Comptroller and Auditor General

Special Report

Department of Finance

Public Service Pensions

August 2009

This report was prepared on the basis of information, documentation and explanations obtained from the public bodies referred to in the report. The draft report was sent to the Department of Finance. Where appropriate, the comments received were incorporated in the final version of the report.

Report of the Comptroller and Auditor General

Public Service Pensions

I have, in accordance with the provisions of Section 9 of the Comptroller and Auditor General (Amendment) Act, 1993, carried out an examination of Public Service Pensions.

I hereby submit my report on the above examination for presentation to Dáil Éireann pursuant to Section 11 of the said Act.

John Buckley
Comptroller and Auditor General

21 August 2009

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Summary of Findings

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Public service pension schemes cover over 300,000 staff and more than 100,000 existing pensioners, and their dependents. These schemes usually have two components - a main superannuation scheme and an associated contributory spouses' and children's scheme. Most public service pension schemes are defined benefit schemes under which benefits payable are based on the level of final salary at the date of retirement with post retirement increases being awarded in line with pay increases with the consent of the Minister for Finance.

For the purposes of the examination pension consultants were engaged to estimate the

- accrued public service pensions liability in respect of public service staff
- pension cash flow projections over the next 50 years
- the cost of providing superannuation benefits for the various categories of public sector employees in terms of their payroll costs.

The examination also looked at the administrative, funding and accounting arrangements for pensions of public servants.

Recent Developments

Under the Financial Emergency Measures in the Public Interest Act, 2009 the Government introduced a pensions related deduction with effect from 1 March 2009 for public service staff. The deduction is charged on all income, including non-pensionable remuneration.

The Financial Measures (Miscellaneous Provisions) Act, 2009 was passed in June 2009 to provide for the transfer to the National Pensions Reserve Fund (NPRF) of €1.7 billion of the assets held by some State Sponsored Bodies and universities, together with liabilities which were valued at €3 billion at 31 December 2008. It is proposed that the assets transferred will be managed by the NPRF and that the liabilities will be met in future on a pay-as-you-go basis.

Scope of Examination

The scope of the examination encompassed pension schemes of civil servants and public servants in the Health Sector, the Education Sector, the Garda Síochána, the Defence Forces, the Prison Service and in non-commercial State Sponsored Bodies. While Local Government pensions do not fall within the detailed scope of the examination an estimate of the accrued pensions liability of local authority staff, based on relativities derived from the Report of the Commission on Public Service Pensions (2000), has been made in order to project the overall pension liability of the State at 31 December 2008.

Cost of Pensions

At 31 December 2008, estimated pension liabilities of €108 billion had accrued. A small number of State Sponsored Bodies and five universities operate funded schemes which were valued at approximately €1.9 billion at 31 December 2008 including the €1.7 billion to be transferred to the NPRF. After taking account of the assets held in the funded schemes and €5.4 billion of assets held in the NPRF, it is estimated that the net present value of the accrued pension liabilities at the end of 2008 amounted to €101 billion.

While the liability of €101 billion is a measure of the cost that has accrued to date, it is also useful to examine the likely cash flows that will occur. Gross outflows in the period 2009 to 2058 were estimated at €367 billion. When standard staff pension contributions and the recently introduced pensions related deduction are taken into account net outflows over the 50 year period are estimated at €157 billion in 2008 prices.

Currently, net public service pension payments absorb 0.5% of GNP and as a result of the projected increase in the number of pensioners it will be necessary to devote 1.8% of GNP to meet the net cost of pension payments by 2058.

Overall, the examination found that, based on the cost of one year's additional service, the pension provision for an average public servant will cost around 9% of pay after account is taken of contributions made including the new pension related deduction introduced in 2009. The gross cost is on average 20% under this method. The examination also found that there are wide variations by sector largely due to the fact that full pensions can be earned over a relatively shorter working life in certain areas of the public service.

Funding of Pensions

There are two broad choices for the Government in funding pensions. The first is to set funds aside and invest them in order to meet future pension liabilities or, alternatively, to meet future payments out of the revenue of future years on a pay-as-you-go basis. Most public service occupational pension schemes are financed on a pay-as-you-go basis, with the annual cost of pensions being met from current revenue in the year of payment.

A middle way is to even out the burden of future liabilities by the creation of a pensions reserve fund which can smooth out the impact on future taxation by setting a long-term sustainable pension charge target. The National Pensions Reserve Fund is based on this approach. The Fund was established on a statutory basis in 2001 to set aside and invest 1% of GNP annually until at least 2055. No money can be drawn down from the Fund until 2025 and drawdowns can continue until 2055. At 31 December 2008 the Fund was valued at €16.1 billion.

Accounting for Pensions

From an accounting viewpoint, there are two bases of accounting employed in the public sector. The pension costs of Departments and Offices, Institutes of Technology and Vocational Education Committees, are reported at the point of payment while costs in the case of most State Bodies and universities are reported as they accrue.

A drawback of recognising pension costs only when they are paid is that the financial statements do not capture the true cost of pensions and are inadequate to signal the long-term cost of recruitment decisions or decisions that extend scheme coverage or improve pension terms. The wider introduction of an accruals basis of accounting would bring greater cost transparency and make explicit the true financial impact of resourcing decisions.

Whole of Government Pension Cost

The Commission on Public Service Pensions recommended that actuarial reviews of public service pension schemes and projections of public service pension outflows should be carried out by the Department of Finance on a three-year cyclical basis. Regular reviews have not been undertaken but are carried out from time to time. Actuarial reviews and projections of public service pension outflows should be carried out on a regular basis which would ensure that the State is aware of the

cost impact of pensions and the timing of pension outflows. The Department of Finance has stated that it intends to include an estimate of the accrued liability for the whole public service in the Finance Accounts with effect from the accounting year 2008.

It is important that steps are put in place to prepare the ground for mandatory compilation of estimates of the liabilities of unfunded pension schemes which will be introduced under EU regulations in five years time.

Pension Data

The quality of data obtained for this examination varied considerably between sectors and between agencies within a sector. Data was not always complete and the main deficiencies were the failure to maintain full employment records in electronic format on preserved pensions, pensionable allowances, added years and employment status.

The Commission on Public Service Pensions recommended the development of a specialised, computerised pensions administration system capable of sharing data between the major public service employers. This has not yet been implemented.

Public Service Pensions

1 Introduction

1.1 Benefits under most public service occupational pension schemes are statutorily provided. Most schemes are financed on a pay-as-you-go basis, with the annual cost of pensions being met from current revenue in the year of payment. Some 100,000 pensioners are in receipt of pension payments and, at 31 December 2008, benefits had accrued for over 300,000 serving staff.[1] Payments in respect of public sector pensions, excluding local authority staff, amounted to approximately €2.3 billion in 2008.

Developments in Recent Years

1.2 In the past 15 years there has been a number of reviews of public service pensions and pension arrangements have been altered. The first significant change was the requirement, with effect from 6 April 1995, for newly appointed public servants to pay Class A rate of PRSI and their occupational and State pensions were 'integrated'.[2] Public servants appointed prior to this date pay a modified rate of PRSI.

1.3 The Commission on Public Service Pensions[3] reviewed the occupational pension arrangements of public servants by reference to several criteria, including present and future Exchequer costs, claims for improvements in terms, evolving work patterns and the operational needs of the services concerned. A 2004 public service pension reform package followed on from the recommendations in the Commission's Report. The key change introduced was to increase to 65 years the minimum age at which pension benefits are payable to public servants appointed after 1 April 2004. The enacting legislation[4] also exempted new entrants from the then public service norm of compulsory retirement at age 65.[5]

1.4 A number of further key Commission recommendations directed at introducing pension scheme flexibilities and generally modernising disparate features of pension provision have been implemented under the 2004 Act. These are summarised in Figure 1.1.

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1 These numbers include local authority staff.

2 In April 1995, explicit pension contributions (approximately 5%) were introduced for new members of schemes which had formerly been non-contributory and the pay scales of these new entrants were increased, effectively to match the contributions being levied. Integration had previously applied only to some public servants. 'Integration' means that, in the case of people who are fully insured for social welfare purposes, the occupational pension payable takes account of eligibility for payment of the State Pension (Contributory) and is reduced accordingly.

3 Commission on Public Service Pensions 2000 (Final Report)

4 The Public Service Superannuation (Miscellaneous Provisions) Act 2004.

5 For most staff appointed before 1 April 2004, pension benefits are generally payable from age 60, and a compulsory retirement age of 65 applies.

Figure 1.1 Key Recommendations of the Commission implemented since the 2004 Act

Recommendation	Implementation
Cost-neutral early retirement	A facility that allows public servants to retire early (from age 50/55, as appropriate) with immediate payment of pension and lump sum, actuarially reduced to reflect the earlier payment.
Revised integration formula	A new method of integrating social insurance and public service pensions to boost the retirement income of lower-paid staff.
Integration 'pro rata'	A more favorable integration method ('pro rata' integration as opposed to 'full' integration) applied in the calculation of pension entitlements for part-time public servants.
Notional added years	Existing schemes were replaced for new entrants by a single 'transitional' scheme (to be reviewed in 2015). The main impact of the change was to reduce maximum awards of notional service for superannuation purposes for professional, technical or specialist staff from 10 to 5 years.
Compound interest rate	The rate of compound interest to be applied to refunds of marriage gratuities, payment of outstanding employee contributions and recovery of financial loss to the Exchequer was reduced from 6% to 4% per annum effective from 14 November 2000 onwards.
Reckoning of allowances for pension purposes	Revised calculation based on 'the best three consecutive years in the ten years preceding retirement' (instead of being restricted to the last three years of service only)

Source: Department of Social and Family Affairs (2007), *Green Paper on Pensions,* p. 203.

1.5 A Green Paper on Pensions was published in October 2007 which reviewed the background to the Irish pension system and a broad range of issues relating to social welfare, private, occupational and public sector pensions, and incentives for supplementary pension saving. The ageing of the Irish population and the affordability challenges facing Ireland in the decades ahead were examined, and a number of scenarios and options discussed. In September 2008, the Government published a Report on the consultation process for the Green Paper on Pensions and is currently considering the development of a long-term policy document.

1.6 The main terms of standard pension schemes in the public service are summarised in Figure 1.2.

Figure 1.2 Public Service Pension Scheme Entitlements

Pre-April 1995 Entrants

The standard public service pension terms for persons who joined the public service before 6 April 1995 can be summarised as follows

- an option to retire at any time between 60 and 65
- an annual pension calculated on the basis of 1/80th of pensionable remuneration per year of pensionable service up to a maximum of 50% of retiring pensionable remuneration[6]
- a lump sum of 3/80^{ths} of pensionable remuneration per year of service up to a maximum of 150% of pensionable remuneration
- a spouse's pension of 50% of member's pension where the public service pensioner pre-deceases his/her spouse.

Post-April 1995 Entrants

In the case of persons who joined the public service on or after 6 April 1995, their pension terms are similar, except that the benefits are integrated with the State pension.

Post-April 2004 Entrants

For new entrants who joined the public service after 1 April 2004, the following changes were introduced in accordance with the Public Service Superannuation (Miscellaneous Provisions) Act, 2004

- an increase in the pension age (generally from 60 to 65)
- the maximum retirement age of 65 was removed

The pension benefits are similar to those of post April 1995 entrants.

Post Retirement Increases

These increases are, in general, at the discretion of the organisation subject to the approval/consent of the Minister responsible with the consent of the Minister for Finance. The application of the Minister's discretion for the past 20 years has been based on full parity whereby, for the most part, general increases to serving staff are passed on to pensioners on the same basis. Special pay increases may or may not be passed on to pensioners depending on the nature of the increase.

Cost Neutral Early Retirement

For those who joined before April 2004, a cost neutral early retirement facility was introduced in April 2004 to allow retirement from age 50 onwards (or age 55 in the case of post April 2004 entrants and others with a retirement age of 65) with actuarial reduction in benefits.

6 Pensionable remuneration is normally the salary payable on the last day of reckonable service plus the average of the best three consecutive years' pensionable allowances in the final ten years of service. The benefits may, in the case of recent promotions be based on the average salary over the previous three years' service.

The Funding Challenge

1.7 In future years, Ireland's changing demographic profile will see a rise in the number of older people as a proportion of the total population and a decrease in the proportion at working age. Ireland, by virtue of its current population profile, has a longer period than most other countries to prepare for this transition from low to high dependency. However, a considerable adjustment will need to be made as the number of people of working age relative to people over 65 falls from a ratio of six to one in 2006 to two to one by 2050. Taking account of the fact that a proportion of those of working age will not be in employment, the ratio of workers to people aged 65 and over could be as low as 1.5 to one.[7] This has implications for the funding of all pensions.

Public Service Pension Related Deduction

1.8 The Government recently introduced a Pension Related Deduction (PRD) for staff in the public service under the Financial Emergency Measures in the Public Interest Act, 2009. Deductions have been made with effect from 1 March 2009 in respect of remuneration paid after that date and apply to public servants who are employed by or hold an office or position in a public service body and are members of a public service pension scheme. The PRD is charged on all remuneration including non-pensionable pay, overtime, acting up allowances and benefit-in-kind. PRDs qualify for tax relief at the marginal rate. For the purposes of relevant tables in this report the PRD is treated as a pension contribution.

1.9 The PRD was introduced as an emergency measure and will be subject to review. For the purpose of this report, it has been assumed that it will continue in operation. The PRD will not affect the value of accrued liabilities for pensions as these liabilities are based on service to date. The PRD, however, is relevant in calculating future contributions - reducing the new entrant effective contribution rate and impacting on future cash flows. Where PRD is included the calculations are based on the rates in effect from 1 March 2009 rather than the new rates revised in the Supplementary Budget on 7 April 2009 and effective from 1 May 2009.

Early Retirement Provisions

1.10 The Minister for Finance announced an Incentivised Scheme of Early Retirement in the Budget on 7 April 2009. The purpose of the scheme is to facilitate a permanent, structural reduction in the numbers of staff serving in the civil service, local authorities, health sector and non-commercial State Sponsored Bodies (State Sponsored Bodies). The scheme, which is operative from 1 May 2009 and which will be reviewed in the context of Budget 2010, has not been factored into the assumptions and calculations used in this report. The impact of the scheme will be to increase pension outflows in the short term and to reduce them in the longer term due to the lower number of years' service achieved by those taking early retirement.

7 Department of Social and Family Affairs (2007), *Green Paper on Pensions*, p. 1.

Focus and Scope of the Examination

1.11 The examination looks at the administrative, funding and accounting arrangements for pensions of public servants and estimates

- the accrued public service pensions liability in respect of those staff
- associated cash flow projections, and
- the cost of providing for public service pensions.

1.12 The examination covers pension schemes of civil servants as well as those of public servants in the Health Sector, the Education Sector, the Garda Síochána, the Defence Forces, the Prison Service and State Sponsored Bodies. Commercial State Bodies do not come within the scope of the examination. While Local Government does not fall within the detailed scope of this report an estimate of the accrued pensions liability for serving staff and pensioners has been included in Chapter 2 for completeness.

Examination Methodology

1.13 Staff of the Office of the Comptroller and Auditor General carried out an analysis of the administrative arrangements for public service pension schemes. They also assembled the basic information to enable estimates and projections of costs and liabilities to be generated. Using that information, an actuarial consultancy firm, Life Strategies Ltd (the pension consultants), engaged by the Office

- estimated the present value of the accrued entitlements of both pensioners and serving staff as at 31 December 2008
- projected the pattern of benefit expenditure for each sector for the next 50 years after taking account of standard contributions and the PRD
- calculated the cost to the State of providing pension benefits to public service staff in each sector relative to pensionable remuneration and estimated the contribution rate necessary to fund the pension benefits after taking account of standard contributions and the PRD.

1.14 The estimates assume that pensions will continue to be paid in accordance with current pensions policy, which is based on pay parity. Appendix A sets out the estimation methodology and outlines the key assumptions used.

Structure of the Report

1.15 The report is set out in the two chapters that follow. Chapter 2 sets out estimates of the State's accrued pension liability at 31 December 2008, the cash flows that will arise over the coming fifty years and the pension costs of employing public servants. Chapter 3 outlines the administrative arrangements for public service pensions.

2 Cost of Public Service Pensions

2.1 This chapter presents the results of an exercise conducted by pension consultants to quantify the cost of public service pensions. It sets out

- their best estimate of the present value of future pension liabilities that had accrued to 31 December 2008
- the pension cash flows likely to arise over the next 50 years and
- the additional cost of employing public servants attributable to pension entitlements. [8]

Assumptions and Sensitivity

2.2 It was necessary to use a wide range of assumptions to calculate the projected public service pension costs set out in this chapter. The major assumptions included demographic assumptions, economic assumptions, Gross National Product (GNP) growth projections and assumptions that were specific to each sector of the public service. Where possible the assumptions used were consistent with work published by other public sector bodies such as the Department of Finance and the Central Statistics Office. The estimation methodology and the key assumptions used are set out in Appendix A.

2.3 The discount rate used to calculate the present value of expected future payments is based on an accounting standard issued in February 2008 by the International Public Sector Accounting Standards Board, IPSAS 25. Although the standard does not become effective until January 2011 its provisions were deemed the most appropriate basis for calculating public sector pension liabilities

2.4 The assumptions are dependent on the prevailing conditions at the time the estimates are completed. Many of the economic assumptions, in particular, are likely to be subject to a wide variability in the current economic climate. Appendix C demonstrates the sensitivity of the results in this chapter to changes in some key assumptions.

2.5 A large amount of data was required to calculate the projections used in this chapter. Although there were deficiencies in the data provided from some sectors the pension consultants have a reasonably high confidence level in the outcome of the calculations.

2.6 As it was not feasible to collect complete and accurate information in all sectors, the consultants based some calculations on population samples where reasonable levels of data existed. They also made assumptions and estimates in other cases where certain data were lacking for particular public service groups.

2.7 The pension consultants report that they achieved reasonable confidence that the calculated value of accrued liabilities is correct but the data deficiencies could impact on the precision of the calculated figure. The possible range of impact of the data deficiencies could be between –5% and +10%.

2.8 Appendix B sets out information on the data provided to the consultants and a commentary on the quality and quantity of the data.

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8 Estimates of pensions benefits which may accrue to spouses and children are included in the figures reported.

Current Value of Accrued Pension Entitlements

2.9 The value of the State's accrued liability in respect of public service pensions for serving staff, pensioners and preserved pensioners, at 31 December 2008 has been estimated at €108.4 billion.[9] After taking account of assets of €1.9 billion held by a small number of pension schemes and €5.4 billion[10] of assets held by the National Pension Reserve Fund (NPRF) the net liability amounted to €101.2 billion. In order to provide an overall estimate of the State's total accrued pensions liability the figure of €108.4 billion includes an estimate of €7.5 billion in respect of serving staff and pensioners in local authorities.[11]

2.10 The accrued liability represents the present value of benefits earned by serving staff to the end of 2008 and amounts payable to existing pensioners. The payments arising from these liabilities will be spread over the next 60 years or more. The figure uses the salary points of staff at the valuation date and does not take account of future career increases from increments or promotions as these have yet to be earned.

2.11 Figure 2.1 shows the accrued liability by sector broken down between serving staff, pensioners and preserved pensioners.

9 Taking account of data deficiencies the consultants estimate that the actual value of the accrued pension liability is within a range between –5% and +10%, that is in a range between €103 billion and €119 billion.

10 One third of the assets of the NPRF have been notionally allocated towards the cost of public service pensions.

11 A detailed estimate of the accrued liability for local authority staff and pensioners was not carried out as part of the examination. The estimate is based on relativities derived from the Report of the Commission on Public Service Pensions. Local authorities have been excluded from the calculations of the cash flows and the pension costs of employing public servants due to the non-availability of sufficient data for these purposes.

Figure 2.1 Accrued Pension Liabilities at 31 December 2008

Sector	Serving Staff	Pensioners	Preserved Liabilities[a]	Gross Liability	Assets[b]	Net Liability
	€ million	€ million	€ million	€ million	€ million	€ million
Civil Service	9,052	3,999	467	13,518	–	13,518
Health	11,965	9,351	1,576	22,892	–	22,892
Gardaí	4,664	3,678	–	8,342	–	8,342
Prison Officers	813	433	–	1,246	–	1,246
Defence Forces	4,133	4,441	–	8,574	–	8,574
Teachers[c]	16,124	9,258	2,785	28,167	–	28,167
VECs and ITs	3,716	2,114	179	6,009	–	6,009
Universities	3,212	1,451	169	4,832	(1,147)	3,685
State Sponsored Bodies	3,241	3,119	200	6,560	(718)	5,842
Constitutional, Ministerial and Judicial Office-Holders	343	442	–	785	–	785
Local Authorities	4,442	2,992	65	7,499	–	7,499
Total Public Service	**61,705**	**41,278**	**5,441**	**108,424**	**(1,865)**	**106,559**
One third of NPRF[d]						(5,381)
Liability Net of NPRF Allocated Assets						**101,178**

Notes:

a There is no significant preserved pensioners' liability for Gardaí or the Defence Forces. Preserved pension entitlement for the Permanent Defence Forces was introduced only in 2004 for new entrants. In the case of Prison Officers and Constitutional, Ministerial and Judicial Office-Holders data was not readily available. Consequently, the liability is slightly understated.

b Assets held by pension funds of some universities and State Sponsored Bodies, valued at 31 December 2008, have been deducted to give a net liability.

c Includes Primary Teachers, Post-Primary Teachers, Special Needs Assistants and non-teaching staff in schools.

d One third of the value of the NPRF of €16,142 million at 31 December 2008 amounting to €5,381 million has been notionally allocated towards the cost of public service pensions.

2.12 Estimates of the accrued liability have previously been produced in the Report of the Commission on Public Service Pensions. A comparison of these results with the results in this chapter are provided in Appendix D.

Future Cash Flows

2.13 While the foregoing paragraphs have considered the present value of entitlements which have accrued to date, it is also useful to examine the future trend in payments. Unlike the accrued pensions liability which reflects benefits earned to date, these cash flows reflect the monetary impact of future recruitment and retirement patterns. They also involve taking account of standard contributions and PRD which can be offset against outflows. Projected outflows and inflows are stated at constant 2008 prices.

2.14 Future contributions to, and drawdowns from, the NPRF have not been included in the projected cash flows because there is no defined process for how the fund will be allocated. In addition, there will be no drawdown of funds until 2025 and the amounts involved will be relatively small.

2.15 It is estimated, based on the examination assumptions used, that the cumulative gross outflows in the period 2009 to 2058 will amount to €367 billion and net outflows will amount to €157 billion as set out in Figure 2.2.

Figure 2.2 Cumulative Cash Flows to 2058

	€ billion
Future Outflows	367
Contributions	(78)
PRD	(132)
Net Outflow	**157**

2.16 The annual gross benefit expenditure at ten-year intervals up to 2058 is set out in Figure 2.3.

Figure 2.3 Gross Benefit Expenditure

Sector	**2009**	**2018**	**2028**	**2038**	**2048**	**2058**
	€ million	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**
Civil Service	286	581	838	1,123	1,537	2,185
Health	533	961	1,311	1,891	3,076	5,241
Security	607	717	1,007	1,377	1,730	1,968
Education	816	1,795	2,328	2,674	3,247	4,457
State Sponsored Bodies	199	306	384	464	597	830
Total	**2,441**	**4,360**	**5,868**	**7,529**	**10,187**	**14,681**

2.17 Over the next 50 years, based on current levels of contribution, it is estimated that public servants will contribute some €78 billion by way of standard pension contributions. Figure 2.4 outlines annual contribution levels at ten-year intervals for each sector up to 2058.

Figure 2.4 Standard Contribution Income

Sector	2009	2018	2028	2038	2048	2058
	€ million	€ million	€ million	€ million	€ million	€ million
Civil Service	43	68	115	170	217	249
Health	303	367	542	791	1,109	1,465
Security	50	75	106	124	146	184
Education	293	321	420	527	653	734
State Sponsored Bodies	24	39	61	82	100	119
Total	**713**	**870**	**1,244**	**1,694**	**2,225**	**2,751**

2.18 If the PRD continues in its current form, it is projected to yield €132 billion (adjusted to 2008 prices) at 2009 contribution rates over the period to 2058. Figure 2.5 sets out the estimated annual contributions from the PRD at ten yearly intervals.

Figure 2.5 PRD Income

Sector	2009	2018	2028	2038	2048	2058
	€ million	€ million	€ million	€ million	€ million	€ million
Civil Service	112	181	266	336	399	454
Health	387	573	872	1,301	1,838	2,431
Security	96	154	206	228	267	337
Education	366	484	659	857	1,087	1,225
State Sponsored Bodies	51	85	120	145	166	195
Total	**1,012**	**1,477**	**2,123**	**2,867**	**3,757**	**4,642**

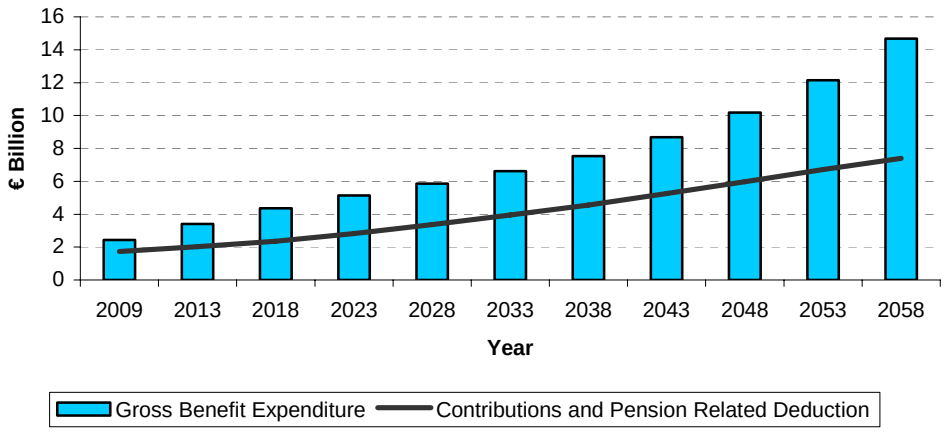
2.19 After offsetting contributions and PRD against the gross outflows, net outflows of €157 billion are projected to occur over the period to 2058. Figure 2.6 outlines the net outflows at ten-yearly intervals for each sector.

Figure 2.6 Net Benefit Expenditure

Sector	2009	2018	2028	2038	2048	2058
	€ million	€ million	€ million	€ million	€ million	€ million
Civil Service	131	331	457	617	921	1,483
Health	(157)	21	(103)	(202)	129	1,346
Security	461	488	695	1,025	1,318	1,447
Education	156	989	1,249	1,290	1,507	2,498
State Sponsored Bodies	124	182	202	237	331	516
Total	**715**	**2,011**	**2,500**	**2,967**	**4,206**	**7,290**

2.20 The chart in Figure 2.7 shows the projected gross cash outflows, contribution income and PRD at five-yearly intervals in the period to 2058.

Figure 2.7 Projected Development of Cash Flows for Public Service Pensions 2009-2058



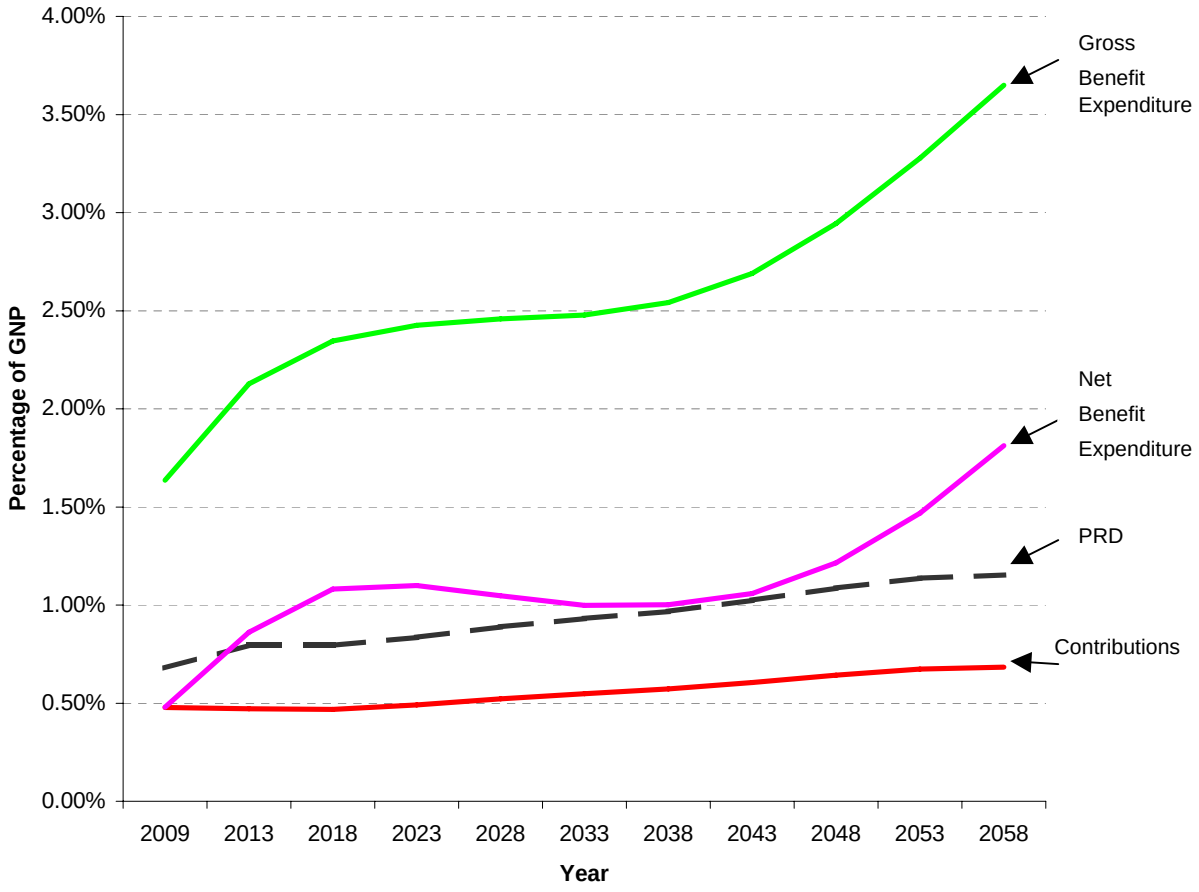
Note: The portion of the annual payment above the contribution line represents the excess of benefit outgoings over contributions.

2.21 Annual gross cash outflows are projected to increase by over 500% from €2.4 billion in 2009 to €14.7 billion in 2058 in constant 2008 price terms. Contribution income, including PRD, is also projected to increase by over 300% from €1.7 billion to €7.4 billion. The introduction of the PRD would significantly offset the cost of meeting pension obligations if it is maintained at 2009 rates rising from €1.0 billion in 2009 to €4.6 billion in 2058.

Pension Spending Projections (% of GNP)

2.22 One measure of affordability of pensions is projected future pension costs in relation to the GNP of the State. Assuming GNP grows as projected[12] (see Appendix A), gross pension outgoings as a percentage of GNP are projected to rise significantly over the next 50 years. While the State currently applies 1.6% of GNP to fund pension costs, this is projected to increase to 3.6% by 2058. Currently, net public service pensions absorb 0.5% of GNP. It will be necessary to apply 1.8% of GNP to meet these costs by 2058 (3.0% before taking account of the PRD). Figure 2.8 illustrates the trend over the next 50 years.

Figure 2.8 Benefits and Contributions as a Percentage of Total GNP



12 Appendix A sets out the projected GNP growth to 2058.

Trend in Pension Costs

2.23 The pension outflow pattern relative to GNP has a number of significant features. These are that

- Gross benefit expenditure as a percentage of GNP will rise between 2009 and 2023 from 1.6% to 2.4% of GNP. This increase arises from the projected growth in the number of pensioners giving rise to a related pensions outflow over this period which exceeds the growth in GNP. The significant growth in the number of pensioners reflects the relatively high number of serving staff (317,000) compared to the existing number of pensioners (113,000).
- Between 2023 and 2038 gross benefit expenditure is projected to stabilize at around 2.5% of GNP. Both GNP and gross benefit expenditure are projected to grow at similar rates during this period. There is a projected increase in income from pension contributions and the PRD during this period as a result of the projected growth in the size of the public service. This leads to a slight dip in net benefit outflow during this period.
- Between 2038 and 2058 gross benefit expenditure is projected to increase from 2.5% to 3.6% of GNP. This increase also results from the projected growth in the number of pensioners and the related pensions outflow over this period exceeding the growth in GNP. The projected growth in the number of pensioners results from an increase in size of the public service which is forecast to increase by 23% between 2008 and 2018. These additional employees should start to retire towards the end of the projection period leading to an increase in gross benefit outflow.

2.24 A breakdown of future gross benefit outflows and future contributions, including the PRD, for each Sector are set out in Appendix E.

Annual Pension Cost of Public Servants

2.25 The annual pension cost represents the notional contribution which would be required to fund the full pension cost of one year's additional service by all currently serving staff in the public service. The estimate aggregates members with pre 1995, post 1995 and post 2004 pension terms. Figure 2.9 shows the gross estimate and the net estimate for each sector after taking account of staff contributions, including PRD.

Figure 2.9 Annual Pension Cost of Public Servants[a]

Sector	Gross Pension Cost as a Percentage of Pensionable Remuneration	Net Pension Cost as a Percentage of Pensionable Remuneration
	%	%
Civil Service	22.3	13.0
Health	16.1	4.3
Gardaí	27.9	15.9
Prison Officers	29.6	19.8
Defence Forces	28.2	19.5
Teachers[b]	22.4	9.6
VECs and ITs	19.9	7.2
Universities	19.3	7.8
State Sponsored Bodies	21.2	10.4
Constitutional, Ministerial and Judicial Office-Holders	70.0	61.1
Weighted Average Cost	**20.1**	**8.6**

Notes:

a The annual pension cost for a serving public servant is equivalent to the change in the accrued liability (i.e. the value of pension entitlements earned in a year) as a percentage of pay.

b Includes primary teachers, post-primary teachers, special needs assistants and non-teaching staff.

2.26 There is wide variation between sectors in the cost of one year's additional service ranging from 16.1% for the Health sector to 29.6% for Prison Officers. The variation in cost reflects the relative value of pension benefits. The higher cost for the Security sector (Gardaí, Prison Officers and the Defence Forces) results from the shorter period over which benefits are earned and the consequent longer period during which pensionable entitlements are drawn. The relatively low cost for Health sector staff reflects the relatively low grading structure in this sector.

2.27 The very high average pension cost of 70% in the case of Constitutional, Ministerial and Judicial Office-Holders results from the fact that benefits are generally earned over a short period.

2.28 The gross pension cost of one years' service for a public servant can be funded from two sources

- the employee meets a proportion of the cost through contributions and pension related deductions
- the State meets the balance.

2.29 Figure 2.9 also shows the net cost to the State after taking account of employee contributions and PRD in each category.

New Entrant Contribution Rate

2.30 A further measure of pension costs is the additional contribution rate required to fund future pension benefits for a new entrant. This represents the notional contribution rate for a sample new entrant grade that would have to be in place in order to provide the benefit accrued at retirement. It can provide an indication of the pension cost of recruiting a new entrant to the public service and of the cost of employing different categories of staff. However, it does not reflect the pension cost of currently serving staff.

2.31 Based on the pension scheme terms that apply to staff joining from 1 April 2004 the new entrant contribution rates for male staff[13] are shown in Figure 2.10 below.

Figure 2.10 New Entrant Contribution Rates - Males

Category of Employment	As a Percentage of Pensionable Remuneration			
	Total Cost	PRD	Employee Contribution[a]	Net Cost
Civil Service				
Established	24.6	8.1	4.6	11.9
Non-Established	9.5	7.0	0.3	2.2
Education				
Primary Teacher	20.5	8.4	4.9	7.2
Post-Primary Teacher	23.1	8.4	4.9	9.8
Security				
Garda	29.6	8.5	5.1	16.0
Prison Officer	27.8	7.7	4.5	15.6
Commissioned Officer	41.2	8.1	4.8	28.3
Enlisted Personnel	22.4	7.2	0.4	14.8
Health				
Consultant	25.9	9.5	6.0	10.4
Nurse (General)	17.7	8.0	4.7	5.0
State Sponsored Bodies				
Established Officer	22.7	8.5	4.9	9.3

Note:

a The employee contribution shown is the total employee contributions over the working life of the employee as a percentage of total pensionable remuneration. For example, these contributions represent 4.6% of total remuneration over the lifetime of a civil servant.

13 The female new entrant contribution rates are very similar to the rates for males.

Comparative Analysis – New Entrant Contribution Rates

2.32 Teachers, established civil servants and employees of State Sponsored Bodies all show total costs of between 20% and 25%.

2.33 Outside of this the total new entrant contribution rates vary considerably – from 9.5% of Pensionable Remuneration for non-established civil servants to 41.2% of pensionable remuneration for Commissioned Officers. The costs of a new entrant, net of employee contributions and the PRD for established staff, range from 5% to 28.3%. The variation in those new entrant rates reflect a number of different factors

- Gardaí, Prison Officers and enlisted personnel in the Defence Forces have faster benefit accrual and younger retirement ages. This is reflected in the high costs for Gardaí and Prison Officers. The effect for enlisted personnel is offset by the fact that their pensionable remuneration at retirement is lower than for some other public service staff.
- The relatively high cost for a Commissioned Officer is due to the fast accrual of benefits, a relatively high pensionable remuneration at retirement and a younger retirement age of 50.
- The new entrant contribution rate of 25.9% for hospital consultants is influenced by the fact that they are typically granted added years on retirement and have a relatively high pensionable remuneration at retirement.
- The lower cost for nurses is attributed to their relatively low pensionable remuneration at retirement.
- The relatively low total cost for non-established civil servants is due to their lower pensionable remuneration at retirement. Since the superannuation scheme is integrated with the State Pension, the cost only allows for paying the excess cost over and above the State Pension amount - currently approximately €12,000 per annum (€230.30 per week).

2.34 The impact of the PRD on new entrant contribution rates is proportionally higher for employees with higher salaries and overall, it represents between 7.0% and 9.5% of pensionable remuneration.

2.35 A comparison with the new entrant contribution rates used in the Report of the Public Service Benchmarking Body, 2007 is shown in Appendix D.

Conclusions

2.36 The accrued value of the public service pension liabilities at 31 December 2008 was estimated at approximately €108.4 billion before deduction of assets held within funded pension schemes and before allowance for NPRF assets.

2.37 When contributions including PRD are taken into account net outflows of €157 billion are projected to occur over the period 2009 - 2058.

2.38 Gross pension outgoings as a percentage of GNP are projected to rise significantly over the next 50 years from 1.6% to 3.6% by 2058. Currently, net public service pensions absorb 0.5% of GNP and assuming GNP grows as projected it will be necessary to devote 1.8% of GNP to meet those costs by 2058.

2.39 The cost of public service pensions was calculated using two methods – the cost of one year's additional service and the effective contribution rate for a new entrant.

- Under the first method the gross cost has been estimated to range from 16.1% for the Health Sector to 29.6% in the case of Prison Officers. The variation in cost between sectors reflects the relative value of pension benefits. On average, the gross pension cost is around 20.1% across the public service and this would fall to 8.6% when account is taken of employee contributions including the PRD.
- Under the new entrant method the rates vary considerably – from 9.5% of pensionable remuneration for Non-Established Civil Servants to 41.2 % of pensionable remuneration for Commissioned Officers in the Defence Forces. The costs of a new entrant net of employee contributions and PRD can be as high as 28.3% of pensionable remuneration.

3 Management of Public Service Pensions

3.1 This chapter outlines how public service pension schemes are administered, their funding and accounting arrangements and the extent to which the overall pension liability of the State is accounted for and transparently disclosed.

3.2 The Department of Finance is responsible for overall pensions policy, determining financing arrangements and approving changes to pension terms. Its main functions in the superannuation area are

- developing national policy on pensions and assessing the implications for public service schemes of new legislation and of relevant court judgements, at both domestic and European level
- developing overall pension policy for the public service, in particular in the areas of pension terms and scheme financing
- dealing with claims for changes to pension terms though the Civil Service Conciliation and Arbitration Scheme
- administering the Civil Service Pension Scheme, with payment of pension benefits being carried out by the Office of the Paymaster General
- advising on appropriate management responses to pension claims across the public service and approving payment of pension increases.

3.3 The responsibility for administration of public service pension schemes is spread over a number of Government Departments and Agencies. Excluding universities and most State Sponsored Bodies who administer their own pension schemes the main agencies with administrative responsibilities are those outlined in Figure 3.1.

Figure 3.1 Administration of Public Sector Pensions

Pension Scheme	Administrative Responsibility
Civil Service	Department of Finance[a]
Health Service	Health Service Executive
Teaching and Support Personnel	Department of Education and Science
Defence Forces	Department of Defence
Local Authorities, Health Service, VECs, etc[b]	Department of Environment, Heritage and Local Government
Garda Síochána	Garda Síochána

Notes:

a Some Departments have delegated responsibility to calculate pension entitlements for their own staff.

b The Health (Miscellaneous Provisions) Act, 2009 will provide for responsibility for Local Government Superannuation Scheme (Health Sector) to transfer from the Minister for Environment, Heritage and Local Government to the Minister for Health and Children.

Pension Schemes

3.4 Pension benefits in the public service are usually conferred by a main superannuation scheme and an associated contributory spouses' and children's scheme.

3.5 Taking account of the nature of the work carried out, schemes for members of the Garda Síochána, the Permanent Defence Forces, Firefighters, Prison Officers and Teachers differ from other public service schemes by providing for a full pension with less than 40 years service or payment of pension before the normal minimum retirement age. These faster accrual terms are set out in Figure 3.2.

Figure 3.2 Superannuation Schemes with Fast Accrual Terms

Sector	Minimum Years Service Required to Earn Maximum Retirement Benefits		Minimum Age For Payment of Pension [a]	
	Pre 2004	Post 2004 [b]	Pre 2004	Post 2004
Garda Síochána	30	30	50	55
Permanent Defence Forces	31	31	- [c]	50
Fire Fighters	30	30	55	55
Prison Officers	30	30	50	55
Teachers	40	40	55	65

Notes:

a Staff may retire at an earlier age but with an actuarial deduction applied to their pension.

b Pension terms amended by the Public Service Superannuation (Miscellaneous Provisions) Act, 2004.

c Previous to 1 April 2004 pensions were linked to length of service and rank only.

3.6 Most public service pension schemes are defined benefit schemes. Under these types of schemes, pension benefits payable are based on the level of final salary at the date of retirement, and, in general, post retirement increases are awarded in line with pay increases with the consent of the Minister for Finance.

3.7 A minority of schemes are defined contribution schemes. Under defined contribution schemes the employer, and usually the employee, make a pre-determined contribution into the scheme and the pension at retirement is determined by the contributions made together with the investment return on the contributions.

Approval of Superannuation Schemes

3.8 The bulk of the schemes have statutory underpinning being provided for in an Act of the Oireachtas. Each scheme usually takes the form of regulations made under an enabling Act, which set out entitlements and terms and conditions. In recent decades, taking into account the pace of change in the area of superannuation and the fact that industrial relations agreements are regularly implemented with retrospective effect, it has become common practice throughout the public service to implement changes to existing statutory schemes administratively, usually through the issue of circular letters with the making of the appropriate statutory instruments at a later date.

3.9 A large number of new schemes have been set up on an administrative basis with the approval of the Department of Finance in compliance with a model superannuation scheme for State Sponsored Bodies. In practice, the terms of schemes while based on the public service model scheme are formally approved by the Department of Finance before the necessary secondary legislation underpinning the scheme is put in place.

3.10 A substantial number of new and existing pension schemes are awaiting examination and approval by the Department of Finance. Currently, 51 pension schemes and nine associated spouses' and children's schemes are being examined and almost 100 pension schemes have yet to be submitted.

3.11 The main statutory provisions covering pension schemes in the public service are described in Appendix F.

Funding Arrangements

3.12 Two broad funding choices are available to Government. The first is to set funds aside and invest them to provide revenue to meet pensions when they fall due. The alternative is to meet any future payments out of the revenue of future years (pay-as-you-go). Most public service pension benefits are met on a pay-as-you-go basis.

3.13 The choice of whether and to what extent a State should set money aside to fund future pension liabilities is a policy choice for government and is influenced by

- the evenness from year to year of the cash flow profile associated with pension liabilities
- the effectiveness and efficiency of pension fund investment by comparison with the application of the funds for alternative purposes by Government.

3.14 A middle way is to even out the burden of future liabilities through the creation of a pensions reserve fund. The merit of this is that it smoothes out their impact on future taxation by setting a long-term sustainable pension charge target.[14] The National Pensions Reserve Fund (NPRF) is based on this approach.

National Pensions Reserve Fund

The purpose of the fund, established in 2001, was to introduce an element of pre-funding for future social welfare and public service pension obligations. It involves the statutory setting aside and investing of 1% of GNP annually (until at least 2055) in order to meet as much as possible of the cost of those future pensions. At 31 December 2008 the fund was valued at €16.1 billion. The National Pensions Reserve Fund Act, 2000 provides that no money can be drawn down from the Fund before 2025 and from then on drawdowns will continue until at least 2055 in accordance with Ministerial rules related to the growth in the percentage of people over 65 in the population.

On foot of a decision to recapitalise Allied Irish Bank and Bank of Ireland the Government directed the NPRF to purchase €7 billion preference shares in these institutions. An accelerated payment of €3 billion, equivalent to 2009 and 2010 State contributions was made to the Fund by the State. The €7 billion investments form part of Fund assets valued at €19.4 billion at 30 June 2009.

14 One way of achieving this would be to set the percentage of GNP which would be devoted to pensions over the medium to long term.

3.15 Most of the arguments advanced in favour of the creation of pension funds focus on transparency of cost and future liability. These include the argument that

- Funding, unlike pay-as-you-go, makes advance provision for future liabilities.
- With appropriate contribution rates, the real cost of pensions becomes immediately obvious under a funding arrangement. Thus, the long-term effect of increases in the number of personnel covered and/or improvements in pension terms (which may have only a minor impact on costs under a pay-as-you-go system in the short-term) is immediately apparent to all parties concerned.
- Contribution rates for a pension fund would bring home to members of schemes the value of their pension entitlements and to employers the real cost of recruitment.
- Funding would give a more stable profile of costs to the Exchequer over time compared with pay-as-you-go.

Views of the Commission on Public Service Pensions

The Commission on Public Service Pensions[15] compared the existing pay-as-you-go system of financing public service pensions with an alternative system of setting aside and investing funds to meet future liabilities. The arguments in favour of funding public service pensions included

- Funds make pension costs transparent to employers and employees.
- The fund would help to smooth expected peaks in the State's pensions costs.
- A public service pension fund would provide security to public servants and pensioners that the State would continue to meet its long-term commitments.
- A pension fund would be viewed positively by international organisations and credit rating agencies.
- At a macroeconomic level funding could increase real investment in the economy.
- There would be a saving in the State's net outgoings if there was a high rate of return over time from the fund which was in excess of returns from alternative spending on education, infrastructure, or repayment of the National Debt. However, the volatility of the stock markets would have a significant impact on pension fund performance.

The arguments against replacing the pay-as-you-go approach included

- unlike the private sector primary objective of funding to secure pension benefits, the State's obligations and commitments are met through taxation which can be raised or lowered as necessary
- the lack of transparency in the pay-as-you-go approach can be addressed through the introduction of accrual based accounting for pension costs
- future pension costs should be known and Government economic planning should factor in these costs in the same way as other liabilities which will arise in health, education and social welfare
- pay-as-you-go is in keeping with the Government's budgetary system
- a system of funding pensions would restrict budget flexibility in future years
- administrative charges would be higher under a funding system
- there is no direct link between an increase in investment in pension funds and increased capital formation.

The Commission concluded that it was not convinced of the need to fully fund public service pensions. It concluded that the basic reason for establishing a pension fund in the private sector to provide security of benefits does not apply where the State is the ultimate guarantor of benefits. In addition, the economic arguments in favour of funding were less than conclusive and it would not address the expected peak in public service pension costs and would limit budgetary flexibility. The Commission saw definite advantages in the idea of partially funding future public service pension costs to help to smooth the pensions bill and ensure diversification of State expenditure at a time when the economy had near full employment and buoyant revenue.

15 Commission on Public Service Pensions 2000 (Final Report).

Extent of Funded Schemes

3.16 In the case of certain older Universities,[16] the Higher Education Authority (HEA) provides 15% of pensionable payroll annually to cover pension costs. This money is invested by the respective funds and, along with investment returns and employee contributions, is used to pay pensions. Pension increases are financed separately with a further 5% (approximately) of pensionable payroll being paid annually by the HEA to cover those costs. The universities and/or their agents have autonomy in regard to investment policy.

3.17 The pension schemes of most State Sponsored Bodies are operated under pay-as-you-go systems. However, a small number of State Sponsored Bodies have funded schemes. In his Supplementary Budget Statement on 7 April 2009 the Minister for Finance stated that it was proposed to transfer to the Exchequer the assets and liabilities of certain pension funds in universities and State Sponsored Bodies. The liabilities of the associated schemes at the end of 2008 were estimated to be approximately €3 billion with assets valued at €1.7 billion. It is proposed that the assets will be managed by the NPRF and liabilities met thereafter on a pay-as-you-go basis. Legislation to give effect to the transfer was passed in June 2009 under the Financial Measures (Miscellaneous Provisions) Act, 2009.

Accounting for Pensions

3.18 An overall accounting principle is that the full cost of an organisation's operations should be matched against the revenue of each year. This principle is now included in Financial Reporting Standards[17] insofar as obligations arising out of defined benefit schemes must be recognised in accounts. In addition, Financial Reporting Standards demand the disclosure of material assumptions used in calculating the value of pension assets and liabilities. Attempts to apply this principle in public service accounting have been complicated by the fact that

- accounting for Voted monies remains on a cash basis, and
- funding arrangements for non-Voted activities are not generally aligned with those accounting principles set out in Financial Reporting Standards.

Accounting for Pensions in Votes

3.19 In the civil service, pension payments are met from a central Superannuation Vote administered by the Department of Finance. Analogous arrangements apply to HSE staff, teachers, Gardaí and Defence Forces personnel whose Votes bear the payment cost of pensions in those sectors.

3.20 Pension contributions, including the PRD, received from staff are recorded under the Appropriations-in-Aid heading of the appropriate Vote rather than netted off against pension payments, as outlined below.

16 Trinity College Dublin (TCD), National University of Ireland Maynooth (NUIM), University College Galway (UCG), University College Dublin (UCD) and University College Cork (UCC).

17 Under FRS 17, actuarially assessed costs of pension liabilities are recognised in the accounting period in which the benefits are earned by employees. The balance sheet must reflect liabilities arising from an employer's retirement benefit obligations and any related funding which has been built up as an asset.

Accounting for Pension Payments and Receipts - Votes

Civil Service

The cost of civil service pensions is met from the Vote for Superannuation and Retired Allowances administered by the Department of Finance. Staff pension contributions are recorded under the Vote's Appropriations-in-Aid heading.

Education

Pension payments in respect of school teachers are met from the Vote of the Department of Education and Science. Employee contributions are recorded under the Vote's Appropriations-in-Aid heading. The Vote also recoups local authorities for the cost of pension payments made to teachers and other staff of Vocational Education Committees and Institutes of Technology.

Health Service Executive

Pension payments are met on a pay-as-you-go basis from the HSE Vote and superannuation contributions are credited as Appropriations-in-Aid to the Vote.

Garda Síochána

Pension payments are charged to the Garda Síochána Vote. Employee contributions are recorded as Appropriations-in-Aid.

Defence Forces

Pensions for Defence Forces personnel are met from an Army Pensions Vote. Employee contributions are credited to Appropriations-in-Aid.

3.21 Overall, Vote pension accounting is based on recording payments made to pensioners and contributions from serving employees. As a result, the cost of the pension earned by an employee is not captured in the Appropriation Accounts.

Pension Costs and Pension Payments

The distinction being made in the foregoing paragraphs is that the cost of pensions is an element of the employment cost of an employee and accrues over the working life of the employee in contrast to being treated as in Vote Accounting as a set of payments and costs that only begin after retirement. In accounting terms the cost should be matched to the period to which it relates (or in a commercial undertaking matched against the revenue earned so as to give the true financial result of the period).

3.22 Shortcomings of a purely cash-based approach to accounting for public service pension costs and liabilities include the fact that

- there is no accounting recognition of the long-term cost of pensions
- this, in turn, means that there is no transparency around the affordability of employment decisions
- the true cost of employment is not captured and, therefore, reported annual costs of each year of service are understated

- at the aggregate level, the accumulated pension debt is neither measured nor disclosed
- financial sustainability is not addressed since the future impact of cash outflows are not projected.

3.23 Overall, the recording of only the actual cost of pensions payments and contributions received from serving staff is an inadequate basis for the reporting of cost and does not signal long-term cost of management decisions to

- recruit additional employees
- extend scheme coverage
- improve pension terms.

3.24 In the case of recruitment decisions there is a risk that under the current accounting arrangements, the true pension costs associated with increased employee numbers are masked since, in the short term their contributions are treated as income but the pension costs associated with their employment are deferred into the future.

Pensions in State Sponsored Bodies

3.25 Unlike the Civil Service which accounts on a cash basis, State Sponsored Bodies account on an accruals basis in accordance with generally applicable accounting standards. Financial Reporting Standard 17 (FRS 17) is the accounting standard that deals with pension liabilities and generally applies to all bodies that use accrual accounting in preparing financial statements including State Sponsored Bodies whether they pay pensions on a pay-as-you-go basis or have funded schemes.

3.26 In the case of non-voted entities, FRS 17 reporting requirements are in general adhered to with the result that the net pension cost for the year[18] is reported in income and expenditure accounts with the gross accumulated liabilities being shown on the Balance Sheet. In funded schemes, like those currently pertaining in the older universities, contributions are passed to the related fund. To the extent that funds are not available, the Balance Sheets record the amount ultimately recoverable from the Exchequer in respect of future liabilities as a deferred funding asset. This treatment takes account of the statutory basis for the establishment of superannuation schemes and the traditional policy and practices in place in relation to funding public service pensions including contributions by employees and the annual estimates process. While there is no formal agreement between the entities and the State in respect of funding the deferred amounts, accounts of non-voted entities are drawn up on the accounting assumption that the current funding policy will continue.

Health Sector Pensions

3.27 The Minister for Health and Children has the statutory power to set the accounting standards for the HSE and for St. Luke's Hospital. Where financial statements have been prepared in accordance with accounting standards set by the Minister under statute, they have not received a qualified opinion on the grounds of non-compliance with FRS 17.

3.28 In the case of the rest of the sector the Minister has the statutory power to determine the form of the accounts and has instructed all health sector bodies under her remit to continue to recognise pension costs at the point of payment when accounting for health service pensions rather than adopt the provisions of FRS 17. Since 2005, these health bodies have received a qualified

18 After offsetting pension contributions.

opinion on the grounds of non-compliance with FRS 17, as there are no particular features inherent in their funding arrangements that distinguishes them from other State Sponsored Bodies.

Local Authority Pension Accounting

3.29 The payment of Local Authority pensions is charged to the programme accounts of each individual Local Authority in the year of payment (and is not disclosed in the accounts of the Department of the Environment, Heritage and Local Government). Expenditures are financed from the local authority's resources, which includes grants from the Department of the Environment and Local Government, community and service charges, commercial rates and employee pension contributions.

Whole of Government Pension Reporting

3.30 The Commission on Public Service Pensions recommended that actuarial reviews of public service pension schemes and projections of public service pension outflows should be carried out by the Department of Finance on a three-year cyclical basis. This has not been implemented. However, reviews are carried out from time to time.

3.31 The most recent actuarial valuation of public service accrued liabilities and projection of future public service pension outgoings carried out by the Department of Finance in 2007 estimated the total accrued pension liability at €75 billion. Projections of future cash flows of public service pensions (including local authorities) were published in 2007 in the Green Paper on Pensions which estimated that the future gross cash outflows on foot of public service pension liabilities are projected to increase to 2.6% of GNP by 2027 and to reach 3.0% by around 2050. The gross cash outflows are projected to increase to 3.6% in 2058 in this report (see paragraph 2.23). This is over 60% in excess of the Commission on Public Service Pensions forecast of 1.8% based on projections in 1997.[19]

Annual Cost Estimates

3.32 The Department of Finance produces an annual analysis of Exchequer Pay and Pensions. The most recent analysis relates to the period 2003-2008 covering pay and pensions in the Civil Service, Education, Health, Security and State Sponsored Bodies' sectors. However, the pay and pension costs in local authorities and in universities is not included and information relating to State Sponsored Bodies is limited. The analysis consists of the net cash flow (after employee pension contribution) for each sector and the percentage year-on-year growth in net pension expenditures but does not identify the cost of pensions accruing in any year nor the outstanding liability deriving from accumulated pension obligations.

3.33 From the viewpoint of financial reporting, there are no current proposals that each Department should measure their precise pension liabilities. However, the Department of Finance has decided to include an estimate of the accrued pension liability for the whole public service in the annual Finance Accounts with effect from the accounting year 2008.

19 Department of Social and Family Affairs (2007), *Green Paper on Pensions,* p. 204.

National Accounts

3.34 National Accounts[20] are compiled using the standardised international accounting rules set out in the System of National Accounts (SNA93). Within the EU, more precise and prescriptive rules are given in the European System of Accounts (ESA95), which is a Council Regulation that is binding on Member States. In the SNA93 and ESA95 methodologies, liabilities for Government sponsored unfunded pay-as-you-go pension schemes are not included in the National Accounts and no account is taken of the accumulation of pension liabilities in the definition of the General Government Balance (GGB) and the General Government Debt (GGD) figure. Therefore, currently pension liabilities have no impact on the Stability and Growth Pact monitoring.

3.35 However, the SNA93 and ESA95 are being updated. All Member States will, in future, be legally obliged under new recording rules in the revised ESA95 to make and report regular estimates of the liabilities of their unfunded schemes. The results will be included in supplementary tables, rather than in the core accounts used to calculate the GGD and GGB. The calculation will extend to liabilities of unfunded occupational schemes for public employees and liabilities of the Social Insurance Fund. The current timetable envisages that the new ESA Regulation should be adopted in 2011. This will include a prescribed timetable for Member States to compile their National Accounts using the new accounting rules. Countries will be given time to adapt their compilation systems and it is expected that the new ESA will become fully operational by 2014.

Recording Pension Entitlements

3.36 The recording of information for accounting and record maintenance purposes is best done in electronic format. This allows for the generation of statistics for management purposes as well as providing a more accessible version of employment records.

3.37 This examination noted that electronic data capture was not always complete across all public service sectors, particularly where information was not held centrally within organisations in the Educational Sector with regard to Institutes of Technology, Vocational Educational Committees and in the Health Sector for voluntary hospitals and health agencies. In some cases, only sample data was available (see Appendix B). The main issues found with the data were

- a lack of information on former employees with preserved benefits
- in some cases start dates for staff who had moved between public service employers recorded date of commencement of employment in the new employing organisation and not the start date in the public service
- a lack of information on pensionable allowances
- a lack of information on added years
- the employment status of some staff is unclear, in that, the data does not indicate whether they are full time, part-time, or have left employment
- data files contained several blank or invalid fields including date of birth, start date, salary and gender.

20 The Central Statistics Office are responsible for the compilation of the annual estimates of national income and expenditure which must be drawn up in accordance with agreed EU standards and methodologies. These statistics are also used for a number of EU administrative purposes, principally estimating Gross National Income for the calculation of Ireland's contribution to the EU budget and for the calculation of the General Government Debt and Deficit used for assessing compliance with the Stability and Growth Pact.

3.38 A major shortcoming with many existing computerised payroll/personnel systems is that they were not designed to electronically record the full pensionable service of employees who transfer between public service bodies, purchase added years or leave with preserved pensions. This type of information is necessary for decision-making and in order to provide source material for actuarial review costings, pension forecasting and public reporting. Public service pension administration has, to date, been geared primarily towards the manual calculation of pensions with information extracted from manual records at the point of retirement.

Information Improvement

3.39 Certain measures are being taken to address data recording. Better pensions information has been provided to scheme members by way of an on-line Pensions Modeller[21] and an on-line Pensions Service Statements System. The service history of all active staff members in the civil service was downloaded electronically in 2007 from the existing human resource management system in each Department onto a Pension Service Statement System, which has the facility to capture full pension details and to produce pension benefit statements. Populating the system completely and accurately will entail a comprehensive pensions data cleanup exercise by all Departments to ensure the completeness and accuracy of pensions data held on the system.

3.40 The Commission on Public Service Pensions recommended the development of a specialised, computerised pensions administration system capable of sharing data between the major public service employers. The key to the success of such an overarching centralised system lies in electronic access to accurate and verified service related data. At this point, however, there is no commitment to the development of such a system for the civil service. It has been decided that this should follow verifications by all Departments of pensions data for each active member, which will entail significant work.

21 This web-based facility allows staff to enter basic details and which provides staff with an on-line estimate of their projected retirement pension benefit.

Conclusions

3.41 Most pension schemes in the public service are defined benefit schemes. Under defined benefit schemes, benefits are payable based on the level of final salary at the date of retirement. Post retirement increases, in general, are awarded in line with pay increases with the consent of the Minister for Finance.

3.42 Most public service occupational pension schemes and those of State Sponsored Bodies are financed on a pay-as-you-go basis, with the annual cost of pensions being met from current revenue in the year of payment. However, a small number of State Sponsored Bodies and certain older universities have funded schemes which were valued at approximately €1.9 billion at 31 December 2008. Assets valued at €1.7 billion will be transferred to NPRF administration and associated liabilities of €3 billion will be assumed by the State.

3.43 Accounting for pensions in Departments and Offices is based on recording the actual payments made and contributions received from serving employees. As a result, the cost of the pension earned by an employee is not captured in the relevant Appropriation Accounts. Most other State Bodies use accrual accounting in preparing annual financial statements in accordance with Financial Reporting Standard 17 with the result that obligations arising out of defined benefit schemes are included in the Income and Expenditure account and the accumulated liabilities and any related funds are recorded on the Balance Sheet.

In central government the recognition of the cost of pensions only at the point of payment is not an adequate basis of reporting the true cost of pensions. In addition, it does not adequately signal, on a timely basis the long-term cost of recruitment decisions, or decisions that extend scheme coverage or improve pension terms.

The wider introduction of an accruals-based approach to accounting for all public service pensions would bring greater cost transparency and make explicit the true financial impact of resourcing decisions. The Department of Finance's intention of including an estimate of the accrued pension liability for the whole public service in the Finance Accounts will go some way to enhance the information available to the Oireachtas.

3.44 Actuarial reviews of public service pension schemes and projections of public service pension outflows need to be done at intervals to ensure that the State is aware of the cost impact and the timing of pension outflows. All Member States will, in future, be legally obliged under new recording rules in the revised European System of Accounts to make and report regular estimates of the liabilities of their unfunded schemes.

Actuarial reviews of the liabilities of unfunded public service pension schemes and projections of public service pension outflows should be carried out on a regular basis. It is important that steps are put in place to prepare the ground for mandatory compilation of these costings under EU regulations in future years.

3.45 The quality of data obtained for this examination varied considerably between sectors and between agencies within sectors. Data was not always complete across all sectors, particularly where information within organisations was not held centrally. Data deficiencies mainly related to the failure to maintain complete employment records in electronic format on preserved pensions, pensionable allowances, added years and employment status. Some measures are being taken to address data recording.

The development of a specialised, computerised pensions administration system capable of sharing data between the major public service employers as recommended by the Commission on Public Service Pensions is a considerable task. The key to the success of any overarching centralised system lies in electronic access to accurate and validated service related data. There is no commitment to the development of this type of system for the civil service until verification by all Departments of pensions data for each active member has been completed. This will entail significant work on an incremental basis.

Appendices

Appendix A Estimation Methodology and Key Assumptions

A.1 The estimation methodology and key assumptions used in this report are described in this Appendix. Any variation in these assumptions can have a significant impact on the results. Sensitivity analysis was carried out in relation to the key assumptions and the results of this analysis is contained in Appendix C.

Pension Scheme Terms

A.2 A Public Service pension consists of two primary elements

- a lump sum at retirement, and
- a pension payable for life from retirement age onwards.

A.3 Pension benefits vary by sector and the date at which an employee joined the public service, with an element of the entitlement passing on death to a spouse or dependant. The main terms of standard pension schemes in the public service are summarised in Figure 1.2 of Chapter 1.

Valuation of Accrued Liabilities

A.4 The value of the State's accrued pension liability was calculated as at 31 December 2008. The accrued liability represents the present value of the future pension benefits that had accrued to the employee or pensioner as at the valuation date.

A.5 Under the calculation methodology employed each period of service was deemed to give rise to an additional proportion of benefit. The proportion accrued at the valuation date was determined by the number of years' service as at the valuation date multiplied by the accrual rate applicable to each year. For example, for a scheme in which the pension benefit accrues over 40 years a pension of $1/80^{th}$ of pensionable remuneration (salary plus pensionable allowances) is accrued for each year of service completed at the valuation date.

A.6 The value of accrued liabilities for active members, pensioners and preserved pensioners was calculated separately for each sector. The valuation methodology is described below.

Active Members

A.7 For members currently in employment, the accrued liability was calculated as the present value of the expected benefits at retirement based on the service completed as at the valuation date. Under this method the expected pension at retirement was calculated allowing for future general salary inflation but not for scale or promotional increases. The following was performed for each member

- The expected retirement benefits were determined by projecting current pensionable remuneration up to the assumed retirement age. Allowance was made for increases as a result of general salary inflation.
- The State Pension was projected for each year to retirement. For members with integrated pensions, account was taken of the State Pension in order to calculate the net pensionable remuneration for each year and at retirement.
- The lump sum payable at retirement was calculated based on the projected pensionable remuneration at retirement and the terms of the relevant pension scheme.
- The pension at retirement was calculated as the proportion of pension accrued at the valuation date multiplied by the projected net pensionable remuneration at retirement.

- The present value of the pension was then calculated by discounting the value of the pension at retirement to the valuation date. The discount rate assumption is outlined below.
- The capital value of the pension was calculated by applying an annuity factor to the present value of the accrued pension. The annuity factor made appropriate allowance for assumptions about mortality, pension increases, reversion, expenses and the discount rate.
- The total accrued value of the pension liabilities was calculated by adding the value of the accrued lump sum and the capital value of the pension.

A.8 The methodology used did not incorporate some particular aspects of the pension structure. These are

- The value of Ill Health Benefits and Death in Service benefits was not factored into the calculation. The impact of including these benefits would be low.
- The cost neutral early retirement scheme, whereby benefits are actuarially reduced to reflect early retirement, was not allowed for as it was assumed that these reductions are close in value to the actual cost and that there would be little or no change to the cost.
- The option for employees to purchase added years on a cost neutral basis was not included in the calculations due to the lack of available data. The impact of including this factor would be to increase the past service liability. However, the numbers taking up the scheme are low and therefore the impact on cost would not be substantial.

Pensioners

A.9 The value of pensions in payment was calculated for each retiree by applying an annuity factor to the current pension amount. The annuity factor made assumptions about mortality, pension increases, reversion and the discount rate.

Preserved Pensioners

A.10 Employees who leave public service employment before their normal retirement date may be entitled to pension benefits on reaching their normal retirement age, depending on service attained at the date of leaving. The accrued liability for preserved pensioners was calculated in a similar manner to that for active members.

Discount Rate Assumptions

A.11 A discount rate is required for the calculation of the value of the accrued pension liabilities and to calculate the new entrant rates. There are a number of approaches that can be taken to setting the discount rate used to value pension liabilities as set out below

- One option is to use an approach that is reasonably consistent with the approach used for funded schemes in the private sector. Under this option the discount rate reflects the assumed investment return on the assets used to fund the pension liabilities. This was the approach used for the Report of the Commission on Public Service Pensions.
- Alternatively, an approach that is consistent with the accounting standards that govern the valuation of pension liabilities for the accounts of private sector companies could be used (such as the Accounting Standards Board's FRS 17 or the International Accounting Standards Board's IAS 19).
- The new accounting standard issued by the International Public Sector Accounting Standards Board, IPSAS 25, was published in February 2008 (IPSAS 25 is drawn primarily from IAS 19). IPSAS 25 becomes effective from January 2011 and this approach was deemed the most appropriate one to use in this report.

A.12 Under IPSAS 25 the discount rate used should reflect the time value of money. Market yields at the reporting date on government bonds will normally provide the best approximation of the time value of money. The currency and term of the bonds selected should be consistent with the currency and estimated term of the benefits.

A.13 The average duration of the pension liabilities is in a range of 20 to 30 years. As there are no Irish Government Bonds with this term, the discount rate was based on the yield on a benchmark Eurozone Government Bond with an appropriate maturity plus a margin reflecting the spread between Irish and European government bonds. It should be noted that this methodology leads to a higher discount rate when the cost of Ireland's Government debt is high.

A.14 The yields on Irish and German benchmark 10-year bonds were compared to determine the margin between Irish and European government bonds, which was 1.49% as at 31 December 2008.

A.15 A real discount rate was subsequently derived from the nominal discount rate and implied inflation. Implied inflation was determined from a comparison of the yields on the French nominal and inflation-linked bonds. The French Government Tresor 2032 Bond pays a return that is directly linked to Eurozone inflation.

A.16 The calculation of the accrued pension liability assumes that future pension payments are indexed with real salary inflation. Therefore, it is the real discount rate (the rate after removing the effect of inflation) that is significant. The derivation of the real discount rate and implied inflation is summarised in Figure A.1.

Figure A.1 Derivation of Discount and Inflation Rate

		Yield as at 31 December 2008 % per annum
i	**Benchmark German Government Bond (January 2037, 4% coupon)**	**3.53**
ii	Benchmark Irish Government Bond (October 2018)	4.44
iii	Benchmark German Government Bond (July 2018)	2.95
iv	**Margin between Irish and German Benchmark Bonds (ii-iii)**	**1.49**
v	French Government Bond (FRTR October 2032)	3.94
vi	French Government Index Linked Bond (FRTRi October 2032)	2.25
vii	**Break-even Inflation {((1 + v) / (1 + vi)) – 1}**	**1.65**
viii	**Derived Nominal Discount Rate (i + iv)**	**5.02**
ix	**Derived Real Discount Rate {((1 + viii) / (1 + vii)) – 1}**	**3.31**

A.17 The real discount rate used in the report was rounded from 3.31% to 3.30% for calculations made in this report.

Pension Increases

A.18 The value of the accrued pension liability is calculated assuming that future pension increases are awarded at the same rate as general salary inflation i.e. 1.75% p.a. above price inflation (pay parity).

State Pension Increases

A.19 The pension consultants have assumed that the State Pension will increase at the same rate as general salary inflation.

Mortality

A.20 There are two key assumptions about mortality to consider

- The current level of mortality being experienced by public service employees
- The future improvements in mortality that this group are likely to experience.

A.21 These two assumptions will determine how long a pension will be paid on average. The pension consultants looked at available data in both Ireland and the UK to determine an appropriate assumption about the current mortality of public service employees and an assumption of 85% of the CSO Irish Life Table 15 was used.

Mortality Improvements

A.22 The CSO has produced population projections to 2041.[22] As part of this process it made assumptions about mortality improvements up to 2041. For consistency the pension consultants used the same approach to mortality improvements in their work.

A.23 A consequence of using the CSO assumptions is that the average life expectancy is projected to increase considerably over this period. Figure A.2 shows the projected remaining life expectancy for males and females in the general population reaching age 65 at various years in the future.

Figure A.2 Life Expectancy at Age 65

	2008	2018	2028	2033	2048	2058
Male	17.7	20.7	22.6	23.7	24.6	25.5
Female	20.5	22.5	23.9	24.9	25.8	26.6

Proportion Married

A.24 An assumption of the proportion of those reaching retirement age that are married was based on the proportion of those in the labour force in the ages around retirement who were married from the 2006 Census of population. For calculating the value of reversion benefits it was assumed that a female spouse was three years younger than a male and that a female member was three years younger than a male spouse.

22 M2F1 Scenario from Population and Labour Force Projections 2011-2041, CSO (2008).

Future Cash Flow Projection

A.25 The projected gross benefit expenditure for all active employees, pensioners and preserved pensioners and new entrants (including lump sum benefits) for the period 2009 to 2058 and the related standard contributions from employees, including PRD, is shown in Chapter 2.

A.26 As the Irish population is projected to increase significantly over the next 50 years, it seems appropriate to assume that the number of employees in the public service will change over time in some relationship to the size of the population. Some high-level assumptions about the future size of the public service have been made. It is acknowledged that policy decisions in relation to the size of the public service will not necessarily reflect those assumptions.

High Level Assumptions on the Future Size of the Public Service

A.27 For the purpose of estimating future cash flows an assumption was made that the number of employees in each sector would be driven by the change in different segments of the population. It seems reasonable to assume that the size of the education sector will vary in some relationship to the number of people of school-going age, say from age 5 to 18 years. In the health sector an assumption has been made that the size of the sector will be affected equally by the size of the total population (as all people require some level of health care) and by the proportion of the population aged over 65 years (the level of health care required generally increases as people age). For other sectors the working assumption was that the need for these services would be driven by the overall size of the population. These assumptions are summarised in Figure A.3.

Figure A.3 Factors Affecting the Future Size of the Public Service

Sector	Public Service will Change in Proportion to
Health	An average of (a) Total Population and (b) Population Aged Over 65 years
Education	Change in Population Aged Between 5 and 18 years
Other Sectors	Total Population Size

A.28 Figure A.4 summarises the percentage change in population from 2008 over the next 50 years. This is based on CSO population projections as shown below. The Department of Finance have extended the CSO projections beyond 2041 to 2060 using the same methodology.

Figure A.4 Percentage Change in Population from 2008

	2018	2028	2038	2048	2058
	%	%	%	%	%
Total Population	19	31	39	47	52
Population over 65	43	99	166	253	309
Population aged between 5 and 18	18	31	21	18	25

Source: M2F1 Scenario from Population and Labour Force Projections 2011-2041, CSO (2008).

A.29 The Department of Finance have forecast that the total population will increase by 52% over the next 50 years from 4.4 million to 6.7 million. However within this, the population aged over 65 years is expected to increase by more than 300%.

A.30 The assumed projected increase in size in the public service is shown in Figure A.5. It is acknowledged that this figure will be affected by rates of immigration, emigration and birth rates as well as mortality.

Figure A.5 Projected Size of the Public Service

	2008	2018	2028	2038	2048	2058
Civil Service	38,572	45,825	50,577	53,785	56,636	58,587
Health	112,500	146,617	182,051	216,849	256,671	280,990
Security	26,202	31,129	34,357	36,536	38,473	39,798
Education	92,480	109,109	121,222	111,635	108,761	115,320
State Sponsored Bodies	12,175	14,464	15,964	16,977	17,877	18,493
Total	**281,929**	**347,144**	**404,171**	**435,782**	**478,418**	**513,188**

A.31 Figure A.6 translates these increases into percentage changes relative to 2008. Overall, the increase is projected to be 82%.

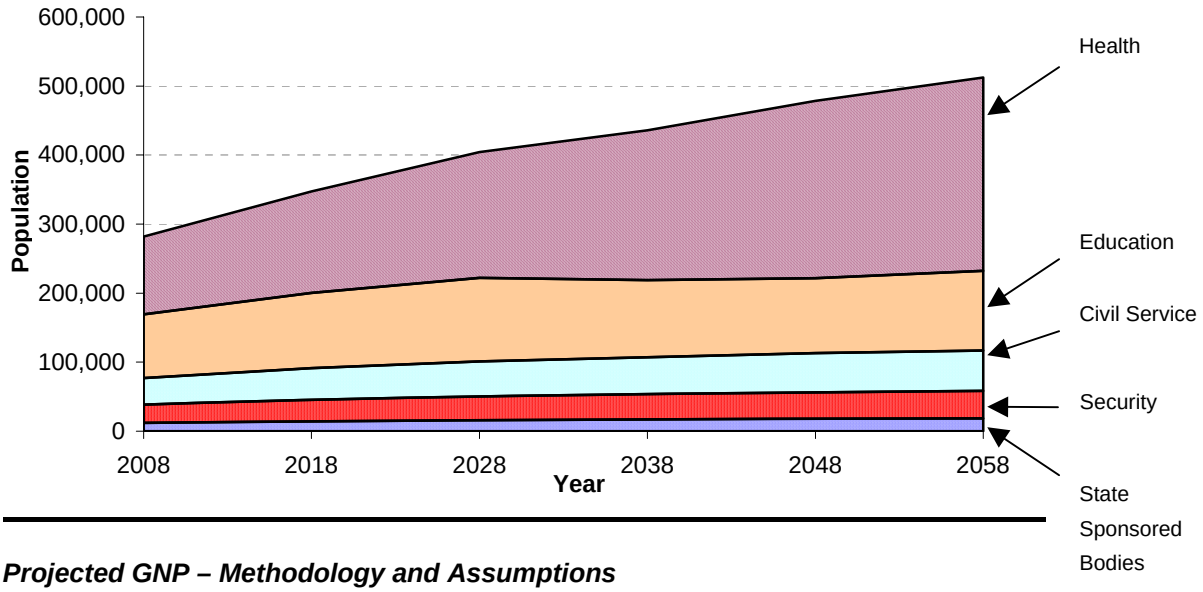
Figure A.6 Percentage Change in the Size of the Public Service from 2008

	2018	2028	2038	2048	2058
	%	%	%	%	%
Civil Service	19	31	39	47	52
Health	30	62	93	128	150
Security	19	31	39	47	52
Education	18	31	21	18	25
State Sponsored Bodies	19	31	39	47	52
Total	**23**	**43**	**55**	**70**	**82**

A.32 The projected change in the population leads to a projected increase in the size of the public service across all sectors of over 80% over the next 50 years. The projected increases vary by sector from 25% for Education to 150% for Health reflecting the changes in different segments of the population.

A.33 The projected size of the public service as assumed in this report is represented graphically in Figure A.7.

Figure A.7 Projected Size of the Public Service



Projected GNP – Methodology and Assumptions

A.34 Where possible the GNP projection methodology and assumptions used by the pension consultants are consistent with other published work. The starting point was to use the Department of Finance economic projections from the Irish Stability Programme Update, January 2009.[23] These projections provided forecasted GNP for the period 2008-2013.

A.35 Beyond this period real GNP growth is determined by the growth in employment and the growth in output per worker (i.e. productivity). Employment growth is derived from increases in labour force growth, adjusted for unemployment. The projected labour force is derived from the Central Statistics Office (CSO) population projection and labour force participation rates as described below.

A.36 The results from the short and long term projections were then smoothed to give a reasonable trend from the short to long term projections.

Population Projection

A.37 The CSO published population and labour force projections for 2011-2041.[24] These contained projections based on different scenarios for future migration and fertility assumptions. The pension consultants have used the M2F1 scenario (moderate immigration, high fertility) as representing a reasonable central estimate of future population development for this purpose.

A.38 The F1 fertility scenario assumes that the total fertility rate remains at its 2006 level of 1.9 for the lifetime of the projections.

A.39 The M2 migration scenario assumes that immigration will continue but at more moderate levels in future than has recently been experienced

- +50,000 per annum in 2006-2011
- +35,000 per annum in 2011-2016
- +25,000 per annum in 2016-2021
- +10,000 per annum in 2021-2041.

23 Addendum to the Irish Stability Programme Update, January 2009, Department of Finance.

24 Population and Labour Force Projections 2011-2041, CSO (2008).

A.40 The economic situation is changing rapidly and in the current environment the assumed migration levels may seem optimistic. Assuming a lower level of immigration would result in a lower projected population which would in turn reduce both projected GNP and the projected size of the public service. This would increase the cost of pension benefit payments as a percentage of GNP in the short to medium term as pension benefits would remain unchanged while both GNP and contribution income would be lower.

Labour Force Projection

A.41 The labour force was projected by applying labour force participation rates to the population projection. Labour force participation rates from the EU's Ageing Working Group were used.

A.42 These are similar to the rates produced by the CSO's Population and Labour Force projections in 2008. The main difference between the two is that the EU adopts a 'cohort' approach to female participation. This allows for the fact that women in each cohort have their own specific level of participation, which is usually higher at all ages than the corresponding level at older generations. The result is a gradual replacement of currently older women with relatively low participation rates, by younger women who have a much stronger attachment to the labour force. The EU rates also allow for stronger participation amongst older people than the CSO rates.

Unemployment Rate

A.43 The pension consultants assumed a long-run value of 7% for unemployment. This is consistent with the economic projections presented in the 'Addendum to the Stability Programme Update' published by the Department of Finance in January 2009.

A.44 The number of people in employment was determined as the total labour force less those unemployed.

Productivity Growth

A.45 According to the ESRI's latest Medium Term Review,[25] average productivity growth per worker was predicted to be between 2.0% and 2.5% per annum over the period 2005 to 2020. However, following discussions with the Department of Finance, the pension consultants have used a figure of 1.75% per annum as being more appropriate in light of current economic developments. This is in line with the long-run assumption used by the EU's Ageing Working Group for all EU countries.

Projected GNP

A.46 The growth in real GNP was determined from the growth in employment and productivity growth. The resulting GNP projections are summarised in Figure A.8.

Figure A.8 GNP projections (€m), 2008 to 2058, Central Scenario

	2008	2018	2028	2038	2048	2058
Real GNP (2008 base)	156,275	185,838	238,585	296,229	345,969	402,257
Average 10 year growth % p.a.	-	1.75%	2.53%	2.19%	1.56%	1.52%

25 Medium Term Review 11, 2008-2015.

Cost of Public Service Pensions

A.47 Numerous different figures could be described as the 'Cost of Public Service Pensions'. In this report the pension consultants set out two methods for determining the cost

- the cost of one year's service
- the new-entrant contribution rate.

Cost of One Year's Service

A.48 Under this method the cost that arises from one year's additional service was determined. The cost is equal to the change in the accrued liability over the year for active members and is then expressed as a percentage of pensionable remuneration. The change in the accrued liability is equal to

Accrued Liability (1) / (1 + discount rate) – Accrued liability (0)

Accrued Liability (0) is calculated as described in the section entitled Active Members (Para A.7) and
Accrued Liability (1) is the accrued liability for one year's age, service and salary increases (including scale and promotional increases).

This is the cost of all currently serving staff and therefore includes members with pre 1995, post 1995 and post 2004 pension terms.

New Entrant Contribution Rate

A.49 Under this method the effective contribution rate that would be required to fund future pension benefits for a new entrant is determined. The effective contribution rate is the proportion of pensionable remuneration that would have to be contributed for each year of service in order to provide the benefit accrued at retirement.

A.50 Standard employee contributions and the PRD were deducted to get the net value to the employee of the effective employer contributions. This is, of course, a notional employer contribution in the case of public service pensions since the pensions are actually paid on a pay-as-you-go basis. However, it does indicate the value of the contributions which would be required to fund the benefits receivable if contributions were actually being paid into a fund.

A.51 Pension benefits differ for different cohorts of public service employees. The most recent change was for employees joining from 2004 onwards and the new entrant contribution rates are based on these terms.

New Entrant Contribution Rate – Calculation Methodology

A.52 The calculation methodology is as follows

- The pension consultants started with a typical new entrant level for pensionable remuneration and age at entry (see Figure A.9 below).
- The pensionable remuneration for each year to retirement age was projected allowing for increases as a result of inflation and scale increases (where appropriate).
- The State Pension for each year to retirement was also projected to allow for the calculation of net pensionable remuneration for each year and at retirement.
- Pension and lump sum benefits were calculated based on assumptions about retirement age and the terms of the relevant pension scheme.

- Appropriate allowance was made for staff turnover. It was assumed that all leavers would receive a deferred pension at retirement based on their service to date of leaving. Contributions were allowed for while they were in employment only.
- A capital value at retirement was placed on those benefits by discounting future pension payments to retirement age (making appropriate assumptions about mortality, pension increases, reversion, expenses and the discount rate) and adding the projected lump sum payment.
- The equivalent annual contribution rate as a percentage of pensionable remuneration that would be required over the working life of the employee was calculated so that the accumulated value of the contributions made is equal to the capital value that would be required at retirement.
- Finally, standard employee contributions and the PRD were deducted to arrive at a net required employer contribution. This is deemed to represent the value of the benefits. It is the contribution as a percentage of pensionable remuneration that the employer would need to pay which, when combined with employee contributions and the PRD, would produce the pension benefits that have been promised in retirement.

A.53 The characteristics of a typical new entrant for each of the categories in the public service joining after 1 January 2005 is shown in Figure A.9. The results are shown in Figure 2.10 of Chapter 2.

Figure A.9 New Entrant Contribution – Assumed Characteristics

Category of Employment	Age at Entry	Retirement Age	Pensionable Remuneration at Entry[a]	Pensionable Remuneration at Retirement[b]	Added Years
Civil Service					
Established	29	65	26,000	68,000	0
Non-Established	27	65	22,000	32,000	0
Education					
Primary Teacher	22	65	32,000	72,000	0
Post-Primary Teacher	26	65	32,000	74,000	0
Security					
Garda	23	55	45,000	68,000	0
Prison Officer	28	55	26,000	51,000	0
Commissioned Officer	22	50	25,000	76,000	0
Enlisted Personnel	19	50	19,000	41,000	0
Health					
Consultant	40	65	170,000	171,000[c]	3.3
Nurse (general)	30	65	32,000	55,000	0
State Sponsored Bodies					
Established Officer	29	65	36,000	73,000	0

Notes:

a Average remuneration for new entrants including pensionable allowances.

b Average expected remuneration at retirement including pensionable allowances.

c Consultants' remuneration varies depending on the geographical area in which the consultant works and on their speciality. No allowance was made for the new Consultant's contract arrangements.

Effect of the Pension Related Deduction

A.54 The impact of the PRD recently implemented under legislation for employees in the public service has been taken into account. These deductions commenced with effect from 1 March 2009 in respect of remuneration paid after that date.

A.55 Generally, the PRD applies to public servants who are employed by or hold an office or position in a Public Service Body and are members of a Public Service Pension Scheme. The deduction is charged on all income including non-pensionable pay, overtime, acting up allowances and benefit-in-kind. The deduction is treated as a pension deduction and tax relief is given at the marginal rate. The deduction was initially made at the following rates

- 3% of first €15,000
- 6% of next €5,000
- 10% of amount above €20,000.

A.56 This was revised in the Supplementary Budget in April 2009 to

- Nil for first €15,000
- 5% of next €5,000
- 10% on earnings between €20,000 and €60,000
- 10.5% on earnings above €60,000.

A.57 The PRD does not affect the value of the accrued liabilities shown in this report but it reduces the new entrant effective contribution rate and has to be taken into account in calculating the future cash flow projections. The calculations in this report are based on the original rates. This means that the income from the PRD has been slightly overestimated in our calculations and conversely the net cost and net benefit outflows have been slightly underestimated.

A.58 On the other hand, the PRD applies to total remuneration, including non-pensionable allowances. The calculations in this report are based on pensionable remuneration only. This will offset the impact of using the original contribution rates as described in A.57 above.

Appendix B Data Analysis and Completeness

B.1 A commentary on the data required to enable the pension consultants to estimate and calculate projections of costs and liabilities and commentary on the quality and quantity of data collected is set out in this Appendix.

B.2 A large amount of information was required to calculate the value of public service pensions including data on serving staff, pensioners and leavers in each sector. Personal identifiers (such as name, employee number, PRSI number etc.) were removed from all data received. The data received from each sector was based on active employees and pensioners at various dates between 30 June 2008 and 31 December 2008. Data was not requested from Local Authorities.

B.3 A complete data set was received for the civil service and Security Sectors and from the larger employers in Health, Education and State Sponsored Bodies. A selection of data files was received from other employers. Information was not sought from all bodies as this was not practical due to the large number of small bodies within the Health, Education and State Sponsored Bodies sectors where data is held on many different systems in a non-centralised and non-standardised format. This is particularly the case for State Sponsored Bodies. In some cases data received was incomplete or only sample data was available. Some adjustments were, therefore, required to almost all files.

Scaling Factors

B.4 Scaling factors were used to scale up the results from the data received. The methodology used by the pension consultants for determining these factors is described below.

Currently Serving Staff

B.5 The whole-time equivalent (WTE) number of staff in the data received was recorded and compared to the estimated total whole-time equivalent public service numbers employed for 2008 in the Analysis of Exchequer Pay and Pensions Bill 2003 – 2008 published by the Department of Finance. The results were scaled up accordingly and the scaling factors used are shown in Figure B.1.

Figure B.1 Scaling Factors - Employees

Sector	Data WTE	Estimated Total WTE	Scaling Factor %
Civil Service	37,887	38,572	102
Health	98,646	112,500	114
Security	27,355	26,202	100[a]
Education	80,219	92,480	115[b]
State Sponsored Bodies	5,910	12,175	206[c]
	250,017	**281,929**	

Notes:

a It was not appropriate to scale down the results of the data received so a factor of 100% was used.

b The scaling factor for serving staff in Education was not applied evenly. A complete data file was received for teachers and universities so a scaling factor of 100% was used for these sectors. For ITs and VECs sample data files were provided so a scaling factor of 224% was used for ITs and a scaling factor of 248% for VECs.

c The high scaling factor for State Sponsored Bodies is used because information was not requested from all bodies due to the large number of small bodies in this sector.

Pensioners

B.6 The number of pensioners in the data received was recorded and compared to the estimated total number of pensioners for 2008 in the Analysis of Exchequer Pay and Pensions Bill 2003 – 2008. The results were scaled up accordingly and the scaling factors used are shown in Figure B.2.

Figure B.2 Scaling Factors – Pensioners

Sector	Data	Estimated Total	Scaling Factor %
Civil Service	15,419	15,660	102[a]
Health	17,744	29,549	167[b]
Security	18,456	19,495	106
Education	22,207	25,223	114[c]
State Sponsored Bodies	3,607	7,044	195[d]
	77,433	**96,971**	

Notes:

a Prison Officers are included under Civil Service here and not under Security as for currently serving staff.

b The scaling factor for Health is higher here than for currently serving staff because some bodies that provided data for serving staff did not provide data for pensioners.

c The scaling factor for pensioners in Education was not applied evenly. A complete data file was received for teachers and universities so a scaling factor of 100% was used for these sectors. Sample data files were provided for ITs and VECs so a scaling factor of 349% was used.

d The total number of pensioners shown in the Exchequer report is 90,847. This figure excludes universities and only includes an amount of 3,728 for State Sponsored Bodies. This is the number of pensioners from State Sponsored Bodies that are currently being paid by the Exchequer. The figure has been scaled up to reflect the total number of pensioners from State Sponsored Bodies which is estimated to be 7,044.

Leavers Entitled to a Preserved Pension

B.7 Numbers were not available for former public service employees who remain entitled to a preserved pension at retirement age in the Health, Education and State Sponsored Bodies sectors. Therefore, the scaling factor was calculated using the WTE number of currently serving employees for the bodies for which leavers' data was received divided by the estimated total WTE equivalent public service numbers employed for 2008 in the Analysis of Exchequer Pay and Pensions Bill 2003 – 2008. The results were scaled up accordingly and the scaling factors used are shown in Figure B.3.

Figure B.3 Scaling Factor for Staff Leavers

Sector	Serving Staff		Scaling Factor %
	Data	Estimated Total	
Health	90,628	112,500	124
Education	73,077	92,480	127[a]
State Sponsored Bodies	5,910	12,175	206

Note:

a The scaling factor was not applied evenly for Education. A factor of 100% was used for teachers and a factor of 127% for universities. A scaling factor of 310% was used for ITs and 616% for VECs.

B.8 The reason the scaling factors are higher here is because several bodies that provided data for serving staff did not provide data for leavers. A complete leavers' data file was received for the civil

service so a scaling factor of 100% was applied. Leavers' data was not required for the Security sector for the reasons set out in Note a to Figure 2.1.

B.9 The number of leavers in the data that are entitled to a preserved pension was determined based on years' service and scheme rules. These scaling factors were applied to data received for preserved pensioners and resulted in total numbers of preserved pensioners by sector as outlined in Figure B.4.

Figure B.4 Data Received Compared to Total Preserved Pensioners

Sector	Data	Total
Civil Service	4,639	4,639
Health	37,180	46,153
Security	0	0
Education	16,294	20,620
State Sponsored Bodies	848	1,747
	58,961	**73,159**

Data Quality

B.10 Data gaps could have a significant impact on the results. The pension consultants performed a number of checks on the data received which included

- comparing the total amounts of pensions, pay, employees and pensioners against the Analysis of the Exchequer Pay and Pensions Bill 2003-2008
- checks on average ages, salaries, and pension amounts to ensure that these were reasonable.

B.11 The quality of the data varied considerably between sectors and between agencies within a sector. The main data issues are set out below

- A lack of information on former employees with preserved benefits (leavers) which means that the accrued liability for preserved pensioners may be understated.
- Instances where the start date for commencement of employment in the public service was unavailable. Instead the start date reflected the date an employee commenced in a particular sector or agency. This means that the accrued liability for active members may be understated.
- A lack of information on pensionable allowances. However, the pension consultants were able to reasonably approximate the allowances that apply and this does not have a significant impact on the results.
- A lack of information on added years. This does not have a significant impact on the accrued liability since added years are only granted to a small number of employee types.
- In some instances, the status of currently serving staff was unclear. For example, the salary field for some records could be very low and it is not always clear if this means that the employee is part-time or no longer employed. It was assumed that all active employees are currently employed and that their salary is as provided. This is unlikely to have a significant impact on the results.
- Data files contained several blank or invalid fields including date of birth, start date, salary, and gender. In these cases averages were taken from the relevant sector as appropriate and therefore this is unlikely to have a significant impact on the results.

Data Adjustments

B.12 There were several adjustments which were necessary for the data received including

- If the date of birth or start date fields were blank or invalid then the date was set so that the age at entry equalled the median age at entry for other employees in the data file.
- If the salary field was blank or zero then the employee was excluded from the calculations. Typically it was found, in consulting with the data provider that these employees were temporary, casual or on contract and therefore unlikely to be members of the pension scheme.
- Where information on pensionable allowances was not available averages were taken from other data in the same sector.
- If the gender field was blank or invalid then the employee was given the most common gender in the data file.

Confidence Levels

B.13 The level of confidence in the results is affected by both the quantity and quality of the data received. The completeness of the data received for each sector is shown in Figure B.5.

Figure B.5 Proportion of Data Received from each Sector

Sector	Active Members	Pensioners	Preserved Pensioners	Total[a]
	%	%	%	%
Civil Service	98	98	100	98
Health	88	60	81	76
Security	100	95	0	97
Education	91	88	79	89
State Sponsored Bodies	49	51	49	50

Note:

a The total figure is calculated as a weighted average of the active members, pensioners and preserved pensioners based on the value of the accrued liability for each.

B.14 The confidence level in the calculations for each sector based on the quality of data received is shown in Figure B.6. The pension consultants have used a score with a range of 1 to 5 with 1 being poor and 5 being very good.

Figure B.6 Quality of Data Received from each Sector

Sector	Active Members	Pensioners	Preserved Pensioners	Total
Civil Service	5	5	4	5
Health	3	4	2	3
Security	4	4	N/A	4
Education	3	4	3	3
State Sponsored Bodies	4	4	4	4

Civil Service

B.15 The civil service active members and pensioners data has a score of 5 since a complete data set was received in a single data file that contained all required fields and no adjustments were required to the data. The civil service preserved pensioners data has a score of 4. This file was also a complete single file which contained all required fields. However, the earliest leaving date shown in the data provided is in 1988 and therefore it is possible that it does not fully reflect the preserved pension entitlements.

Health

B.16 The quality of the data varies between bodies within the health sector. PPARS (Personnel, Payroll and Related Systems)[26] holds a large number of employee records. It was found that PPARS Phase 1 data is not always up to date. PPARS represents 31% of active staff members, 43% of pensioners and 40% of preserved pensioners in the data provided for this sector. The start date for employees in Health is not always reliable as it could reflect the date an employee started in a particular body rather then the date that employment in the public service commenced.

B.17 The data on active members in the health sector has a score of 3. This is due to the fragmented nature of the data and also because the start date provided in the health sector data for active members is unreliable. Data on preserved pensioners in the health sector has a score of 2 as it is also fragmented and a much higher proportion of it is from PPARS Phase 1 (since it was not available for many other HSE areas). The data on pensioners in the health sector has a score of 4. However, the start date provided for pensioners may not be reliable but this is not relevant for calculating the pension liability.

Security

B.18 The security sector active members and pensioners data has a score of 4 since complete data sets were received in single data files that contained all required fields. However, as it was difficult to obtain accurate information on allowances, averages were used. Preserved pensioners data was not provided but this is not expected to be significant since there are only 179 preserved Gardaí pensioners and there is no preserved pension entitlement for Defence.

Education

B.19 The education sector, similarly to the health sector, is very fragmented and the start date is not reliable. A significant portion of the data was provided in a single file from the Department. However, it was difficult to obtain a complete and accurate file due to the large number of employees included. Data from the universities, VECs and ITs was not always available in the format required.

26 PPARS Phase 1 is a Personnel system for HSE Eastern Region, Western and North Eastern Areas. PPARS Phase 2 is an integrated Personnel and Payroll system for HSE North Western, Midlands and Mid-Western Areas and also includes St. James' Hospital.

State Sponsored Bodies

B.20 Data provided by the State Sponsored Bodies was comprehensive and of good quality. Some approximations were required but these were not significant.

Overview – Data Quality

B.21 Overall, the pension consultants received a very large data sample of good quality. The most significant data issues and the potential impact of these are as follows

- There was no data requested from Local Authorities. The accrued liability for Local Authorities is shown in Figure 2.1. and represents 7% of the total accrued liability. This estimate could either overstate or understate the accrued liability.
- There is a lack of information on preserved pensioners. Based on the data received the liability for preserved pensioners is 5% of the total accrued liability, although the number of preserved pensioners will increase over time. If the number of preserved pensioners was in fact 10% higher than that assumed this would have the effect of increasing the accrued pension liability by 0.5%.
- There is a lack of accurate start dates and this primarily impacted on the health and education sectors. If two extra years service should apply to these sectors then this could increase the total accrued pension liability by 6%.
- Adjustments and approximations to data were necessary where fields were blank, invalid or not available and the impact of these adjustments could either marginally overstate or understate the accrued pension liability.
- There is a lack of information on added years although this would not have a significant impact on the accrued pension liability since added years are only granted to a small number of employee types. One extra added year would increase the new entrant cost for an employee by approximately 0.4%.

B.22 Overall, the pension consultants have reasonably high confidence in the figure for the value of accrued liabilities of €108.4 billion before the deduction of assets held within funded pension schemes and before allowance for NPRF assets. However the data issues mentioned above mean that they expect that the actual value will be within a range of -5% to +10% of the calculated figure, that is within the range of €103 billion to €119 billion (before the deduction of assets held within funded pension schemes and before allowance for NPRF assets).

Appendix C Sensitivity Analysis

C.1 A number of assumptions were made in respect of the calculations contained in this report and these are set out in Appendix A. Any variation in these assumptions can have a significant impact on the results. Sensitivity analysis was carried out in relation to two key assumptions – the discount rate and the rate of real wage growth. The results of this analysis are contained in this Appendix.

Discount Rate Sensitivity

C.2 A discount rate is used to determine the value in present terms of future pension payments and receipts. The present value of the accrued liabilities is effectively an amount due at the end of 2008 in respect of future liabilities that had accrued at that date. Since the IPSAS 25 standard is being used the discount rate changes over time driven by the yield on Government Bonds. [27]

C.3 A change in the real discount rate will affect both the value of the accrued liabilities and the pensions cost (both the cost of one year's additional service for active members and the new entrant contribution rates).

C.4 It is important to point out that the discount rate used to value the accrued liability changes over time based on changes in the nominal yield on Government Bonds and future inflationary expectations. Consequently, the discount rate is constantly changing. The result is that the valuation of pension liabilities can only be a projection at a point in time. Nonetheless, it is the best yardstick available to attempt to measure future obligations of existing accrued liabilities. In order to demonstrate the impact of movement in the discount rate Figure C.1 shows the effect of increasing the discount rate used (3.30% per annum) by 0.5% on the value of the accrued liabilities. The total liability would reduce from €106.6 billion to €96.9 billion (net of assets held within funded pension schemes but before allowance for NPRF assets) which is a reduction of 9%. A reduction in the discount rate would lead to a similar impact but in the opposite direction leading to an increase in liabilities.

27 The real discount rate is driven by the nominal yield on Government Bonds and future inflationary expectations. These can be volatile over time which will lead to volatility in the accrued liability and pension cost. By way of illustration, since 31 December 2008, the real discount rate has increased by 0.79% from 3.31% to 4.10% as at 30 June 2009.

Figure C.1 Accrued Liabilities with Discount Rate Increased by 0.5%

Sector	Net Liability Base Case	Net Liability Discount Rate + 0.5%	Difference
	€ million	€ million	€million
Civil Service	13,518	12,291	(1,227)
Health	22,892	20,668	(2,224)
Gardaí	8,342	7,603	(739)
Prison Officers	1,246	1,133	(113)
Defence Forces	8,574	7,799	(775)
Teachers[a]	28,167	25,677	(2,490)
VECs and ITs	6,009	5,475	(534)
Universities	3,685	3,223	(462)
State Sponsored Bodies	5,842	5,496	(346)
Constitutional, Ministerial and Judicial Office-Holders	785	725	(60)
Local Authorities (Estimate)	7,499	6,837	(662)
Total Public Service	**106,559**	**96,927**	**(9,632)**
One-third of NPRF[b]	5,381	5,381	0
Liability Net of NPRF	**101,178**	**91,546**	**(9,632)**

Notes:

a Includes primary teachers, post-primary teachers, special needs assistants and non-teaching staff in schools.

b One-third of €16,142 million.

Discount Rate Adjustment

C.5 The impact of increasing the discount rate by 0.5% per annum on the new entrant contribution rates for males is shown below in Figure C.2.

Figure C.2 Increase of Discount Rate by 0.5% for New Entrant Contribution Rates for Males

Category of Employment	Net Cost[a] Base Case	Net Cost Discount Rate + 0.5%	Difference
Civil Service			
Established	11.9%	8.5%	-3.4%
Non-established	2.2%	0.8%	-1.4%
Education			
Primary teacher	7.2%	3.9%	-3.3%
Post-Primary teacher	9.8%	6.4%	-3.4%
Security			
Garda	16.0%	11.6%	-4.4%
Prison officer	15.6%	11.9%	-3.7%
Commissioned officer	28.3%	22.3%	-6.0%
Enlisted personnel	14.8%	11.4%	-3.4%
Health			
Consultant	10.4%	7.2%	-3.2%
Nurse (general)	5.0%	2.4%	-2.6%
State Sponsored Bodies			
Established officer	9.3%	6.1%	-3.2%

Note:

a The net cost is net of both the employee contributions and the PRD.

C.6 While the projected pension benefits and contributions are unchanged, an increase in the real discount rate leads to a reduction in the present value of the liabilities and therefore in the new entrant contribution rates. The effect is to reduce the net cost by between 1.4% and 6.0% which reveals that the cost is very sensitive to this assumption. A reduction in the discount rate of 0.5% would lead to an equivalent impact on the results, but in the opposite direction.

Salary Inflation

C.7 The impact of increasing the assumed real rates of wage growth (the real rate is the amount in excess of price inflation) and State Social Insurance pension increases by 0.5% per annum was examined. Increasing the real rates by 0.5% per annum would lead to a revised assumption for real general salary inflation and State pension increases of 2.25% per annum. The impact on the value of the accrued pension liability is shown in Figure C.3.

Figure C.3 Accrued Liabilities with 0.5% Increase in Salary Inflation

Sector	Net Liability Base Case	Net Liability Salary Inflation + 0.5%	Difference
	€ million	€ million	€ million
Civil Service	13,518	14,890	1,372
Health	22,892	25,139	2,247
Gardaí	8,342	9,169	827
Prison Officers	1,246	1,372	126
Defence Forces	8,574	9,448	874
Teachers[a]	28,167	30,951	2,784
VECs & ITs	6,009	6,605	596
Universities	3,685	4,206	521
State Sponsored Bodies	5,842	6,233	391
Constitutional, Ministerial & Judicial Office-holders	785	850	65
Local Authorities (Estimate)	7,499	8,220	721
Total Public Service	**106,559**	**117,083**	**10,524**
One-third of NPRF[b]	5,381	5,381	0
Liability net of NPRF	**101,178**	**111,702**	**10,524**

Notes:

a Includes primary teachers, post-primary teachers, special needs assistants and non-teaching staff in schools.

b One third of €16,142 million.

C.8 The total liability increases from €106.6 billion to €117.1 billion (net of assets held within funded pension schemes but before allowance for NPRF assets) which is an increase of 10%.

C.9 The impact of increasing salary inflation by 0.5% per annum on new entrant contribution rates for males is shown in Figure C.4.

Figure C.4 New Entrant Contribution Rates – Males with 0.5% increase in Salary Inflation

Category of Employment	Net Cost[a] Base Case	Net Cost Salary Inflation +5%	Difference
Civil Service			
Established	11.9%	15.7%	3.8%
Non-established	2.2%	3.6%	1.4%
Education			
Primary teacher	7.2%	11.0%	3.8%
Post-Primary teacher	9.8%	13.7%	3.9%
Security			
Garda	16.0%	21.2%	5.2%
Prison officer	15.6%	19.8%	4.2%
Commissioned officer	28.3%	35.5%	7.2%
Enlisted personnel	14.8%	19.0%	4.2%
Health			
Consultant	10.4%	14.2%	3.8%
Nurse (general)	5.0%	8.0%	3.0%
State Sponsored Bodies			
Established officer	9.3%	13.0%	3.7%

Note:

a The net cost is net of both employee contributions and the PRD.

C.10 The impact is an increase in the net cost by between 1.4% and 7.2%. This demonstrates that the cost is very sensitive to this assumption.

Appendix D Comparative Figures

D.1 There have been some estimates produced in recent years as to the value of public service accrued pension liabilities and the cost of Public Service pensions. In this Appendix, a comparison between the findings in this report and those of two such evaluations are examined as follows

- Commission on Public Service Pensions Report, 2000
- Report of the Public Service Benchmarking Body, 2007.

Comparison with Commission on Public Service Pensions Report

D.2 The Report of the Commission on Public Service Pensions (CPSP) used an approach for setting the discount rate that was consistent with the costing of pension fund liabilities in the private sector. The discount rate used was assumed to be 4% in excess of price inflation. The rate of general salary increases was assumed to be 1.5% per annum in excess of price inflation. The value of the accrued pension liability and the cost of pensions are affected by the net of these two figures.

D.3 The pension consultants compared the effect of using a similar approach in setting the discount rate to that used in the CPSP Report in Figure D.1.

Figure D.1 Comparison of CPSP with IPSAS 25

	CPSP Approach	IPSAS 25
Real discount rate	4.00%	3.30%
General salary inflation (in excess of price inflation)	1.50%	1.75%
Net real discount rate	**2.50%**	**1.55%**

D.4 The impact of using the CPSP approach in this report on the value of the accrued liabilities is shown in Figure D.2. The total liability under the CPSP assumptions would be €89.4 billion (net of assets held within funded pension schemes but before allowance for NPRF assets) which is a reduction of 16%.

Figure D.2 Accrued Liabilities with CPSP Approach to Setting Discount Rate

Sector	Net Liability Base Case	Net Liability CPSP Approach to Discount Rate	Difference
	€ million	€ million	€ million
Civil Service	13,518	11,321	(2,197)
Health	22,892	19,014	(3,878)
Gardaí	8,342	7,022	(1,320)
Prison Officers	1,246	1,044	(202)
Defence Forces	8,574	7,193	(1,381)
Teachers	28,167	23,712	(4,455)
VECs & ITs	6,009	5,054	(955)
Universities	3,685	2,861	(824)
State Sponsored Bodies	5,842	5,223	(619)
Constitutional, Ministerial & Judicial Office-holders	785	680	(105)
Local Authorities (Estimate)	7,499	6,323	(1,176)
Total Public Service	**106,559**	**89,447**	**(17,112)**
One-third of NPRF	5,381	5,381	0
Liability net of NPRF	**101,178**	**84,066**	**(17,112)**

D.5 The impact of using CPSP figures for the gross new entrant contribution rates for males is shown in Figure D.3. The gross cost is shown here for consistency with the figures shown in the CPSP report.

Figure D.3 New Entrant Contribution Rates for Males with CPSP Approach

Category of Employment	Total Cost Base Case	Total Cost CPSP Approach to Discount Rate	Actual CPSP Result
Civil Service			
Established	24.6%	18%	16%
Non-established	9.5%	7%	8%
Education			
Primary teacher	20.5%	15%	17%
Post-Primary teacher	23.1%	17%	16%
Security			
Garda	29.6%	22%	25%
Prison officer	27.8%	21%	21%
Commissioned officer	41.2%	30%	30%
Enlisted personnel	22.4%	16%	20%
Health			
Consultant	25.9%	20%	21%
Nurse (general)	17.7%	13%	12%
State Sponsored Bodies			
Established officer	22.7%	17%	16%

D.6 In addition to the discount rate approach, there are several other differences between the approach used in this report and the CPSP report, which are described in more detail below.

D.7 Results would be expected to be lower for this report as an assumed retirement age of 65 was used due to the change in public service pensions for new entrants from 2004, rather than an assumed retirement age of 60 which would have been used for the CPSP. This report also assumes a higher rate of increase in the State Pension.

D.8 However the impact of the above is offset by higher entry ages, higher salaries and lower mortality used in this report compared with the CPSP. An analysis showing the reasons for the difference in the gross new entrant contribution rates for a male civil servant between both reports is shown in Figure D.4.

Figure D.4 Comparison of Gross New Entrant Contribution Rate to the CPSP Report

Step	Description	Total Cost	Difference
	This report	**24.6%**	
1	Discount rate changes	18.4%	-6.2%
2	Change in rate of State Pension increase	19.7%	+1.3%
3	Change in retirement age (65 to 60)	23.7%	+4.0%
4	Change in entry age (29 to 22)	20.7%	-3.0%
5	Lower salaries & higher mortality	16.0%	-4.7%
	CPSP report	**16.0%**	

Step 1 shows the impact of the discount rate changes and factors in the different real discount rate and general salary inflation as shown in Figure D.1.

Step 2 shows the impact of changing the rate of increase in the State Pension. In this report it is assumed that pension increases are the same as salary increases. However, the CPSP report assumed that State Pension increases would be 1% above price inflation, which increases the pension cost.

Step 3 shows the impact of a lower retirement age which increases the cost, as the pension is paid sooner and for longer.

Step 4 shows the impact of the lower entry age used in the CPSP report, which means that service was longer and a higher pension was accrued. However the pension was accrued over a longer period of time so the notional contribution rate per year is lower.

Step 5 shows the impact of the lower salaries and higher mortality rates that were assumed for the CPSP report which reduces the cost.

Comparison with Benchmarking Report

D.9 The pension consultants compared the new entrant contribution rates against those produced in the 2007 Report of the Public Service Benchmarking Body. The main differences are discussed below.

D.10 The economic assumptions used in this report are based on the methodology outlined in the accounting standard IPSAS 25 which is a different to the approach used in the Benchmarking Report. This methodology derives the discount rate before and after retirement from the Government bond yield.

D.11 The Benchmarking Body report was based on an approach that would be used by a private sector pension fund. Under this approach the discount rate was based on the expected real yield of appropriate pension fund assets pre and post-retirement.

D.12 The net effect of this different methodology is that the assumptions for the pre-retirement discount rate, inflation, general salary increases and increases in the State pension are lower for this report than the Benchmarking Report. The impact of each of these differences would be to increase the cost.

D.13 However, the assumption for the post-retirement discount rate in this report is higher than the Benchmarking Report which reduces the cost of the annuity and therefore reduces the overall cost of providing the pension.

D.14 The combined impact of these changes is a somewhat reduced cost compared with the Benchmarking Body report. A comparison of the economic assumptions used for both reports is shown in Figure D.5.

Figure D.5 Comparison of Economic Assumptions

	Assumptions in this Report	Assumptions in Benchmarking Body Report
Pre-retirement Real Discount Rate	3.30%	4.00%
Post-retirement Real Interest Rate	3.30%	2.00%
Inflation	1.65%	2.25%
General Salary Increases	3.40%	4.25%
Increases in State Pension	3.40%	4.25%

D.15 In addition, the following differences pertain

- The mortality rates assumed in this report are lower which leads to an increase in life expectancy and therefore increases the cost.
- Differences in the average assumed starting ages cause differences in the cost. For example if a higher starting age is used then this reduces the years' service and increases the cost.
- Differences in the salaries and salary scale assumed cause differences in the cost e.g. if the difference between the starting and retiring salary is higher then this increases the cost.
- The turnover rates assumed in this report are higher which reduces the cost slightly.
- An allowance for the new PRD has been included in this report.

D.16 A breakdown of the reasons for the difference for a new entrant contribution rate for a male civil servant between both reports is shown in Figure D.6.

Figure D.6 Comparison of Net Cost[a] to the Benchmarking Body Report (Male Civil Servant)

Step	Description	Net Cost	Difference
	Benchmarking Body Report	**21.3%**	
1	Economic assumption changes	17.0%	-4.3%
2	Higher entry age	18.1%	+1.1%
3	Higher salaries	19.1%	+1.0%
4	Higher turnover	18.6%	-0.5%
5	Higher future mortality improvements	20.0%	+1.4%
6	PRD	11.9%	-8.1%
	This report	**11.9%**	

Note:

a The Cost is net of employee contributions.

D.17 The following shows the steps in reconciling the difference for a new entrant contribution rate for a male civil servant between the Benchmarking Body Report and this report.

- **Step 1** shows that differences in the economic assumptions cause this figure to drop by 4.3% to 17%. The discount rate is lower which results in a higher cost. However, this is offset by lower assumed future pension increases and a higher annuity interest rate, which give rise to a much lower cost.
- **Step 2** shows that the impact of different starting ages increases the cost by 1.1% to 18.1%. In the Benchmarking Body report a starting age of 26 was assumed for civil servants. This was the

median age for civil servants starting in 2003 and 2004. The data received for this report indicated that the median starting age for civil servants who commenced working in 2007 and 2008 was 29 years. This reduces the service earned which means a lower pension is accrued. However the pension is accrued over a shorter period of time so the notional contribution rate per year is higher.

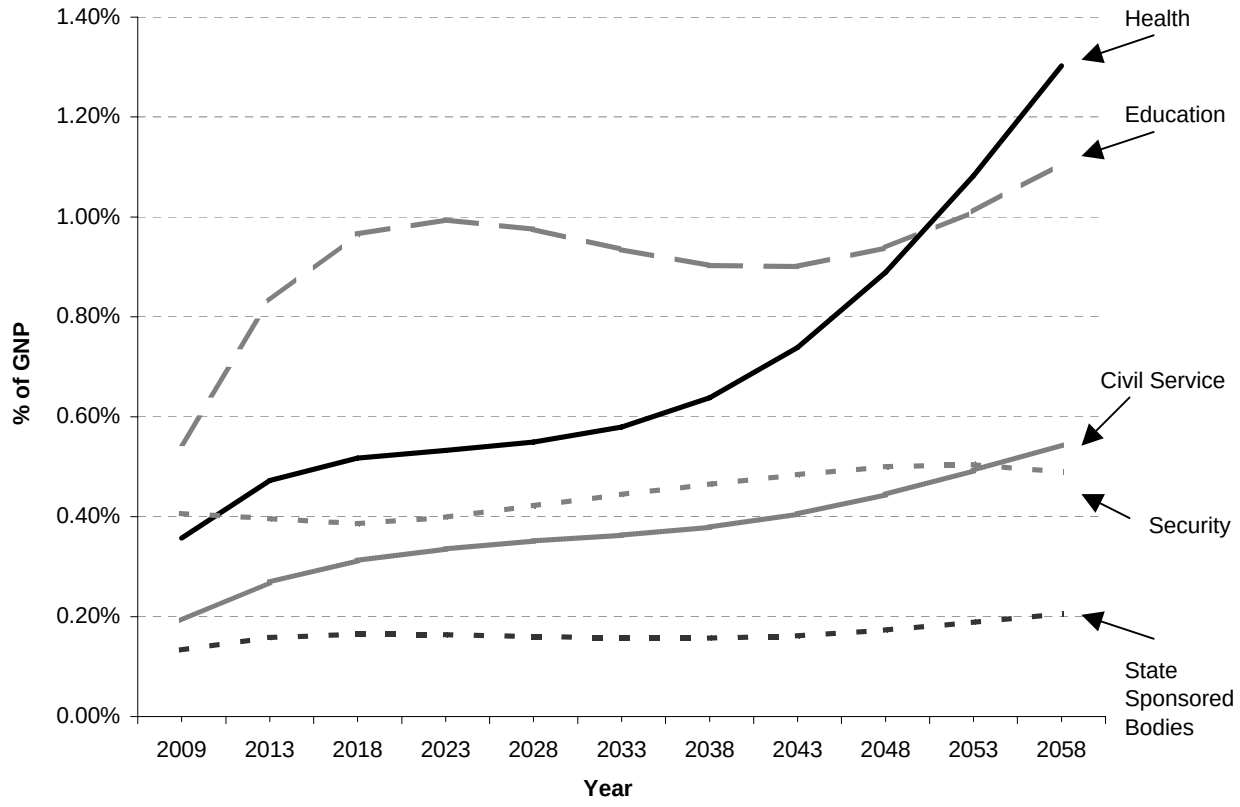
- **Step 3** shows that salary levels have increased since the Benchmarking Body report which increases the cost by 1.0% to 19.1%. The starting salary assumed has increased from €25,000 to €26,000 and the retirement salary assumed has increased from €61,000 to €68,000. The increased spread between starting and retirement salaries increases the cost, since the pension is based on salary at retirement and contributions are based on salary throughout. However, the State Pension is at a higher level which reduces the cost and offsets the impact of the higher salaries to some extent.
- **Step 4** shows the impact of the higher turnover rates which means that less people accrue the full pension which reduces the cost by 0.5% to 18.6%.
- **Step 5** shows the impact of higher future mortality improvements. The most recent CSO mortality table and population projections were used for this report. The impact of higher future mortality improvements is to increase the cost of the pension by 1.4% to 20%, since the pension is expected to be paid for longer.
- **Step 6** shows the impact of the PRD. The impact of the PRD for a male civil servant is to reduce the cost by 8.1%.

Appendix E Future Pension Cash Flows

E.1 Future gross benefit pension cash flows and future contributions, including the PRD, for each individual public service sector are shown in the following diagrams in this Appendix. They are expressed as a percentage of GNP over the next 50 years.

E.2 The gross cash outflow for each sector as a percentage of GNP is shown in Figure E.1.

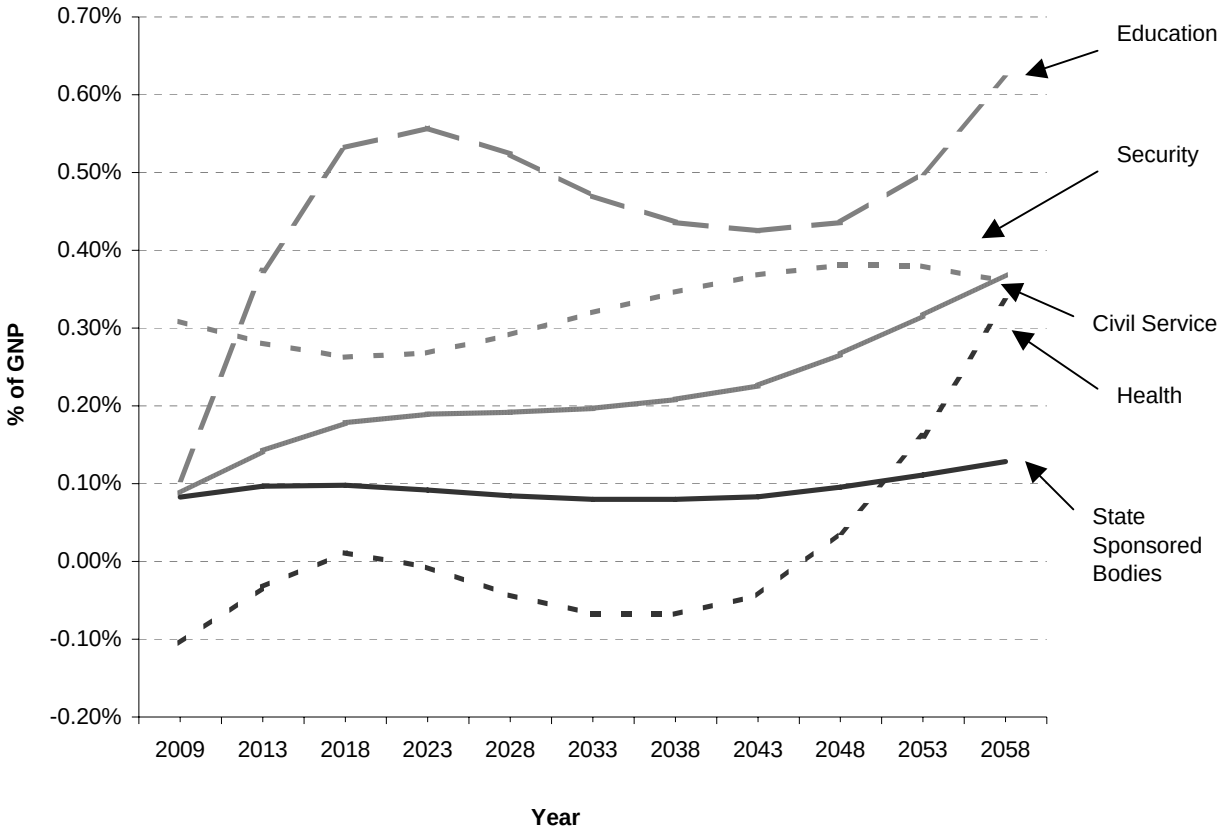
Figure E.1 Gross Cash Outflow as a Percentage of GNP by Sector



E.3 The growth in gross benefit cash flow as a percentage of GNP is higher for the Health and Education sectors than for other sectors. The number of pensioners in these sectors is projected to increase faster than for other sectors.

E.4 The net benefit cash flow for each sector as a percentage of GNP is shown in Figure E.2.

Figure E.2 Net Cash Outflow as a percentage of GNP by Sector



E.5 The impact of the contributions income and PRD income is more pronounced for Health than for other Sectors. This is due to the high number of currently serving staff and the expected continued growth in serving staff, as a result of the ageing population and an increase in demand for health services.

E.6 The net benefit cash flow for the civil service is projected to rise from 0.9% of GNP in 2009 to 0.37% of GNP by 2058 as shown in Figure E.3.

Figure E.3 Benefits and Contributions as a Percentage of GNP - Civil Service

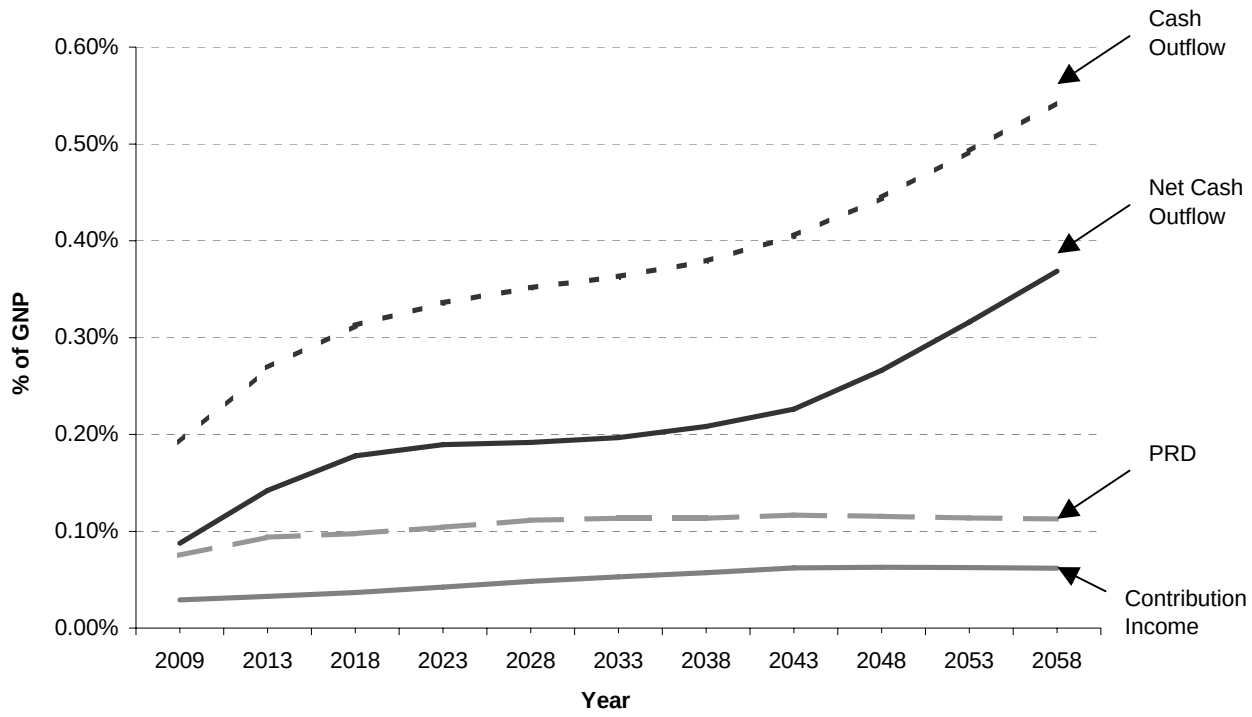
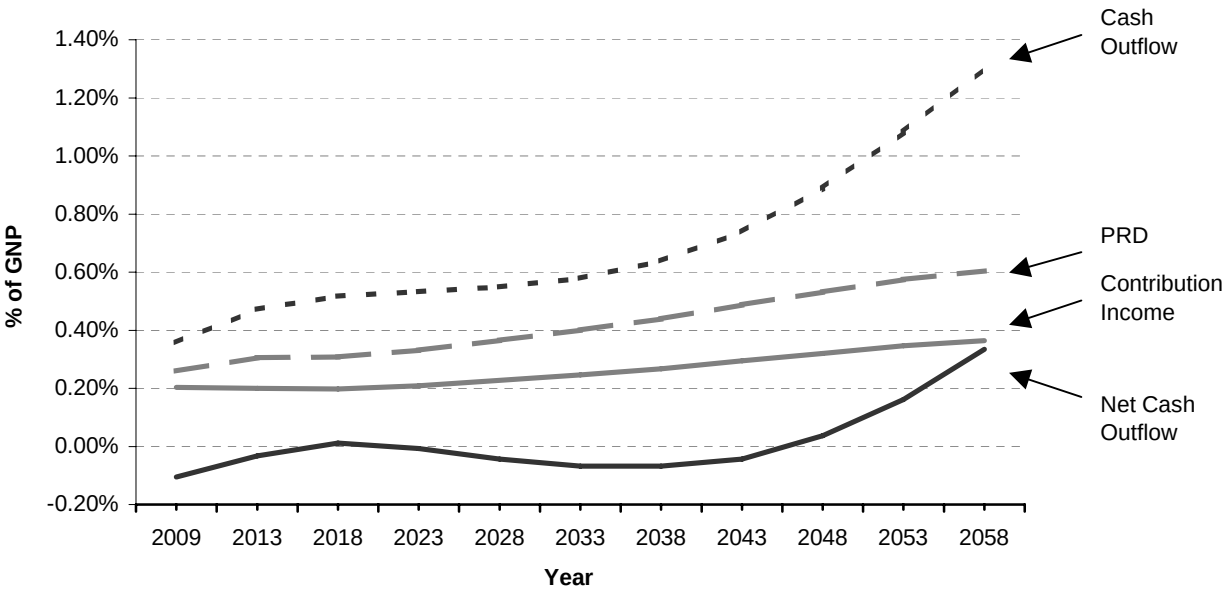
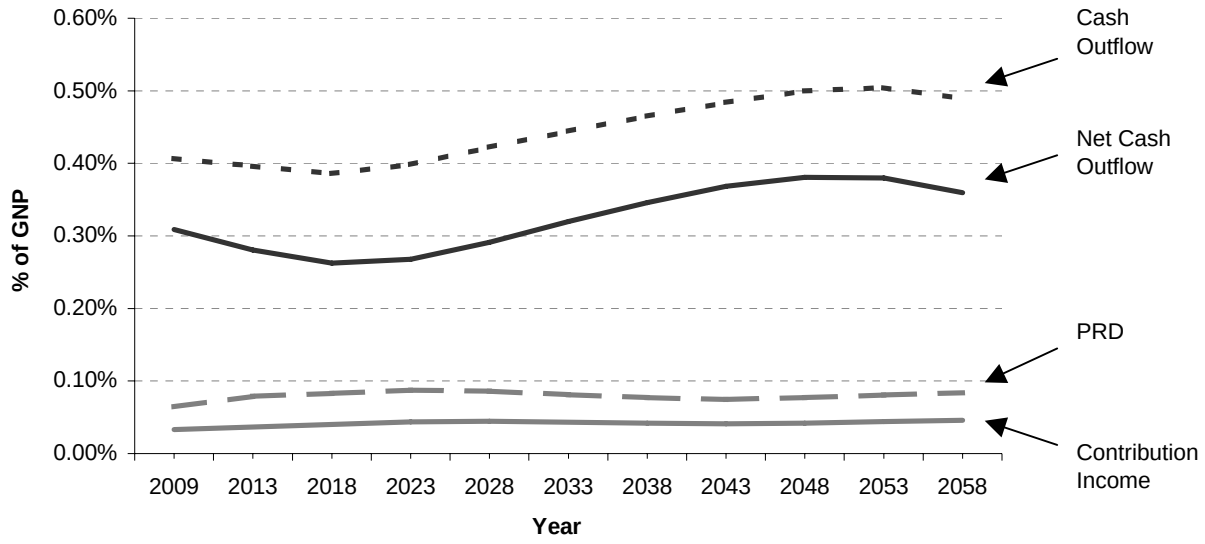


Figure E.4 Benefits and Contributions as a Percentage of GNP - Health



E.7 The net benefit cash flow for the Health Sector is projected to rise from –0.10% of GNP in 2009 to 0.33% in 2058 as shown in E.4. The impact of the PRD is more pronounced for Health than for other sectors. This is due to the high number of currently serving staff. Initially the net benefit cash flow is negative.

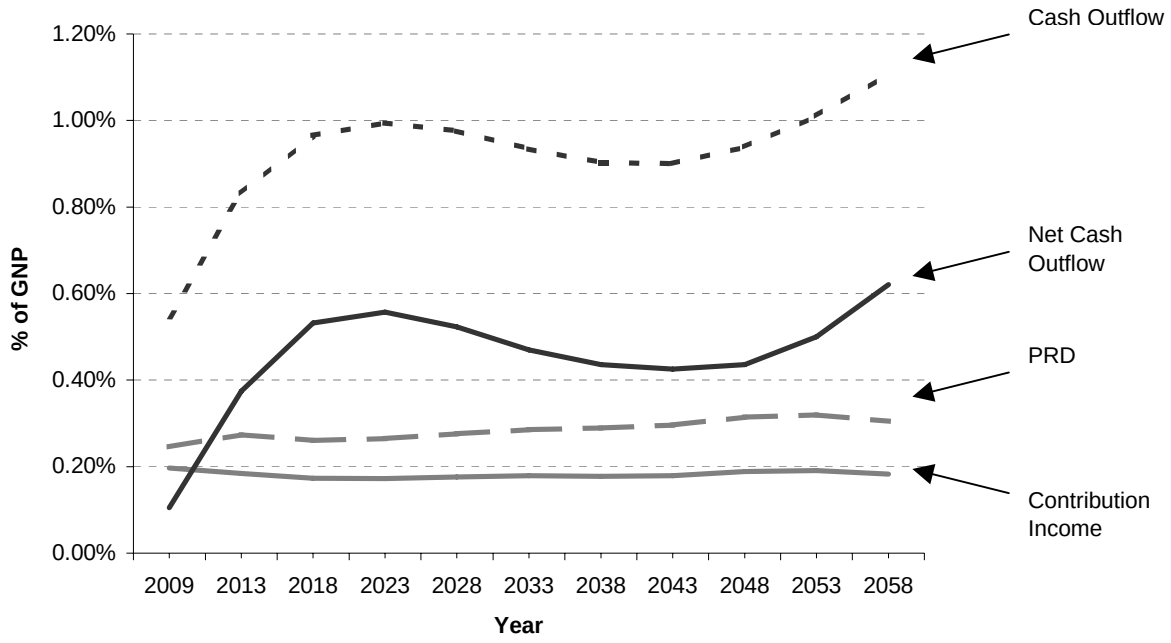
Figure E.5 Benefits and Contributions as a Percentage of GNP - Security



E.8 The net benefit cash flow for the Security Sector is projected to rise from 0.31% of GNP in 2009 to 0.36% of GNP in 2058 as shown in Figure E.5.

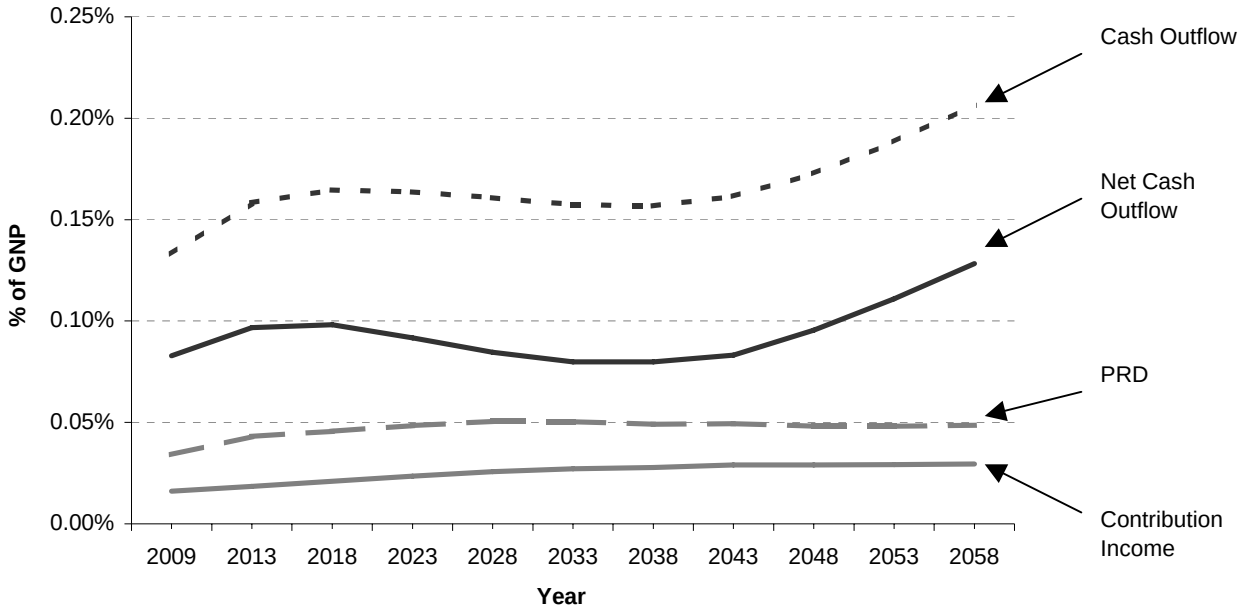
E.9 The net benefit cash flow for the Education Sector are projected to rise from 0.10% of GNP in 2009 to 0.62% of GNP by 2058 as shown in Figure E.6.

Figure E.6 Benefits and Contributions as a Percentage of GNP - Education



E.10 The net benefit cash flow for State Sponsored Bodies is projected to rise from 0.08% of GNP in 2009 to 0.13% of GNP by 2058 as seen in Figure E.7.

Figure E.7 Benefits and Contributions as a Percentage of GNP – State Sponsored Bodies



Appendix F Main Statutory Provisions covering Public Service Pension Schemes

F.1 The Superannuation and Pensions Act, 1976 enabled the Minister for Finance to make pension schemes in respect of the public service, to amend or repeal certain provisions of the Superannuation Acts, 1834 to 1963, and certain other enactments, and to make provision for related pension matters. The Widows' and Children's Contributory Pension Scheme became the Spouses' and Children's Contributory Pension scheme when it was extended to include all female civil servants appointed on or after 1 June 1981.

F.2 Prison Officers are also covered by the Civil Service Pension Scheme. The Superannuation (Prison Officers) Act, 1919 made certain changes to pension terms by lowering the retirement age and by doubling the service credit for service in excess of 20 years.

F.3 The Minister for the Environment and Local Government has responsibility for the Local Government Superannuation Scheme (LGSS) which applies to staff not just of the local authorities but also for certain members within the Health Service Executive, Vocational Health Committees, Institutes of Technology and certain local government and health corporate bodies. The superannuation provisions are set out in schemes and regulations made under the Local Government (Superannuation) Act, 1980 and the Local Government (Superannuation) (Consolidation) Scheme, 1998 which consolidates and updates the provisions of all earlier Acts and schemes.

F.4 The vast majority of health service staff are covered under the LGSS.[28] The Voluntary Hospitals (Officers) Superannuation Scheme, 1969 as amended covers such hospitals as the Mater, St. Vincent's and Crumlin, while the Nominated Health Agencies Superannuation Spouses' and Children's Contributory Pension Scheme, 1986 as amended covers various health agencies. Under Section 23 of the Health Act, 2004, the HSE is required to establish a new scheme in respect of new staff employed from 1 January 2005. The proposed new scheme is under discussion between the Minister for Health and Children and the Department of Finance and all HSE staff will be deemed to be members of the new scheme with effect from 1 January 2005.

F.5 The National School Teachers' Superannuation Scheme, 1934 as amended, the Secondary Teachers' Superannuation Scheme, 1929 as amended and the Vocational Teachers' Superannuation Scheme, 1998 empower the Minister for Education and Science to make three separate pension schemes in respect of teachers in the Educational Sector.

F.6 The Defence Forces (Pensions) Acts, 1932 to 1975 empower the Minister for Defence, with the consent of the Minister for Finance, to make pension schemes in respect of members of the Permanent Defence Forces. The terms and conditions are contained in the Defence Forces (Pensions) Schemes, 1937 to 1994.

F.7 The Garda Síochána (Temporary Provisions) Act, 1923 and the Garda Síochána Act, 1924 enabled the Minister for Justice, with the sanction of the Minister for Finance, to make pension schemes for members of the Garda Síochána, their widows, children and dependants. Pension schemes applicable to members of the Garda Síochána are set out in the Garda Síochána Pensions Orders, 1925 to 1981 and agreements made under the Garda Síochána Conciliation and Arbitration Scheme.

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28 The Health (Miscellaneous Provisions) Act 2009 is to provide, inter alia, for the exercise of certain functions relating to superannuation by the Minister for Health and Children. It provides for ministerial responsibility for the Local Government Superannuation Scheme for the Health sector to transfer from the Minister for the Environment, Heritage and Local Government to the Minister for Health and Children.

Glossary

Accrual Accounting

Method of accounting which records expenditure as it is incurred rather than when it is paid and income as it is earned rather than when it is received.

Accrued Pension Liabilities

The present value of the expected future superannuation payments to serving public service employees and their dependents in respect of service at the valuation date along with the full liability for all future payments to current pensioners and their dependents as at that date.

Actuarial Assumptions

These relate to assumptions such as mortality levels, life expectancy, discount rate, salary increases, GNP growth projections, etc. which an actuary employs in carrying out an actuarial valuation or other actuarial calculation.

Actuarial Valuation/Review

This generally entails an assessment by an actuary into the ability of a pension scheme to meet its future pension obligations on the basis of actuarial assumptions. In unfunded public service schemes, an actuarial review focuses primarily on cash flow projections i.e. an estimate of future pension expenditure and contribution income.

Appropriation Account

An end of year account of a Department's spending of moneys voted by the Dáil which compares the estimated expenditure with actual payments made and receipts brought to account, and explains any substantial differences.

Appropriations-in-Aid

Departmental receipts which, with the agreement of the Dáil, may be retained to defray the expenses of the Vote rather than paid directly into the Exchequer.

Constant Price Terms

Future pension expenditure and contribution income projections in this Report have been prepared in constant (2008) prices. This means that there is no allowance for general price inflation after 2008.

Defined Benefit Scheme

Pension benefits payable are based on pensionable service and the level of final salary at the date of retirement.

Defined Contribution Scheme

The employer, and usually the employee, make a pre-determined contribution into the scheme and the pension at retirement is determined by the contributions made and the investment return on the contributions.

Discount Rate

For funded pension schemes, the discount rate reflects the assumed future rate of investment return on the pension scheme assets used to fund the pension liabilities. The discount rate used in this Report for unfunded schemes is a discount rate based on market yields at the reporting date on Government Bonds to provide the best approximation of the time value of money.

Fast Accrual Terms

For some categories of employees in the public service enhanced pension terms apply such as a doubling of service after 20 years for pension purposes, effectively allowing a full pension to be obtained after 30 years' service rather than the standard 40 years.

Funded Scheme

The provision in advance for future pension liabilities by setting aside funds for investment to finance the payment of pension benefits when they fall due.

Gross National Product (GNP)

Gross National Product (GNP) is the total value of all goods and services produced in an economy in a given time period which accrues to the residents of a country.

Gross National Income (GNI)

Gross National Income (GNI) is conceptually equal to Gross National Product (GNP) plus EU subsidies and less EU taxes.

Integration

The system of taking into account all or part of the benefits payable by the State under the Social Insurance system. The public service pension awarded on retirement is reduced by the State pension amount before calculating pension benefits.

Life Expectancy

The average period that a person at a specific age and at a specific point in time may be expected to live derived from statistics for the population at large.

Model Scheme

Issued by the Department of Finance as a basis for drawing up pension schemes and scheme amendments by public service bodies and State Sponsored bodies so as to conform with the Civil Service Pension Scheme.

New Entrant Contribution Rate

In the context of unfunded public service schemes, the percentage of salary plus pensionable allowances which it is estimated (based on actuarial assumptions) would be required to fund the existing pension benefits for typical new entrants to the public service.

Pay Parity

The principle generally followed in public service pension schemes where pensions are increased in line with the pay of serving public servants.

Pay-as-you-go / Unfunded Scheme

The method of financing unfunded pension schemes where no advance funding of benefits is made with pensions being met from current revenue in the year of payment.

Pensionable Remuneration

The aggregate of pensionable salary and pensionable allowances.

Pensionable Service

The period of service which is taken into account for the purpose of calculating pension benefits. In the public service, pensionable service may include service purchased under the purchase scheme, notional added years, and service transferred from other public service employments, etc.

Preserved Benefits

Benefits payable at a future date to or in respect of a member who has left the scheme prior to normal retirement age. Accrued benefits based on pensionable service and pensionable remuneration at date of leaving are frozen and can be claimed on reaching retirement age.

Present Value

This is the value on a given date of a future payment or series of future payments, discounted to reflect the time value of money and other factors such as investment risk.

Vote

A coherent area of government expenditure which is the responsibility of a single Government Department or Office which is in turn accountable to the Dáil for the expenditure shown.