4 (average)	4 (average)
2014 - 2015	5	7
2016	5	11
2017 - 2018	5	15
2019	5	19
2020	5	23
2021	10	23
2022	10	27
2023 – 2027	10	30
2028 +	40	40

By smoothing the wage averaging period in this way, a saving will be made in relation to the cohort of people who would have a larger wage averaging period. It retains the "cliff" between years 2027 and 2028, but has reduced the impact that it has on the FPPS benefits of an individual (by moving from 30 years to 40 years, rather than from 10 years to 40 years). The impact of this on an individual's benefits is considered further in section (14) of this report.

Scenario 3 results

The graph below sets out the impact that this change is expected to have on deficit as a percentage of GDP as produced by the PROST model.



The saving by introducing this proposed salary averaging can be seen between 2015 and 2052, by comparing Scenario 3 with Scenario 2. These savings are due to the longer wage averaging under Scenario 3 for people who retire between 2014 and 2027. In time, the deficit under Scenario 3 equals that under Scenario 2, once there are no longer pensions paid to people who retired between 2014 and 2027.

Scenario 4 assumptions – cut-off age 20

As per Scenario 2, but with smoothed wage averaging and a lower cut-off age of 20

This Scenario is similar to Scenario 3, except that the final "cliff" in wage averaging has been moved. In this Scenario the "cliff" occurs between 2052 and 2053. This means that the SPPS would logically be introduced as mandatory only for retirees on or after 2053 (i.e. members under age 20 in 2008).

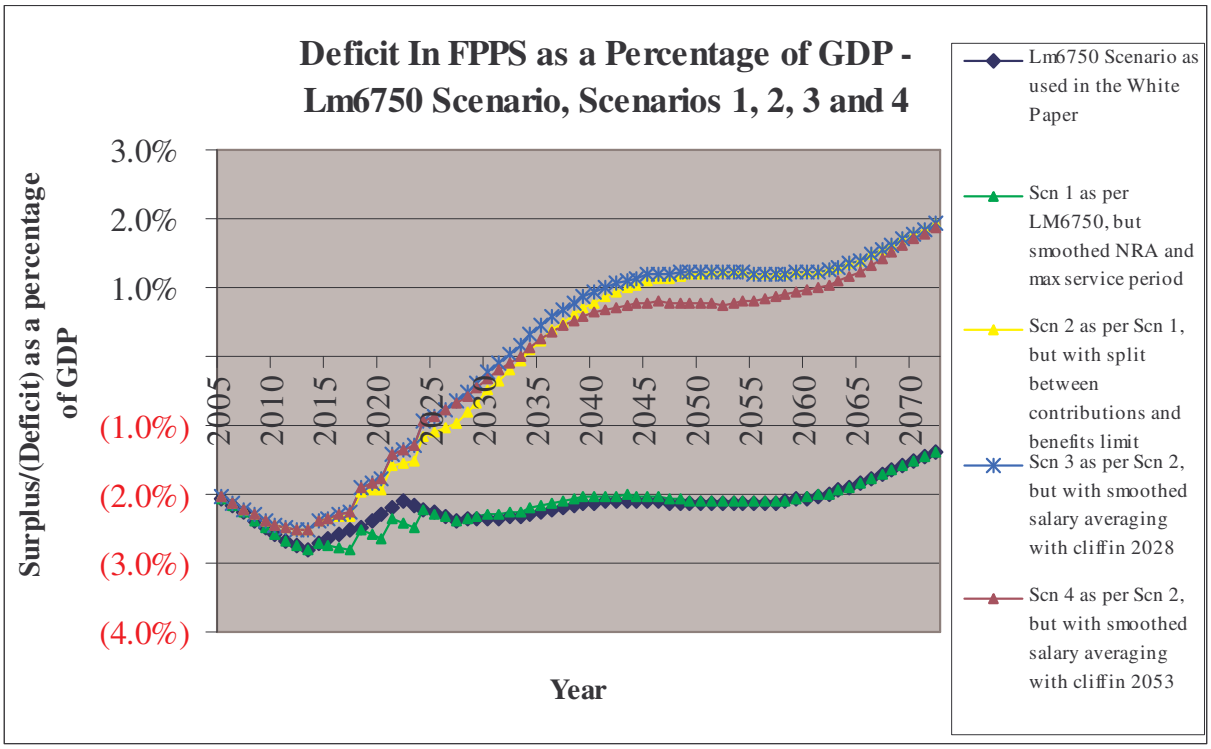
The table below sets out the wage averaging period assumed in the Lm 6750 Scenario, Scenario 3 and Scenario 4.

Year	Wage Averaging Period in years		
	Lm 6750	Scenario 3	Scenario 4
2002 - 2013	4	4	4
2014 - 2015	5	7	7
2016	5	11	11
2017 - 2018	5	15	15
2019	5	19	19
2020	5	23	23
2021	10	23	23
2022	10	27	27
2023- 2027	10	30	30
2028 - 2052	40	40	30
2053 +	40	40	40

Moving the "cliff" in this way is another design parameter. The impact of this change will be to increase the deficit as a percentage of GDP for the cohort of people affected (those retiring between 2028 and 2052).

Scenario 4 results

The graph below illustrates the impact of this proposal for the FPPS deficit as a percentage of GDP as produced by the PROST model.



The impact of this proposal can be seen from 2027 onwards. Eventually the lines for Scenario 3 and Scenario 4 would converge once the cohort of people affected by the change are no longer in receipt of a pension.

An impact that is not drawn out in this graph is the effect of the SPPS mandatory contributions. This is, in fact, a key difference between Scenarios 3 and 4, in that the initial population paying mandatory contributions under Scenario 4 would be very small, as compared with all employed and self-employed people under 45 that would be making mandatory contributions under Scenario 3.

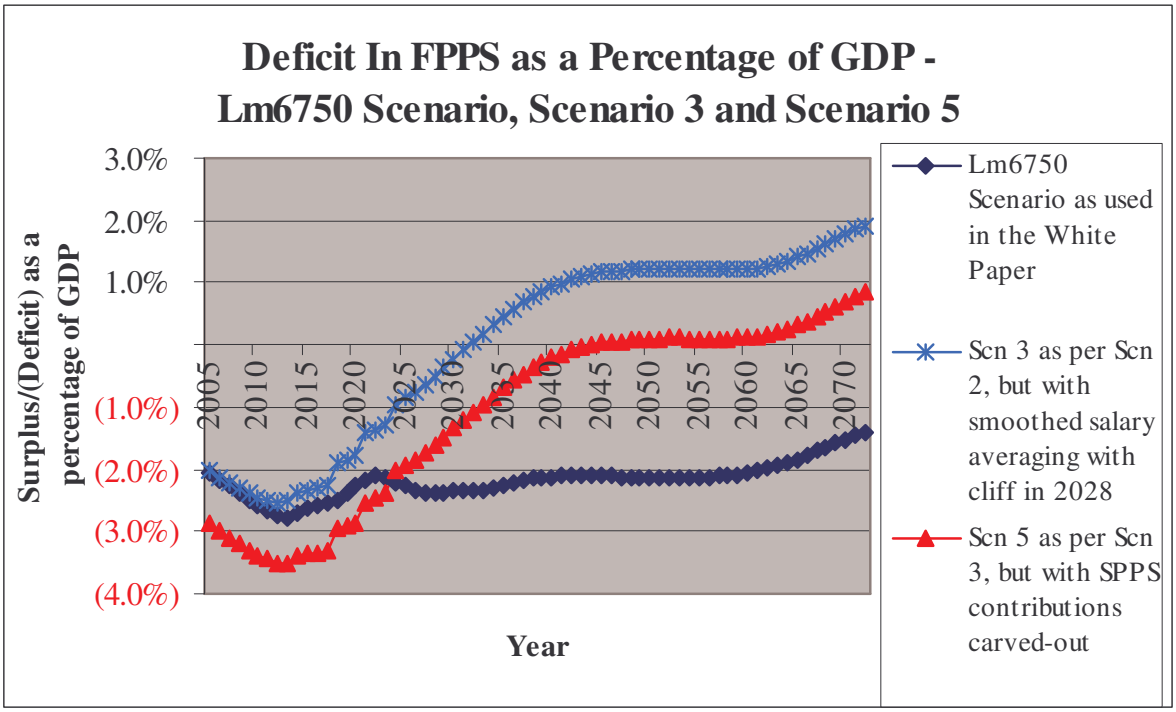
Over time, the deficit under Scenarios 2, 3 and 4 will equalise, as all members will eventually be entitled to the same benefit levels.

Funding the SPPS

One of the possible methods for funding the SPPS raised earlier in this report is to "carve-out" the SPPS contributions from the existing Social Security contributions. This would, if it is considered to be sustainable, have the smallest impact on the Maltese economy.

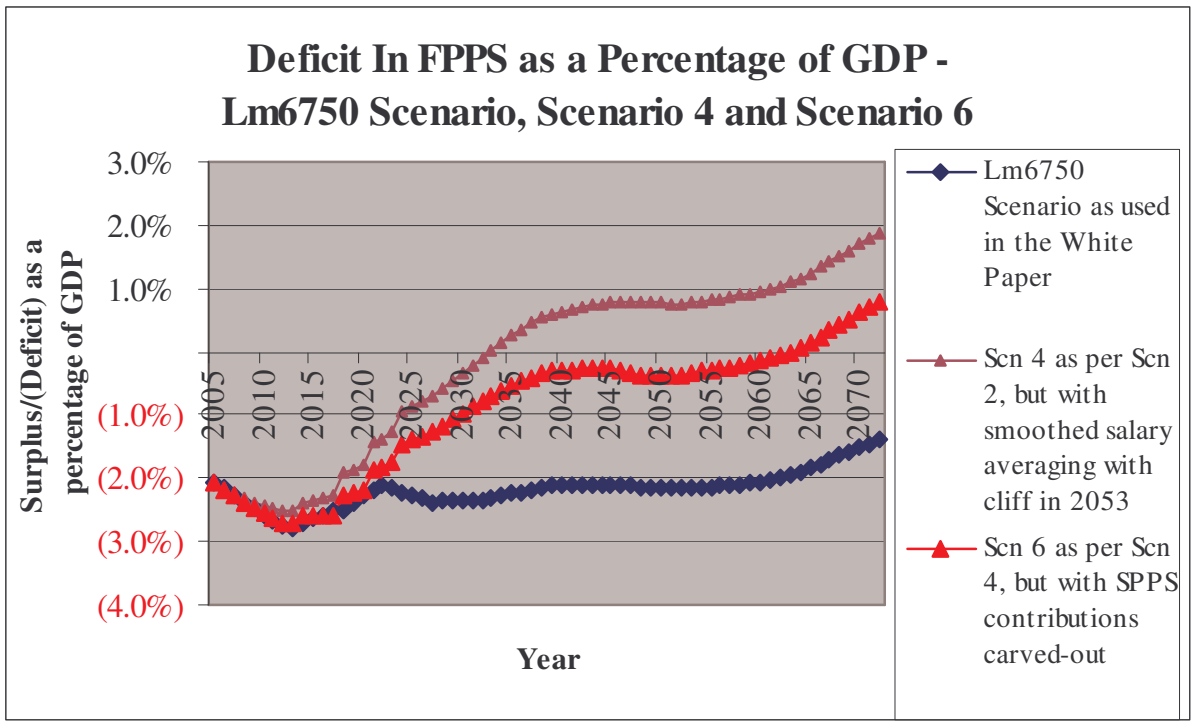
We have investigated the impact that "carving-out" the SPPS contributions would have on the FPPS deficit as a percentage of GDP. By working with representatives of the Department of Social Security we have modelled these proposals on PROST.

The graph below sets out the impact of "carving-out" the 4% SPPS contributions for Scenario 3 (with the "cliff" in wage averaging being present between years 2027 and 2028).



Initially, the SPPS mandatory contributions apply only to people under 45. As these people grow older, the impact of the "carve-out" increases until eventually the mandatory SPPS contributions apply to the whole of the working population. The gap between the deficit for Scenario 3 and Scenario 5, therefore, grows over time until the entire working population is subject to mandatory SPPS contributions.

The next graph shows the impact of introducing the "carve-out" to Scenario 4.

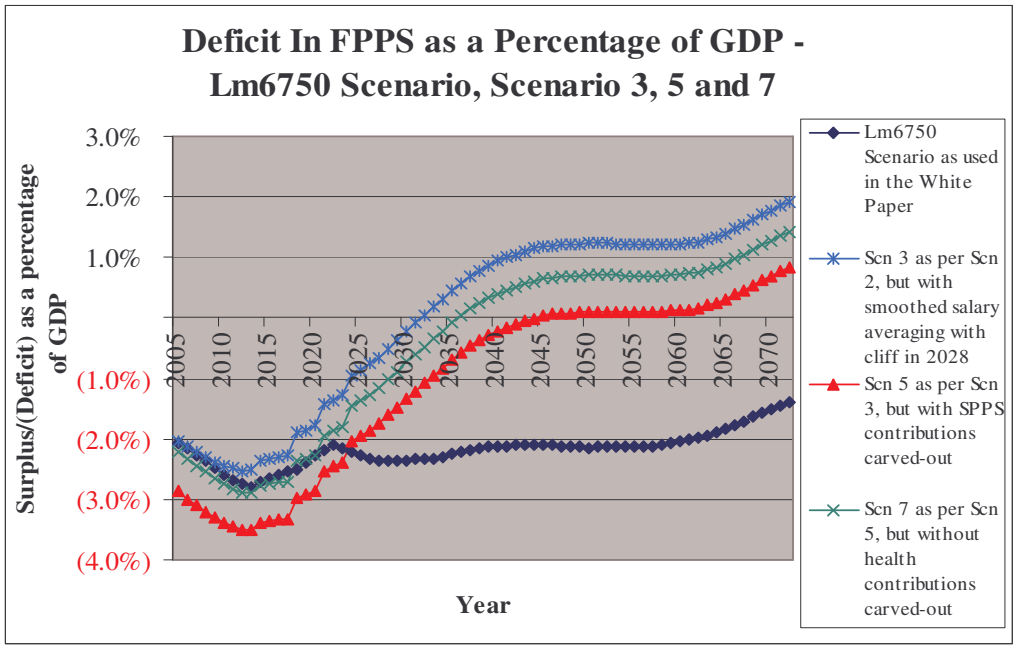


Since there would initially be a much smaller number of people subject to mandatory SPPS contributions (initially only those who are currently under 20 years old) than there were in Scenario 3, the effect of the "carve-out" is much smaller to begin with. Over time, as the number of people subject to mandatory SPPS contributions increases, the gap between the deficit under Scenario 4 and Scenario 6 (with the "carve-out") increase until the entire working population is subject to mandatory SPPS contributions.

By comparing Scenario 5 and Scenario 6, the power of moving the "cliff" in salary averaging, when the SPPS contributions are carved out from the Social Security contributions, is clear. This is another design parameter that can be set to control the impact of any "carve-out".

Retaining the health contributions under Scenario 3

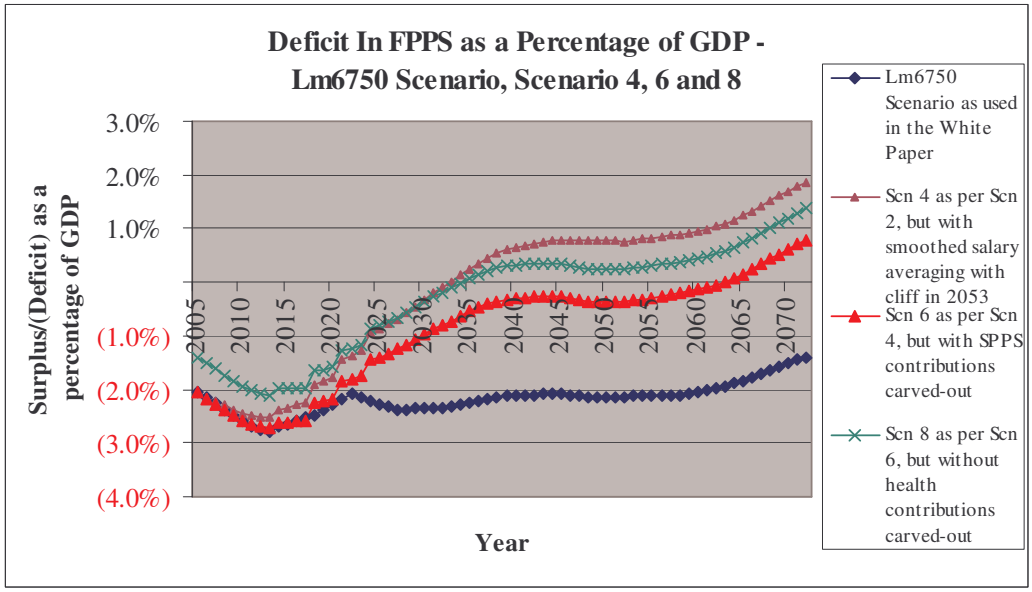
We have also investigated the effect of retaining the contributions that relate to health recurrent services. The graph below demonstrates the impact of retaining these contributions on Scenario 3.



By retaining the health contributions the deficit is kept to below 3% of GDP. The graph shows clearly the scope for diverting more contributions to health once the deficit in the FPPS has fallen below the level deemed as being acceptable.

Retaining the health contributions under Scenario 4

We have also investigated the effect of retaining the health contributions under Scenario 4. The results of the PROST modelling are shown in the next graph.



By retaining the health contributions under Scenario 4, the deficit would initially be reduced, as very little mandatory SPPS contributions would be payable at first. Over time there would again be scope for diverting more social security contributions to health once the FPPS deficit has reached an acceptable level.

Summary of PROST modelling

In this section of the report, we have shown various PROST projections to demonstrate how the government deficit may develop, and how the deficits can be controlled:

(a) by selecting the cut-off age

(b) by selecting the level of the Class I employee contributions (and corresponding self-employed contributions) channelled to the Health Fund.

It will be very important to launch the SPPS in a way that will build and maintain confidence. This can be best done by gaining economies of scale quickly – best achieved by keeping the cut-off age at or close to age 45.

If the cut-off age is kept at or close to age 45 – instead of lowering the cut-off age to reduce Government deficit in the early years - it may be possible to control the deficit by reallocating the contributions channelled to the Health Fund:

From	1% State Grant + 2% Class I employee contributions
To	initially 3% State Grant + no Class I employee contributions

From an accounting/budget viewpoint, this will switch the same amount of money from the Social Security Fund to the Health Fund. From the Government deficit viewpoint, this will mean no Class I contributions are channelled to the Health Fund.

In later years, there should be greater scope to channel more monies to the Health Fund using the actual social security contributions paid by employers, employees and the self-employed – as shown in the projections of the FPPS deficit under Scenarios 2 – 8.

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14. Modelling the combined FPPS/SPPS pension

Modelling undertaken

We have developed an interactive model which projects the FPPS and SPPS Tier 1 benefits of an individual, taking account of the proposals for the FPPS, set out in the White Paper and our design proposals for SPPS Tier 1.

We are able to investigate a number of factors in an interactive way, including:

- Salary of individual
- Salary growth of individual
- Age of start of projection
- SPPS investment return
- SPPS contribution rate
- SPPS pension increases
- Averaging applied to base-line for calculation FPPS benefits
- Revaluation of SPPS limits on contributions
- Price inflation
- Average wage inflation
- Targets for stabilising the Minimum Wage and Minimum Pension Guarantee at a chosen percentage of national average basic wage.

We are also able to adjust elements of the FPPS design.

In this section we give some further details of the results which have been produced for an individual projection. We will start by considering the 'base case' in some detail, before looking at some variations in age and salary.

Projection of the 'base case'

We have projected the FPPS and SPPS Tier 1 benefits for an individual who:

- is aged 25 at the start of the projection;
- earns the estimated average wage (Lm 5,200) at the start of the projection; and
- receives salary increases in line with our assumed average salary increases (of 5.5% pa).

All other assumptions are the same as those set out in Appendix A.

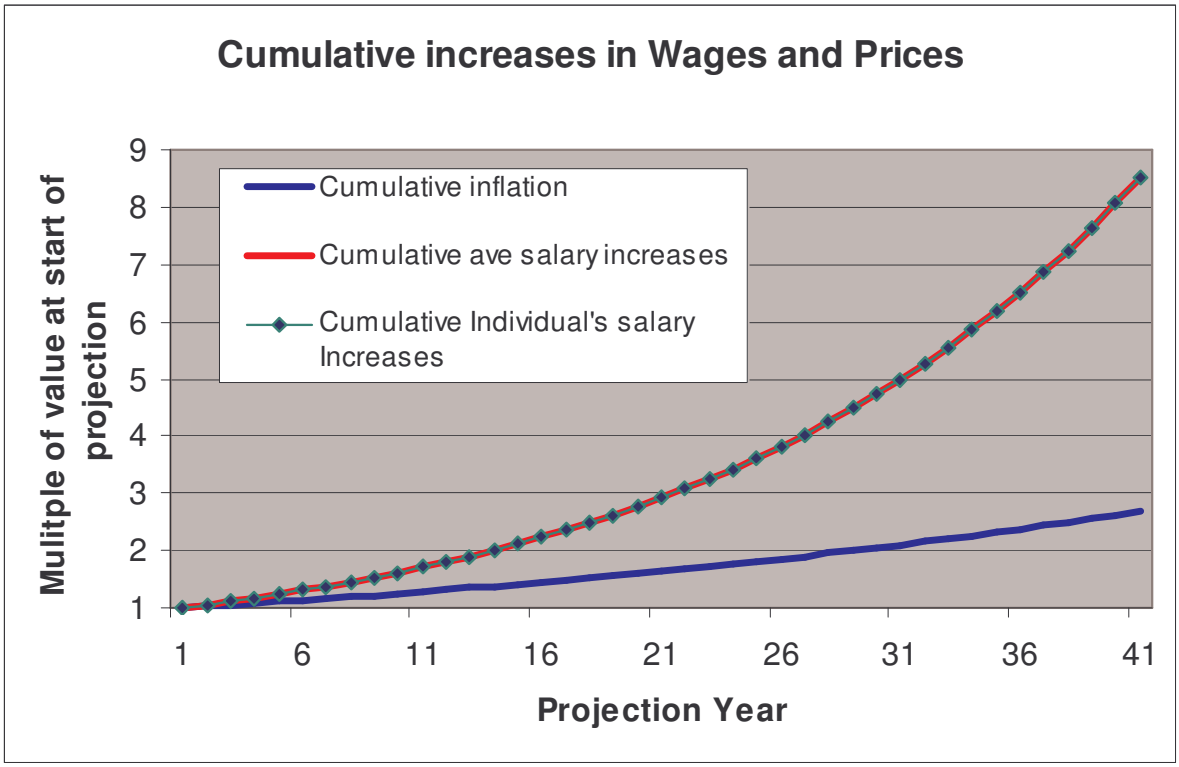
'Base case' projected FPPS benefits

Since the individual is aged 25, they will be affected by the proposed changes to the FPPS, in particular:

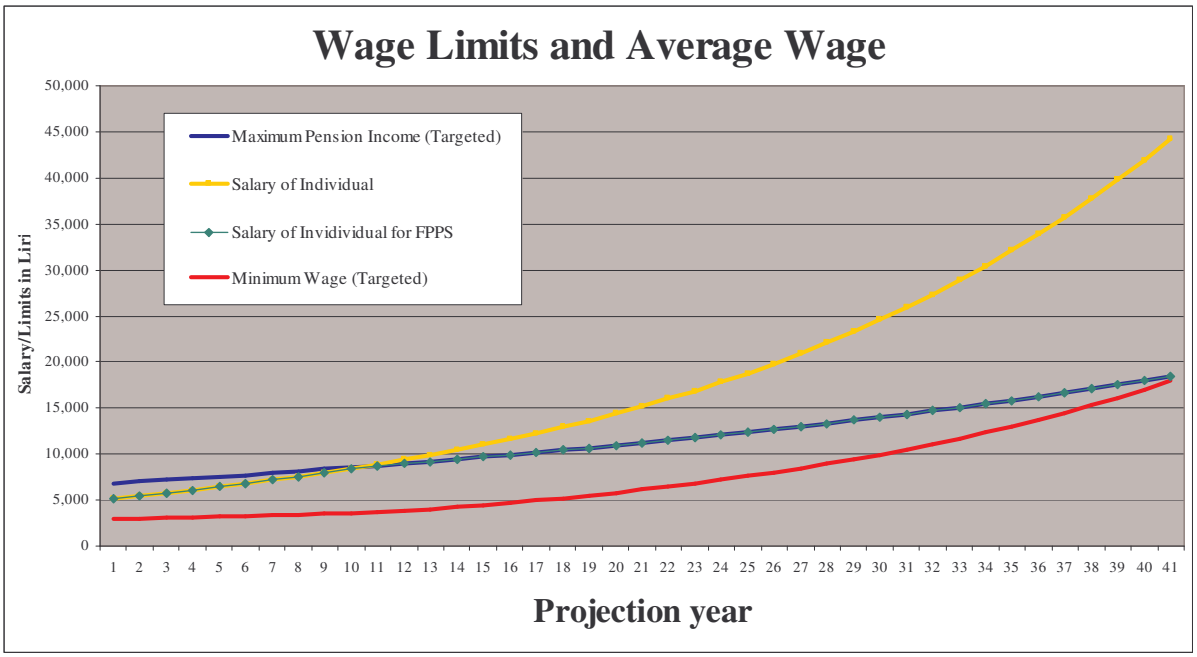
- the 40 year accumulation period;
- the 40 year base-line calculation of FPPS benefit; and
- a retirement age of 65.

Their FPPS benefit will also be affected by the increases applying to the Maximum Pensionable Income. Since the Maximum Pensionable Income is proposed to increase in line with price inflation, it will become lower in wage terms (since wages are assumed to grow faster than prices). The effect of this is demonstrated in the graph below, which gives the cumulative increase of:

- the individual's salary;
- the average salary; and
- price inflation.

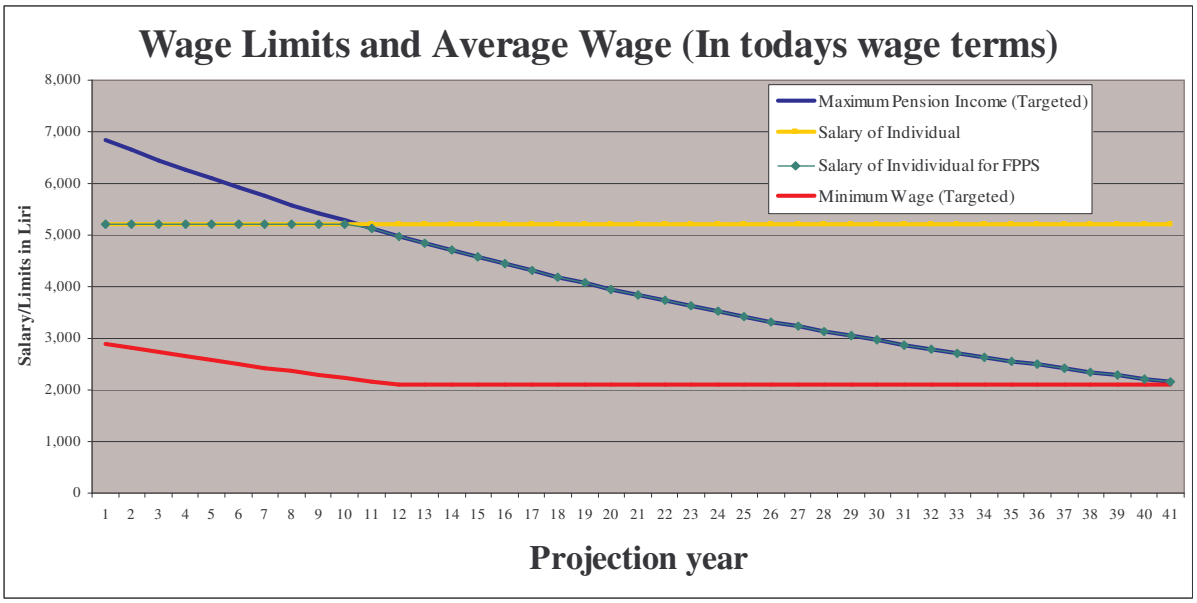


The impact of these different increases being applied can be seen in the next graph, which demonstrates the projected wages, minima and maxima.



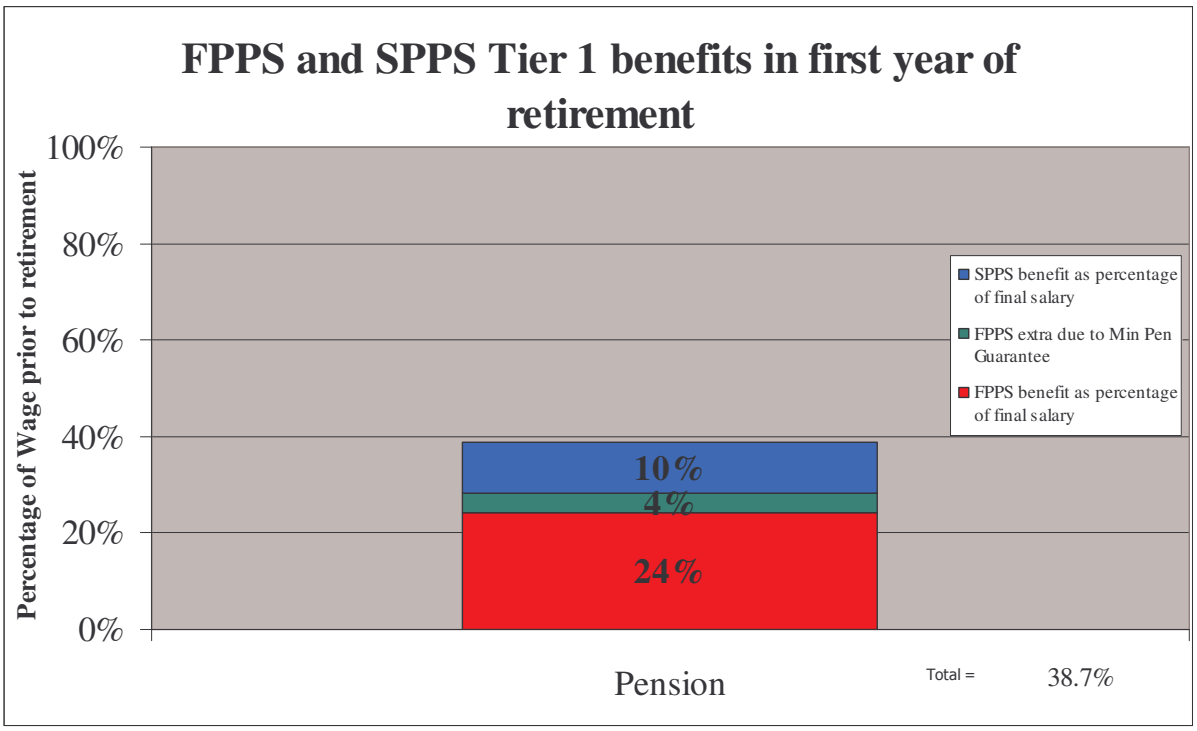
This graph demonstrates how the smaller increases applying to the Maximum Pensionable Income mean that this individual's salary exceeds it after the 10th projection year. After that time, the salary for FPPS purposes is equal to the Maximum Pensionable Income.

Some of the factors are easier to see if we look at these wages, minima and maxima in 'today's wage terms' ie we discount the figures using the wage inflation assumption. (This involves dividing the figures for each projection year by the corresponding year's cumulative average salary increase as shown in the earlier graph.)



It is now easier to see how the Minimum Wage has been stabilised (at 40% of the average basic wage – the assumption we have used). The decline in the Maximum Pensionable Income in wage terms is much clearer on this graph. We have set an assumption that the Maximum Pensionable Income will ultimately be over-ridden by the Minimum Pension Guarantee which is taken to be stabilised at 28% of the average basic wage. The level of this stabilisation is a decision to be taken.

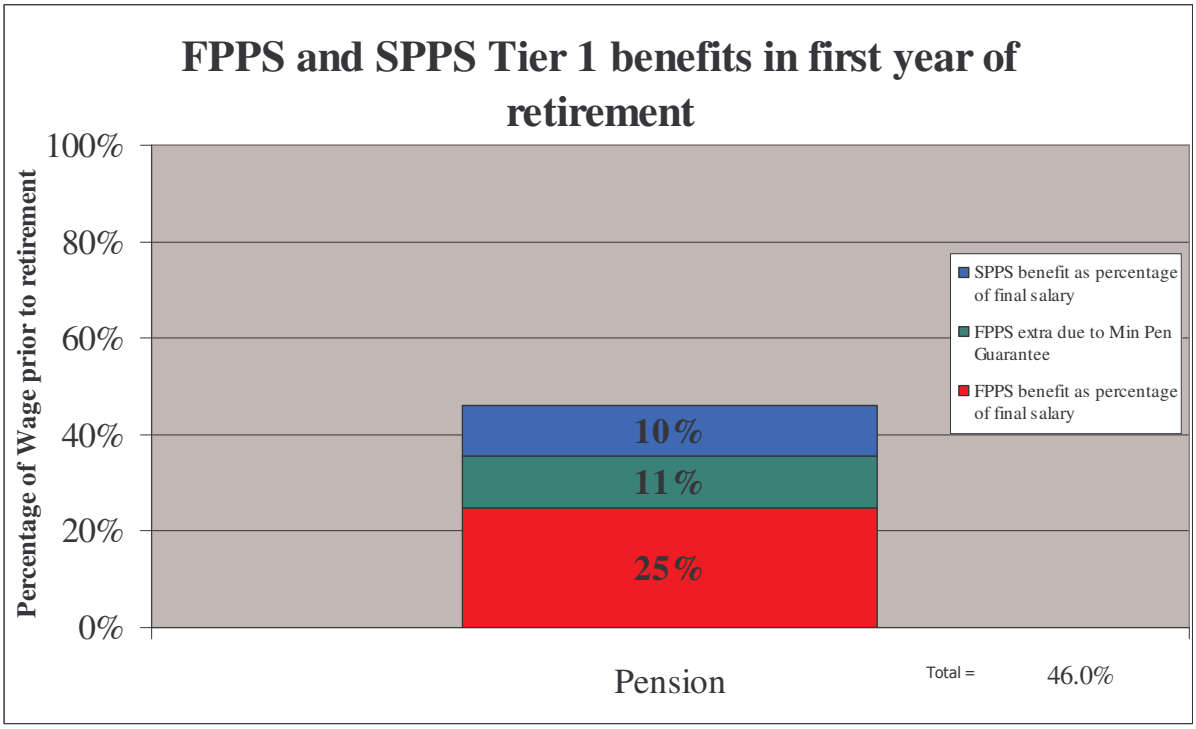
The benefit being provided by the SPPS Tier 1 has been targeted at about 10% of salary prior to retirement by setting the contribution rate at a suitable level. The graph below shows the components of the benefit from the FPPS and SPPS Tier 1 in the first year after retirement.



This graph demonstrates the impact of the Minimum Pension Guarantee, which we have assumed reduces in wage terms, until it reaches 28% of the average basic wage.

Stabilisation of the Minimum Wage

We have included an extra example of the benefits that a person aged 25 on introduction of the SPPS might receive based on the Minimum Wage (and hence Minimum Pension) stabilising at a higher level equal to 50% of the average basic wage.



Since the Minimum Wage now stabilises at a higher level, the Minimum Pension Guarantee also stabilises at a higher level of 36% of the average basic wage. Hence the value of the guarantee becomes greater, where it bites.

Further Projections

We have used the interactive model to develop the example given earlier in this report of how the FPPS and SPPS Tier 1 benefits might work in practice once it has stabilised. We have considered three individuals:

- one earning the Maximum Salary Limit, whose earnings increase in line with average wages;
- one earning the estimated average wage, whose earnings increase in line with average wages; and
- one earning the current minimum wages whose earnings increase in line with the Minimum wage.

These individuals are all aged 25 on introduction of the SPPS.

Basic Wage throughout career			Pension components		Combined pension	
Level of Basic Wage	in today's wage terms	% of average basic wages	SPPS Tier 1 pension	FPPS pension	in today's wage terms	% of Basic Wage
Maximum Salary Limit	6,841	132%	707	1,456	2,163	32%
Average basic wage	5,200	100%	537	1,456	1,993	38%
Minimum Wage	2,080	40%	225	1,456	1,681	81%

SPPS Tier 2

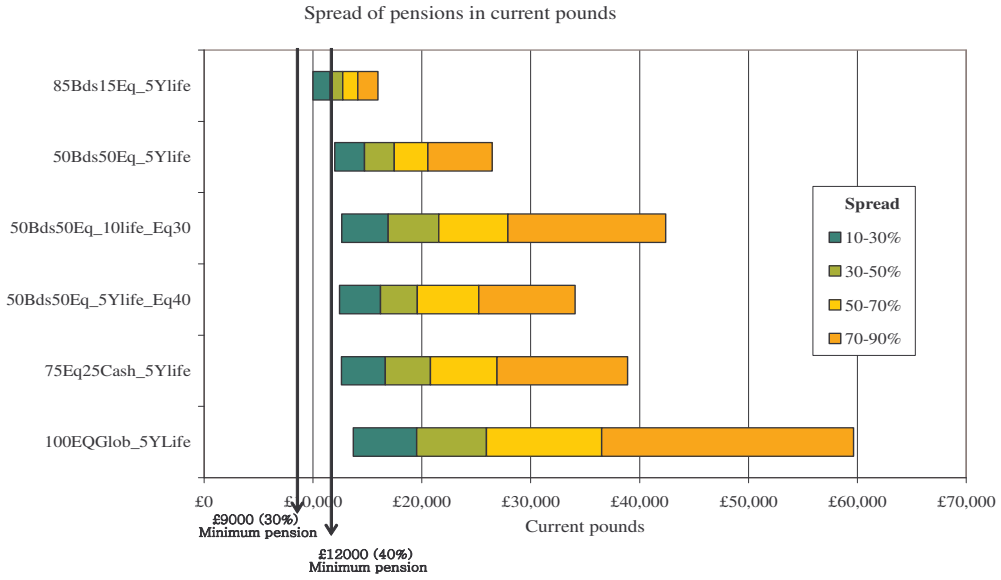
In order to allow more flexibility in the SPPS, we recommend that Tier 2 could allow individuals and employers to have the freedom to make higher contributions and the opportunity to invest in a more flexible way at the discretion of the individual. We therefore propose that SPPS Tier 2 is designed:

- either as a defined contribution (DC) arrangement
- or on the same hybrid design as the SPPS Tier 1.

A DC arrangement may not have been suitable for SPPS Tier 1, due to the volatility of the investment returns and capital values that an individual investor might experience and therefore not meet the adequacy requirement. It does, however, offer more flexibility and hence could be appropriate for SPPS Tier 2 - relying on SPPS Tier 1 to achieve adequacy.

An example of the spread of returns produced by a DC arrangement is given in the diagram below:

Spread of DC pensions example



This graph was produced for a UK client showing the risks/uncertainty in the level of pension in £ Sterling currency. Nevertheless, the broad conclusions will be similar, whatever the currency in which benefits are paid.

The graph shows the extent of risks/uncertainties in the level of pension for six different investment strategies, ranging from:

- 85% bonds, 15% equities, converting to 100% bonds and cash in the five years prior to retirement; to
- 100% equities, converting to 100% bonds and cash in the five years prior to retirement.

The assumptions used to produce this graph are set out in Appendix B.

15. Summary of "control levers"

Control levers in SPPS Tier 1

The design proposal set out in the 'Design of the SPPS pension – DB or DC' section illustrates the hybrid design that we have proposed. A key element of its design are the "control levels" that allow the benefits provided by the SPPS Tier 1 to be controlled so that they remain sustainable through strategic management. Each of these "control levels" is described in more detail below.

Accumulation on assets of an individual

The assets held for an individual would receive a regular increase related to the investment return being achieved on the whole SPPS Tier 1 assets. The level of this increase would not be promised in advance, but will be controlled so that it reflects the ability of the assets to meet the increase. In general we would expect this to result in a smoothing of the increases, with an individual receiving a more stable increase, changing gradually over time as necessary, than they would get under a defined contribution arrangement.

The scheme could target a particular increase e.g. 2% in excess of price inflation, but this would be adjusted to reflect actual investment returns earned over time if it becomes necessary.

Conversion of an individual's assets into a pension

The terms of the conversion could, again, be changed over time depending on the ability of the scheme to meet them. If the scheme's assets are performing consistently less well than expected, then the conversion terms could be altered over time to provide a smaller pension for the same value of an individual's assets. Likewise, if assets are performing better than expected, a larger pension could be provided.

There would be a smoothing of these conversion terms so that there were no sudden changes which could cause a group of individuals to suffer the brunt of any short term poor performance of the scheme's assets (as would happen in a pure DC arrangement).

For the planning purposes of an individual, these terms could be set prior to retirement e.g. fixed for a five year term before the expected retirement date of an individual. This would mean that people have a clearer picture of the benefits they can expect as they approach retirement – thus allowing them to undertake financial planning with considerably more certainty over the pension income in retirement.

Pension increases

Similarly to the "control levers" above, the pension increases paid could be altered slowly over a period of time, as it becomes necessary. The scheme could target a particular increase e.g. price inflation, but alter it if scheme's assets are consistently performing better or worse than expected, or if people live longer than expected.

Once again, this creates a strong element of smoothing so that there are no sudden changes which would lead to material uncertainty for the individual.

Control levers to manage FPPS costs

We have suggested a number of control levers to help manage strategically the level of FPPS costs:

- extent of channelling of social security contributions to the Health Fund
- the level of revaluation of the Maximum Salary Limit – aiming to keep it at or close to 132% of average basic wage
- the level at which the Minimum Pension Guarantee is stabilised (as a percentage of average basic wage)
- the level at which the Minimum Wages are stabilised (as a percentage of average basic wage)
- more fundamental design changes such as increasing the Retirement Age beyond age 65 if life expectancy at 65 increases faster than currently projected.

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16. Next steps

Next steps	There are a number of steps to be taken before introducing the SPPS. These are summarised below:
FPPS design decisions	Agreeing changes to the FPPS design, including: • Contribution and benefit indexation • Smoothing of "cliffs" • Minimum pension guarantee
SPPS structure	Agreeing the structure of the SPPS, including: • Cut-off age • Contribution level • Contribution structure – "carve out" vs additional funding.
Investment issues	Setting the investment framework, including requirements during the first few years following the introduction of the SPPS. Setting diversification parameters.
Governance	Reviewing the proposed governance requirements for SPPS in light of agreed design & structure. Reviewing ownership of the Scheme assets – particularly with regards to tax immunity – requiring advice from tax specialists.
Further Investigations	• Reviewing the SPPS Tier 2 and TPPS design. • Developing the annuity conversion terms and review process. • Reviewing the scope and financing of the Compensation Fund.
Tax incentives	Deciding the structure of tax incentives to offer for SPPS Tier 1, Tier 2 and TPPS.
Implementation Strategy	Setting the strategy for implementing the SPPS and TPPS including transition arrangements before full implementation occurs. Establishing strategic management systems/processes to monitor and control the FPPS and SPPS financing via "control levers".

Appendix A – Assumptions for FPPS/SPPS Tier 1 modelling

Financial Assumptions

Average Price inflation	2.5% p.a.
Average Wage inflation	5.5% p.a.
Investment Return on SPPS Tier 1 assets	5.5% p.a.
SPPS pension increases in payment	2.5% p.a.

Item	Current level / Lm	Increases in line with	Stabilises at % of average basic wage
Minimum Wage	2,892	price inflation (then wage inflation on a stabilised)	40%
Estimated average basic wage	5,200	wage inflation	100%
Maximum Salary Limit (For SPPS Tier 1 contributions)	6,841	wage inflation	132%
Maximum Pensionable Income (for FPPS contributions and benefits)	6,841	price inflation (then wage inflation once stabilised)	28%
Minimum Pension Guarantee	2,095	price inflation (then wage inflation once stabilised)	28% (or 70% of the Minimum Wage)

Investment expenses (pre retirement)	0.5% of value of fund p.a.
Annuity conversion expenses	4% of value of fund

Demographic assumptions

For simplification, we have not considered mortality before retirement and have assumed that all individuals have a complete service and contributions history.

Mortality after retirement (Standard UK tables)	Males – PMA92C2005 Females – PFA92C2005 both rated up 1 year

These tables imply a life expectancy of 22.0 years for a male aged 60; and 25.0 years for a female age 60.

These are broadly consistent with the life expectancy shown for a current 25 year old in the White Paper.

We have assumed that there are no attaching spouse's benefits when the SPPS Tier 1 fund is converted into a pension.

Appendix B – Assumptions for DC pensions example

Econometric model

Hewitt uses an econometric model which is:

Complete and Consistent

- All the major markets and asset classes are modelled within a consistent framework allowing the interactions between them to be properly taken into account.

Full Yield Curve Model

- The yield curve relates the yield you can obtain on a bond to its term to maturity. For example, the yield on a five year bond will not usually be the same as the yield on a ten year bond. The full yield curve is modelled as this allows for the correct treatment of the liabilities and realistic modelling of the future distribution of interest rates. Negative interest rates are not usually observed in practice and therefore should not be permitted to occur in the model.

No 'Free Lunch'

- 'Always win' strategies (arbitrage opportunities) are not generally available in the real world and therefore should not be present in the model. In other words, the discounted value of any set of future cash flows from an asset should equal the current market value of the asset. Our model is free of arbitrage.

Scope of the model

The model covers all the key financial variables that drive asset returns and liability values. These include:

- Interest rates (the full yield curve);
- Price inflation;
- Salary inflation; and
- Total returns on each asset class.

A truly international approach is used with all the major equity, bond and currency markets modelled within a consistent framework.

Currently, the following economies are modelled:

- UK;
- Euro zone;
- USA;
- Canada;
- Switzerland; and
- Japan.

Within each zone, we have modelled price and salary inflation, exchange rates, the full term structure of interest rates (both nominal, and, in those markets offering index-linked assets, i.e. UK, Euro zone, USA and Canada, real), corporate bond yields, total returns on cash, fixed-interest government and corporate bonds, where relevant index-linked government bonds, and equities.

Calibrating the model

Our model requires many parameters to be specified. As far as possible, these are set with reference to market conditions at the time the calibration is carried out. For example, by considering yield curves today, it is possible to deduce:

- The market's expectation of inflation in future years;
- The market's expectation of the return on cash in future years;
- The market's expectation of how the yield curve will evolve going in future years.

Some parameters cannot be set with reference to market conditions. There is an element of subjectivity in setting these assumptions and we set these with reference to:

- Historical data;
- Economic arguments put forward by selected managers;
- Our view of what is economically sensible.

It is important to note that deriving assumptions for expected returns from historical data is not statistically robust. Some assets (for example index-linked gilts) have a relatively short history, and the historical data, which reflects the last bull market, should not be interpreted to be indicative of the long-term future. Therefore, we give more weight to managers' economic arguments when deriving these assumptions.

Volatility and correlations of returns between asset classes are a feature of both bull and bear markets. They will be affected less by the underlying economic conditions than by the actual level of returns. Therefore, estimates of volatility and correlations, which are based on historical data, will be less sensitive to the period that is chosen than to estimates of expected returns.

Furthermore, very few market participants try to forecast volatility and correlations into the long-term future. Therefore, when it comes to assumptions about volatility and the correlation between assets, we primarily consider the historical figures based on monthly returns data, which we then adjust if we consider that there are compelling economic reasons to do so.

Expected inflation, interest rates and total returns

Set out below is the approach we use to determine the expected inflation, interest rates and total return for each asset class. These expectations change over time with market conditions, but specimen values are set out at the end of this appendix. Our model allows for projected inflation, interest rates and total returns to fluctuate randomly around their expected values, and this is discussed later in this appendix.

Retail price inflation

The expected rate of Retail Price Inflation (RPI) in the model is derived from market interest rates. Broadly, the gap between long-dated conventional and index-linked gilt yields of a given duration gives an indication of the market's expectation of inflation over that duration.

So by considering the term structure of index-linked and fixed-interest gilts, it is possible to derive estimates of expected inflation each year.

Salary inflation

We assume an average real growth of salaries (i.e. in excess of RPI inflation) in line with that assumed in the actuarial valuation.

Interest rates

Our model projects both real and nominal interest rates of varying terms at each year in the future. We believe that current market interest rates contain very useful information about the market's expectations of the future.

By combining current yield curves with an assumption on the long term behaviour of the yield curve, we can derive how the yield curve is expected to evolve over time.

For example, consider a one year and a ten year fixed interest gilt. These give us information as to what we expect a one year and ten year gilt to return respectively over the next one and ten years. However, compare the following investment strategies: (a) invest in a ten-year gilt for ten years; (b) invest in a one-year gilt until maturity and reinvest the proceeds in a nine-year gilt. Both strategies should be expected to lead to the same outcome (as otherwise an arbitrage opportunity would exist), which means that today's market conditions allow us to derive the expected yield on a nine year gilt in a year's time.

Extending this analysis, it is possible to derive the expected yield on gilts of any term at any point in the future.

Total returns on fixed interest gilts

It is possible to obtain a broad estimate of the total return available on fixed interest gilts by considering a buy-and hold strategy, where the return can be estimated by the yield available.

By way of illustration, as at 31 December 2003, the market's expectation of the average return over the following ten years on fifteen year gilts is approximately 4.75% per annum.

Total return on index-linked gilts

Index-linked gilts should not offer a long-term return substantially different from that available on fixed interest gilts. (If they did, investors would act to exploit the difference.) However, they are expected in the long term to under perform fixed interest gilts by a small margin. This is because holders of fixed interest gilts demand some compensation for the risk of inflation increasing, which will drive up fixed interest yields, and drive down fixed interest gilt prices.

For the ten year period from 31 December 2003, our estimate of total returns on fifteen year index-linked gilts over the following ten years is 4.50%.

Total return on developed equity markets

We consider that, in the longer term, the developed equity markets (UK, Europe (ex UK), North America and the Pacific Basin) offer similar scope for return. This is because we assume a free flow of information and capital, and similar levels of productivity growth in these regions. We do not generally model emerging markets or private equity, but these could be expected to yield a higher return.

We have focussed on setting the equity risk premium (the extent to which equities are expected to outperform gilts in the long term) rather than the absolute level of equity return. The reasons for this are two-fold:

(a) The equity risk premium appears to be more stable over time; and

(b) Investors will demand a particular equity risk premium to compensate them for taking risk, rather than taking a low risk approach of investing in gilts.

The assumptions already discussed have been set with reference to market conditions; however there is no market data that can be used to derive the market's expectation of the equity risk premium, so this can be considered to be one of the key assumptions in the asset liability study. We have adopted an equity risk premium of 3%. By way of justification, consider UK equities as at 31 December 2003:

We have derived an expected rate of inflation for the next ten years of 2.25%. Forecasts suggest a long-term rate of economic growth to be 2.5%. Assuming that, over the longer term, the split of economic output between capital and labour remains constant, corporate profitability can therefore be considered to grow at around 4.75%.

Earnings, or dividends, per share will, in our view, grow by somewhat more than this. There are two effects, which in part are offsetting, but the net result is that we expect earnings and dividends to grow by perhaps 5.0% in the longer term. These effects are:

- **Gearing** – because companies tend to be financed by a mixture of equity and debt, the increase in corporate profits after servicing any debt will be larger than the increase before servicing any debt.
- **Dilution** – over time, new companies, and new shares in existing companies will be created, and this will account for some of the GDP growth identified above.

The total return on equities can be expressed as the growth in dividends plus the dividend yield, assuming that valuations do not change over the longer term. Managers consider the long-term view of earnings yield to be around 5.5%. Assuming around half of this is distributed (either by way of dividends or share buybacks) and half reinvested within the company, a suitable long-term dividend yield is 5.5%/2=2.75%. (This is slightly lower than the equity dividend yield at 31 December 2003 of around 3.0%, reflecting recent poor equity returns).

A suitable long-term assumption for equity returns is therefore of the order of 5.0%+2.75%=7.75%. Given that the expected return on bonds is 4.75%; this suggests an equity risk premium of 3%. Accordingly, we consider an assumption of 3% to be a best estimate view of the long-term equity risk premium in the UK, and by the above argument, a reasonable view of the equity risk premium in the developed markets.

Total return on corporate bonds

Corporate bonds are modelled in a manner that ensures consistency with the government yield curve and the equity market. The method used means that a positive yield spread (i.e. the extent to which corporate bond yields exceed government bond yields) is always observed and Corporates have greater risk as well as greater expected returns than government bonds (gilts).

Using this approach, as at 31 December 2003, the expected average return on corporate bonds over the following ten years is 5.25%.

Variability of returns

The assumptions shown above are expectations over time. In practice, the return on, say, UK equities might be +15% in one year and -5% in the next. We allow for this variability in our assumptions. This is achieved by carrying out a very large number of simulations using random, as opposed to expected, outcomes and then ranking the results to see what picture emerges.

The extent to which random outcomes vary from the expected outcome is measured by the "volatility", also known as the "standard deviation". The volatility can be thought of approximately as being that deviation from the expected outcome that is exceeded in one year out of three. For example, if an asset class is expected to return 8%, with a volatility of 16%, then in roughly two years out of three, that asset class's total return will be within 8% ± 16%, i.e. between -8% and 24%.

These assumptions are developed from economic theory and historical analysis of indices. Specimen volatilities are given at the end of this appendix.

Relative movements of asset classes

In addition to the assumptions about expected returns and variability of returns shown above, we have to make assumptions about the way in which asset classes move relative to each other. These have been derived from a historical analysis of indices.

Specimen expectations and volatilities

Our model is calibrated to market conditions as at the effective date of the asset liability study.

The expected values and volatilities of each parameter vary over time. Specimen values of these items over the ten year period commencing 31 December 2003 are set out below. While the absolute values of the return expectations will vary with the start date of the projections, the differences between them will remain stable and it is these differences that drive the projections.

Parameter	Expectation	Volatility
Retail price inflation	2.50%	2.75%
Salary inflation *	4.00%	3.00%
Total return on 15 year fixed interest gilts	4.75%	7.00%
Total return on 15 year index-linked gilts	4.50%	5.00%
Total return on 15 year corporate bonds	5.25%	9.50%
Total return on UK equities	7.75%	18.00%
Total return on European equities	7.75%	19.00%
Total return on North American equities	7.75%	21.00%
Total return on Pacific Basin equities	7.75%	27.00%

* Excludes allowance for promotional increases

Appendix C – Summary of the existing FPPS arrangements

Introduction

This appendix summarises our understanding of the current arrangements for the FPPS. It has been used as the basis for the calculations that we have undertaken and for applying a consistent approach for our proposals for the SPPS. The White Paper sets out proposed changes to the FPPS arrangements, which are not included in the description below.

Contributions

Employed

The employed pay Class I contributions of 10% of their basic gross wage; subject to the Maximum Pensionable Income.

Self-employed

The self-employed pay Class II contributions of 7.5% of their declared gross wage, again subject to the Maximum Pensionable Income.

Employer

The employer pays contributions at the same rate of gross basis wage as the employee.

Government

Government contributions are at the same level of gross basic wage as the employer contributions (in addition to any Class I contributions paid as an employer).

The government also make contributions in respect of people entitled to contribution credits, these mainly being people in full time education.

Benefit Calculation

Employed

The benefit provided by the FPPS is based on the best three years consecutive earnings in the last ten. The earnings in each year are then revalued to the date of retirement in line with COLA. An average is then taken, and the resulting figure is subject to the Maximum Pensionable Earnings.

The service is calculated by considering the ten years prior to retirement and the previous employment. In order to meet the full 30 year service requirement, an individual must have paid social security contributions for the ten years prior to retirement and for a further 20 years during the rest of their earlier working life. If an individual has not met these requirements, their benefits will be scaled back accordingly (from the full two-thirds benefit).

The FPPS pension is therefore calculated as:

$$\frac{a+b}{30} \times \frac{2}{3} \times \text{Final Wages}$$

Where a = Number of years' contributions in the last 10 years

b = Number of years of earlier contributions, subject to a maximum of 20 years

Final Wages = Revalued average wages based on the best three years' in the last 10 years, subject to maximum of the Maximum Pensionable Income.

This pension is then subject to the Minimum Pension Guarantee.

Self employed

The benefit calculation for the self employed is similar to that for the employed, except that the wage averaging is based on the last ten years of employment (rather than the best three consecutive years in the last ten).

Special Cases

There are a number of special cases, such as those receiving a service pension (e.g. armed forces and the police) or people who joined the civil service prior to 1979. These people receive a reduced FPPS benefit, based on the level of their service pension, subject to a minimum level of FPPS pension.

Appendix D – Summary of PROST modelling assumptions

Introduction

This appendix summarises the assumptions used in the Scenarios 1 to 8 give in section (13). The assumptions given are those that differ between the Scenarios. They do not include details of the assumptions which remain unchanged throughout the Scenarios. The unchanged assumptions are those used by the World Bank to calculate the 'Lm6750' scenario given in the White Paper.

Normal Retirement age

Year (of retirement)	Normal retirement age assumed in Scenario:	
	Lm6750	1-8
2002 – 2013	61	61
2004 – 2017	62	62
2018 – 2020	63	63
2021	63	64
2022 – 2023	65	64
2024 +	65	65

Service Period for full two-thirds benefit

Year (of retirement)	Required service period assumed in Scenario:	
	Lm6750	1-8
2002 – 2014	30	30
2015 – 2017	30	31
2018 – 2020	30	32
2021 – 2023	30	33
2024 – 2025	30	34
2026	30	35
2027	35	35
2028 – 2029	35	36
2030 – 2031	35	37
2032	35	38
2033	40	38
2034 - 2035	40	39
2036 +	40	40

Minimum Pension Guarantee Indexation

Year	Minimum Pension Guarantee indexation assumed in Scenario:	
	Lm6750 & 1	2-8
	RPI/Wages	RPI/Wages
2002 – 2004	50/50	50/50
2005 – 2020	50/50	100/0
2021 +	50/50	0/100

The indexation given in the above table (and the other tables that include indexation) is in relation to RPI inflation and wage inflation. For example:

- a "100/0" entry means that the relevant limit is assumed to increase in line with RPI inflation
- a "50/50" entry means that the relevant limit is assumed to increase at a rate half way between RPI inflation and wage inflation
- a "0/100" entry means that the relevant limit is assumed to increase in line with wage inflation.

Maximum Pensionable Income Indexation

Year	Maximum Pensionable Income indexation assumed in Scenario:	
	Lm6750 & 1	2-8
	RPI/Wages	RPI/Wages
2002 – 2004	80/0	80/0
2005 +	80/0	100/0

Minimum Wage Indexation

Year	Minimum Wage indexation assumed in Scenario:	
	Lm6750 & 1	2-8
	RPI/Wages	RPI/Wages
2002 – 2004	50/50	50/50
2005 – 2020	50/50	100/0
2021 +	50/50	0/100

Maximum Salary Limit Indexation

Year	Maximum Salary Limit indexation assumed in Scenario:	
	Lm6750 & 1	2-8
	RPI/Wages	RPI/Wages
2002 – 2004	80/0	80/0
2005 +	100/0	0/100

Wage averaging period

Year	Wage averaging period (used for salary definition in calculating FPPS benefits) assumed in Scenario:		
	Lm6750, 1 & 2	3, 5 & 7	4, 6 & 8
2002 – 2013	4 (average)	4 (average)	4 (average)
2014 – 2015	5	7	7
2016	5	11	11
2017 – 2018	5	15	15
2019	5	19	19
2020	5	23	23
2021	10	23	23
2022	10	27	27
2023 – 2027	10	30	30
2028 – 2052	40	40	30
2053 +	40	40	40

Carve out of SPPS and health contribution

Scenario(s)	SPPS contributions Carved out of existing FPPS calculations?	Health contributions transferred to health fund?
Lm6750, 1 - 4	No	Yes
5 & 6	Yes	Yes
7 & 8	Yes	No