



Society of Actuaries
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Analysis of Fiscal Incentives for Retirement Savings – models and redistributive effects



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1. Executive Summary

"While achieving neutrality between different forms of saving and investment is our general aim, there may be a good case for treating pension saving more generously. Behavioural evidence suggests that people tend not always to make decisions in far-sighted and rational ways. Individuals with inadequate retirement savings are also more likely to draw on costly state benefit programmes in retirement. Encouraging them to save in a pension when young makes this less likely."

The Mirrlees Review; Conclusions and Recommendations for Reform, Institute for Fiscal Studies 2001 page 5

Background & Introduction

This report presents an analysis of fiscal incentives for retirement savings – models and redistributive effects – in Ireland and comparison with other countries who have well established second pillar pension systems. The report was commissioned by the Society of Actuaries in Ireland (“the Society”) and funded by the Irish Fiscal Policy Research Centre (“Publicpolicy.ie”). The work has been reviewed by a Steering Group drawn from the two bodies.

Methodology

The comparison and evaluation of fiscal incentives for retirement saving are complex given the many factors involved and the long time horizon over which they operate. In an endeavour to bring forward a level of ease in comparing the effects of different fiscal levers on the incentive for pension saving the results are presented by way of a Fiscal Incentive Index (“FII”), calculated as the present value of tax relief received on employee and employer contributions divided by the present value of tax paid on the pension benefits in retirement

The Fiscal Incentive Index (“FII”) is a comparative ratio and not an absolute index. Effectively, a FII measure of 1 indicates that the present value of fiscal incentive provided by the state is equal to the present value of the level of tax paid on the arrangement.

A FII measure greater than 1 indicates a fiscal incentive for an employee to partake in the arrangement being investigated i.e. the present value of the tax relief obtained from the state is greater than the present value of the tax paid in the arrangement.

A FII measure less than 1 shows that there is no real fiscal incentive to partake in the arrangement being studied. In this case an employee’s involvement in such an arrangement could be interpreted as being for other reasons, if involvement is on a voluntary basis.

The FII ratios are sensitive to the underlying assumptions which are detailed in the report. As such it is a comparative measure and is more correctly to be seen as a means to identify trends or patterns. As such care needs to be taken in comparing different scenarios.

We have calculated the FII ratios for notional employees who are assumed to commence pension saving under Pillar II at age 30, 40 or 50, with a contribution rate, in the Irish baseline, of 15% of salary (5% from the employee and 10% from their employer), across four initial salary levels - €30,000, €50,000, €75,000 and €150,000.

Where we refer to Pillar II in this report, in relation to Ireland we mean the funded occupational pension schemes. Similarly, Pillar I refers to the State Pension (Contributory) and the related PRSI contributions.

Overview of the key findings

Any analysis of the fiscal incentives to participate in retirement saving programmes requires making long term assumptions. Based on the work set out in this report, the key findings are:

- The overall Irish pension system is progressive
 - Pillar I is both progressive and redistributive
 - Pillar II is progressive with a fiscal incentive for most employees
- Proposed changes could undermine the existing incentives for many employees to participate in Pillar II arrangements
- Compared to other countries, the Irish system is more progressive
- In those countries with mandatory Pillar II participation, a strong fiscal incentive remains

Redistributive Effects of total pension system (Pillar I & Pillar II pension regime combined)

1. The combined Pillar I and Pillar II FII ratios are as follows:

Salary	Fiscal Incentive Index ("FII")		
	Commencement Age 30	Commencement Age 40	Commencement Age 50
30,000	1.0	1.6	2.9
50,000	0.7	1.0	1.7
75,000	0.5	0.7	1.2
150,000	0.3	0.4	0.7

2. The FII measure increases as age increases and as salaries decrease – illustrating both the progressive nature of the Irish pension systems and the greater incentive to save as an employee gets closer to retirement age. However the resultant FII measures are below 1.0 for most employees modelled.
3. The low FII measures are partly due to the interaction of uncapped PRSI contributions with the flat state pension benefits in retirement. A further contributory reason is that, as modelled, the Irish Pillar I system is redistributive from the working to the non-working population.

Relative attractiveness of the current Irish Pillar II pension regime

4. Participation in Pillar I is mandatory, but Pillar II is largely voluntary. The standalone FII ratios for Pillar II are as follows:

Salary	Year 1 Pillar II contributions	Fiscal Incentive Index ("FII")		
		Commencement Age 30	Commencement Age 40	Commencement Age 50
30,000	4,500	2.8	4.9	16.2
50,000	7,500	1.9	3.2	7.0
75,000	11,250	1.2	2.4	4.4
150,000	22,500	0.5	1.0	2.4

5. On the surface, there are strong fiscal incentives to all tax payers aged 40 years and over to partake in a Pillar II pension arrangement. At age 30, incentives also exist for employees earning €30,000, €50,000 and €75,000, but this is not the case at the highest pay level.
6. The principal reasons for FII measures for Pillar II being above 1.0 (i.e. the existence of a fiscal incentive) are the combination of employees moving to a lower tax band during retirement and the availability of a tax free lump sum at retirement. Where an employee elects not to take a tax free lump sum at retirement the fiscal incentive ratios decrease for all ages and pay levels.
7. The employer role is significant in overall FII ratio outcome. Employer contributions are tax relieved at the corporation tax rate rather than the employee's marginal income tax rate. If employees were sole contributors to a Pillar II pension arrangement, the FII ratio would be higher across all ages and pay levels as a result of the higher tax relief available on personal contributions compared to employer contributions.

Analysis on various changes to the current pension regime – Pillar II only

8. If tax relief on contributions is reduced to basic rate tax relief or composite rate of 33%, a reduction in the measure of fiscal incentive is seen. For our base employees at age 30, all those on salary levels of €30,000, €50,000 and €75,000 continue to have a FII measure above 1.0 – albeit reduced in all cases.
9. If tax relief on contributions is reduced to 20%, a much greater reduction in the measure of fiscal incentive is seen. For our base employees at age 30, all those on salary levels of €30,000 and €50,000 continue to have a FII measure above 1.0, but the employee on €75,000 now has a FII ratio below 1.0
10. There is currently a cap on the notional lifetime value of pension benefits known as the Standard Fund Threshold (SFT). Were the SFT to be reduced from its current level of €2.3m to €1.5m, the FII measure for those on €75,000 and €150,000 at age 30 would be below 1.0.

Comparison with selected other Countries

11. The Pillar II pension regime in each of the countries operates differently to the Irish Pillar II pension regime; some to a greater extent than others. Some of the key differences are captured in the following table:

Country	Australia	Canada	Netherlands	Singapore	Sweden	UK	Ireland
Core Pillar II Participation	Mandatory / Voluntary	Voluntary	Mandatory ¹	Mandatory / Voluntary ²	Mandatory ³	Voluntary, but auto-enrolment	Voluntary
Lump sum on retirement	Yes (Up to 100%)	No	No	Yes (50% of fund)	No	Yes (25% of fund)	Yes (25% of fund, or salary/service related cap)
Corporation tax	28.0%	26.5%	25.0%	17.0%	26.3%	23.0%	12.5%

12. Like Ireland, the selected countries, with the exception of Australia, apply the “Exempt, Exempt, Taxed” taxation system for their Pillar II pension regime. However, the devil is in the details as even in the case of Ireland, the Exempt treatment during the pension fund accumulation period has been undermined by the imposition of a temporary pension levy⁴.

13. The FII ratios that we have calculated for each of the countries are not directly comparable, as a number of simplifying assumptions were made in order to enable some level of comparison. Details on the methodology and assumptions made are covered later in this report. On a somewhat simplified ‘apples to oranges’ approach, the FII ratios that emerge for a baseline 30 year old are as follows:

Salary	Australia	Canada	Netherlands	Singapore	Sweden	United Kingdom	Ireland
30,000	2.6	1.6	1.9	1.6	0.9	1.5	2.8
50,000	2.7	1.8	1.8	1.8	1.1	1.9	1.9
75,000	2.8	1.9	1.4	1.9	1.2	1.9	1.2
150,000	2.7	1.3	0.9	1.3	0.9	2.0	0.5

14. From the comparison of the simplified FII ratios across the countries studied, it can be concluded that the Irish system is not unduly generous – it is also more progressive than most. Furthermore,

¹ In the Netherlands, the majority of pillar II occupational pension schemes fall under industry-wide arrangements and as a result we have determined them to be mandatory in nature.

² This is based on the Supplementary Retirement Scheme (SRS) which complements the Central Provident Fund (CPF). Contributions to the SRS are voluntary whilst the contributions to the CPF are mandatory.

³ Most of the second pillar pensions in Sweden are agreed between trade unions and employers on a nationwide standard basis and hence we have determined them to be mandatory in nature.

⁴ It is a levy introduced by the Government which is applied to Irish pension funds where individuals are resident in Ireland (excluding AMRF/ARF’s and certain annuities in payment) and is intended to be a temporary levy which will be applied for 4 years from 2011 - 2014. The levy of 0.6% will be applied to the market value of assets under management in pension plans approved under Irish tax legislation including occupational pension schemes, Retirement Annuity Contracts and Personal Retirement Savings Accounts.

even where a mandatory pension system exists, the FII ratio is above 1.0 in most cases, indicating the retention of a strong fiscal incentive within the mandatory system.

2. Introduction & background

2.1 Introduction

The Society of Actuaries in Ireland (“the Society”) has commissioned this study and was funded by the Irish Fiscal Policy Research Centre (“Publicpolicy.ie”).

This report presents an analysis of fiscal incentives for retirement savings – models and redistributive effects – in Ireland and comparison with other countries who have well established second pillar pension systems. As part of this review, a number of possible changes to the Irish pension regime are examined such as the tax relief available on contributions to pension plans and the cap on benefits qualifying for fiscal relief.

The work has been reviewed by a Steering Group drawn from the two bodies.

2.2 Scope of the project

The scope of the project was defined in the request for proposal document prepared by the Society in May 2012. The requirements were to:

- (i) Summarise the current fiscal incentives for “second pillar pensions” in Ireland;
- (ii) Analyse the relative attractiveness of these incentives to individuals in different tax brackets;
- (iii) Analyse the redistributive effects of the current fiscal regime for pensions (a) ignoring “first pillar” (State-provided) pensions and (b) allowing for “first pillar” pensions;
- (iv) Consider how the above analyses would vary in the event that (a) tax relief on members’ contributions to pension plans was reduced to basic rate tax relief or a composite rate of 33%, (b) the cap on benefits qualifying for fiscal reliefs was reduced to €60,000 per annum or a capital amount of for example €1.5m or (c) a combination of both (a) and (b);
- (v) Provide a clear analysis of how Ireland compares with other (European / worldwide) well established second pillar pension systems, in terms of the key characteristics of (a) the current fiscal incentives model in Ireland and (b) the possible future models identified at (iv) above.

For the purposes of this project, public sector pension schemes were not included.

Please note that the issues of affordability and adequacy of occupational pension schemes do not fall under the scope of this project and hence are not considered in this report.

2.3 Structure of the report

The remainder of this report is structured as follows:

- Section 3 summarises the current Irish pension regime and the fiscal incentives for “second pillar pensions” in Ireland
- Section 4 outlines the methodology and assumptions used in conducting the analyses
- Section 5 analyses the relative incentive levels under the current Irish fiscal regime

- Section 6 investigates the impact of certain changes suggested to the current Irish regime
- Section 7 provides an overview of the fiscal incentives for pension saving in selected other countries and assesses their relative attractiveness
- The Appendix contains a brief summary of the New Zealand pension system for information purposes.

3. Current Irish pension regime

3.1 Current Irish pension system

The pensions system in Ireland is comprised of 3 main pillars which can be defined as follows:

1. Pillar I: Public mandatory state-run social welfare system (“first pillar pension”)
2. Pillar II: Voluntary private pension system (“second pillar pension”)
3. Pillar III: Voluntary non-pension sources of retirement income (“third pillar pension”)

3.1.1 Current “first pillar pension” in Ireland

The first pillar pension in Ireland is a public mandatory state-run social welfare system. It is a pay-as-you-go (PAYG) scheme funded by mandatory PRSI (pay related social insurance) contributions from employers, the self-employed and employees, and by a contribution from the Exchequer when the cost of the benefits exceeds the contribution income.

The State Pension (Contributory) is paid to those over the age of 66 years who have made a certain level of social insurance contributions. The age at which it is payable is increasing to 67 from 2021 and 68 from 2028.

The rate of payment to a single person who has meets the qualification requirements for the full State Pension (Contributory), is currently €230.30 per week.

Due to the mandatory nature of Pillar I participation, there are no explicit fiscal incentives. Indeed the tax system in Ireland is somewhat untypical when compared to some of the other countries studied in so far as an employee’s mandatory PRSI contributions are included in his/her income tax base. In most other countries, the mandatory social insurance contributions are deducted prior to an employee’s income tax liability being assessed.

For the purposes of this study, we have treated the Universal Social Charge (USC) as an additional income tax as it does not give rise to an entitlement to a state pension benefit.

3.1.2 Current “second pillar pension” in Ireland

The second pillar pension in Ireland is a voluntary private pension system. Pensions can be provided through a person’s employment or directly through financial institutions acting as pension providers. There are 3 main stages to the “life” of a pension arrangement:

- Contribution stage – contributions paid into the arrangement
- Accumulation stage – investment income and capital growth earned on the contributions paid in
- Retirement income stage – benefits payable to the individual upon and during retirement

Tax relief during the contribution stage

Tax relief on contributions paid into pension arrangements is available (subject to limits).

Employee contributions are relieved at the employee's marginal income tax rate.

For an employee, the maximum tax relievable contribution is subject to a cap as a percentage of remuneration:

Age	Limit as % of remuneration
Under 30	15%
30-39	20%
40-49	25%
50-54	30%
55-59	35%
60 or over	40%

The remuneration level that can be taken into account is capped at €115,000 per annum for 2012 with the result that the maximum annual tax relieved employee contribution is €46,000 (i.e. €115,000 x 40% for an employee aged 60 or over who has remuneration in excess of €115,000).

Employer contributions on behalf of employees are specifically exempted from being charged as remuneration of the employees concerned in the form of benefits-in-kind unless they are being made to a Personal Retirement Savings Account, and are offset in calculating the employer's corporation tax liability.

Tax relief during the accumulation stage

Pension fund investments are generally exempt from tax on their capital gains and income. However, there is still some external tax leakage for pension fund investors as a result of dividend withholding taxes that are applied in some jurisdictions.

The principle of tax relief during the accumulation phase has been undermined in recent years by the temporary pension levy that taxes the entire accumulated fund – not just the growth in the fund as is the case for Australia (see later). For the purposes of our analysis, we have ignored the pension levy in the expectation that it is truly temporary in nature.

Tax relief during the retirement income stage

There is a complex set of rules in determining the maximum pension benefits that may be payable on retirement from a pension fund that take into account earnings history, age and length of service.

There is also an upper limit of €2.3m on the assessed value of an individual's pension fund, known as the Standard Fund Threshold (SFT). The excess of the fund is liable to tax at 41% at the point of retirement and is further taxed when drawn as pension income.

Pension income benefits on retirement are generally taxable at the individual's marginal income tax rate. However there is an exception for a benefit taken as a lump sum.

Pension lump sums within an individual's allowable limit are generally tax free on retirement subject to a cap of €200,000. Any allowable lump sum in excess of €200,000 is taxed at 20% for the next €375,000 and thereafter at the marginal rate of income tax.

3.1.3 Current “third pillar pensions” in Ireland

The third pillar pension in Ireland is comprised of the voluntary non-pension sources of income in retirement. It would typically include private savings, private investments and income from other sources.

We considered AVCs, PRSAs and other similar pension vehicles as being analogous to and broadly included in our Pillar II definition. However please note that we have not explicitly analysed them in our model.

Other than capital gains tax of 30% that is levied on an individual's annual chargeable gains, net of allowable losses, above €1,270, there are few if any fiscal incentives that are targeted at the wider working population.

Therefore the consideration of third pillar retirement savings is considered outside the scope of this review and will not be considered further in this report.

4. Methodology and assumptions used in conducting the analyses

4.1 Introduction

In this section we provide a high-level introduction to the methodology and assumptions adopted in order to carry out our analysis of the current Irish pension regime, and the possible changes to that regime.

4.2 Methodology

The comparison and evaluation of fiscal incentives for retirement saving are complex given the many factors involved and the long time horizon over which they operate. In an endeavour to bring forward a level of ease in comparing the effects of different fiscal levers on the incentive for pension saving the results are presented by way of a Fiscal Incentive Index (“FII”), calculated as the present value of tax relief received on employee and employer contributions divided by the present value of tax paid on the pension benefits in retirement

The Fiscal Incentive Index (“FII”) is a comparative ratio and not an absolute index. Effectively, a FII measure of 1 indicates that the present value of fiscal incentive provided by the state is equal to the present value of the level of tax paid on the arrangement.

A FII measure greater than 1 indicates a fiscal incentive for an employee to partake in the arrangement being investigated i.e. the present value of the tax relief obtained from the state is greater than the present value of the tax paid in the arrangement.

A FII measure less than 1 shows that there is no real fiscal incentive to partake in the arrangement being studied. In this case an employee’s involvement in such an arrangement could be interpreted as being for other reasons for doing so, if involvement is on a voluntary basis.

Its actual value for any given scenario is very dependent on the assumption set adopted, and as such it should more correctly be seen as a means to identify trends or patterns. It is therefore a comparative rather than absolute measure, and care needs to be taken in comparison with other situations.

4.3 Key assumptions

It was necessary to make a number of assumptions when building the model used to replicate the various pension regimes. The assumptions adopted for the analyses reflect the discussions we had with the project steering group of the Society of Actuaries in Ireland and Publicpolicy.ie.

It should be noted that some pension regimes had features which are not present in the current Irish system. Our approach to setting assumptions was such that undue over-complexity in building the models was to be avoided as far as possible, whilst maintaining credibility for the results.

Our core analysis on Pillar II pensions in Ireland is based on looking at notional employees who are assumed to commence pension saving under Pillar II at age 30, 40 or 50, with a contribution rate, in

the Irish baseline, of 15% of salary (5% from the employee and 10% from their employer), across four initial salary levels - €30,000, €50,000, €75,000 and €150,000.

The other key assumptions used for modelling the Irish system are as follows:

- All tax bands and limits are CPI linked
- Retirement age of 68 (reflecting the legislated future state pension age)
- 25% of fund is taken as a lump sum and a pension is payable for the remainder of the employee's lifetime (assumed to be 20 years)
- Salary increase above CPI (promotional/productivity related): 1% p.a.
- Investment return above CPI, net of expenses: 3% p.a.
- Discount rate above CPI to reflect time value of money: 2% p.a.

It has been assumed that employees are all single⁵ Class A PRSI contributors and eligible to receive first pillar pension benefits upon retirement.

PRSI contributions are used to fund on a Pay-As-You-Go basis a broad range in three categories: social insurance, social assistance and child benefit. In order to assess the redistributive effect of allowing for first pillar pension arrangements we have made a working assumption to discard part of the PRSI contributions which are notionally used to pay for other benefits. We have used 'adjusted' (i.e. reduced) PRSI rates in the analysis which are 4% lower than the normal combined employee and employer rates of 14.75%.

It has also been assumed that the state pension would be payable for 20 years.

The analysis solely looked at "PAYE" employees in occupational pension schemes, all other individual "types" e.g. self-employed, do not form part of this analysis.

⁵ We have adopted a single marital status for the purposes of this report. It should be noted that the results do not significantly vary for married pensioners.

5. Relative attractiveness of the incentives to individuals in different tax brackets & redistributive effects of the current fiscal regime for pensions

Relative attractiveness of the current Irish pension regime

5.1 Pillar I & Pillar II – combined impact

We begin our analysis by considering the combined effect of Pillar I and Pillar II arrangements under the present fiscal regime.

The modelled Pillar II contribution structure is:

- 5% of salary from the employee
- 10% of salary from the employer

A proportion of employee and employer PRSI contributions go towards funding the State pension (contributory). For the analysis, we have adjusted the PRSI rates to include only that part which funds that state pension (contributory). A breakdown of the PRSI rates as to what benefits are provided is not available. As such we have made a working assumption to reduce both the employee and the employer PRSI rate by 2% each or 4% in total.

It has also been assumed in the analysis that the state pension received by employees is accrued over a 30 year period. Therefore, at age 68, an employee aged 30 now will have accrued the full state pension, an employee aged 40 will have accrued 28/30ths of the state pension, and an employee aged 50 will have accrued 18/30ths of the state pension.

For the purposes of this report we have based the contribution rate on salary without any allowance for integration with the State pension. Also the FII's in this section are based on a SFT of €2.3m.

In order to illustrate the relative attractiveness of the combined Pillar I and Pillar II pension arrangements, the FII ratio has been amended to take into account the PRSI contributions and the state pension received in retirement. As a result the FII ratio for this purpose is (a)/(b) where:

- (a) ***The present value of tax relief⁶ on employee and employer contributions to a Pillar II arrangement plus the present value of state pension income***
- (b) ***The present value of the tax paid on retirement income from a Pillar II arrangement plus present value of ‘adjusted’ employee and employer PRSI contributions to be paid whilst in employment***

The combined Pillar I and Pillar II FII ratios are as follows:

Salary	Year 1 Pillar II contributions	Year 1 Adjusted PRSI contributions	Fiscal Incentive Index (“FII”)		
			Commencement Age	Commencement Age	Commencement Age
			30	40	50
30,000	4,500	3,225	1.0	1.6	2.9
50,000	7,500	5,375	0.7	1.0	1.7
75,000	11,250	8,063	0.5	0.7	1.2
150,000	22,500	16,125	0.3	0.4	0.7

The FII measure increases as salaries decrease and as age increases – illustrating both the progressive nature of the Irish pension systems and the greater incentive to save as an employee gets closer to retirement age. However the resultant FII measures are below 1.0 for most employees modelled.

The low FII measures are partly due to the interaction of uncapped PRSI contributions with the flat state pension benefits in retirement. A further contributory reason is that, as modelled, the Irish Pillar I system is redistributive from the working to the non-working population.

Participation in Pillar I is mandatory, whereas it is voluntary under Pillar II. It is therefore instructive to examine Pillar II on a standalone basis.

5.2 Pillar II only – employee and employer contributions, including a tax free lump sum

Our next analysis of the current Irish pension regime considers the second pillar pension (“Pillar II”) arrangement only. The contribution structure is 5% of salary for the employee and 10% of salary for the employer. As part of this analysis we modelled employees taking the tax free lump sum upon retirement where available.

As a result the FII formula for this purpose is (a)/(b) where:

- (a) ***The present value of tax relief⁷ on employee and employer contributions to a Pillar II arrangement*** i.e. the present value of the marginal tax relief available on employee contributions and corporate tax relief on employer contributions
- (b) ***The present value of the tax paid on retirement income from a Pillar II arrangement*** i.e. present value of the USC and income tax payable on income in retirement and the tax paid on a lump sum where applicable

⁶ Tax relief is also available on the investment income earned and capital gains on the fund over the accumulation phase. It should be noted that the model is modelled such that the value of the fund at retirement includes this and inherently the tax relief is included in the retirement income.

⁷ Tax relief is also available on the investment income earned and capital gains on the fund over the accumulation phase. It should be noted that the model is modelled such that the value of the fund at retirement includes this and inherently the tax relief is included in the retirement income.

Salary	Year 1 Pillar II contributions	Fiscal Incentive Index ("FII")		
		Commencement Age 30	Commencement Age 40	Commencement Age 50
30,000	4,500	2.8	4.9	16.2
50,000	7,500	1.9	3.2	7.0
75,000	11,250	1.2	2.4	4.4
150,000	22,500	0.5	1.0	2.4

The State provides fiscal incentives to employees to participate in a Pillar II arrangement through marginal tax relief on employee contributions and corporation tax relief on employer contributions. These incentives increase as age increases and also as salary decreases. This illustrates the progressive nature of the Pillar II pension regime.

The table shows that, within the employees modelled, the greatest fiscal incentive to participate in a Pillar II arrangement exists for an employee aged 50 years on a salary of €30,000. The table also shows that, at higher salary levels, it may be necessary to limit the amount or duration of contributions to get the maximum benefit from the fiscal incentive – bearing in mind that a FII value of 1 represents an amalgam of a strong fiscal incentive in respect of contributions on part of the salary (or for part of the term to retirement), with contributions above that amount actually reducing the fiscal incentive. The cut-off point varies according to salary and commencement age. In real life situations, other factors, such as assets in previous pension arrangements, may also impact; care should therefore be taken in drawing conclusions about individual circumstances.

For all but one instance modelled, the present value of the tax relief available under Pillar II arrangements exceeds the tax paid. The principal reasons for this are the effect of tax band shifting in retirement and the availability of a tax free lump sum upon retirement. All employees benefit from both these factors.

Pension contributions paid by an employee in isolation would result in a higher FII ratio due to the effect of the higher individual marginal tax rates as compared to the level of corporation tax. However, occupational pension schemes require employer contributions to be made in order to obtain approval and therefore the study has focused on the fiscal incentive position where both employees and employers are jointly contributing to a Pillar II occupational pension scheme.

5.3 Pillar II only – No lump sum taken upon retirement

One of the primary reasons for the positive fiscal incentives for retirement saving in Ireland is the availability of a tax free lump sum available at retirement.

Based on an assumption that an individual does not elect to take a tax-free lump sum on retirement, the full fund is assumed to be used to provide a level income payable for 20 years. The exclusion of the lump sum generates a higher annual income which has consequential effects on the level of tax paid in retirement.

Salary	Year 1 Pillar II contributions	Fiscal Incentive Index ("FII")		
		Commencement Age 30	Commencement Age 40	Commencement Age 50
30,000	4,500	1.7	2.7	6.2
50,000	7,500	1.0	2.0	3.7
75,000	11,250	0.8	1.2	2.5
150,000	22,500	0.4	0.7	1.2

Where an individual elects not to take a lump sum retirement there is a materially different fiscal incentive picture for all of the employees modelled. The incentives are significantly reduced when compared to the inclusion of a tax free lump sum in the model, but the progressive nature, shown by the trend of the FII ratio decreasing with salary level, remains.

6. Analyses on various changes to the current pension regime

6.1 €2.3m cap on benefits qualifying for fiscal reliefs

Based on the selected salaries of €30,000, €50,000, €75,000 and €150,000 and the contributions of 5% of salary for employees and 10% of salary for employers, a fund value of €2.3m is only reached by one of our modelled employees - an employee aged 30 on a salary of €150,000 (based on index linked and non-index linked assumptions). Obviously this result is purely based on these assumptions and differing results will be obtained should alternative assumptions be adopted.

As stated previously, the analyses are based on a Defined Contribution (DC) model. It is worth noting however, that the benefits available under Defined Benefit arrangements differ in value and accrual pattern to those implied by a DC scheme and as such the above comments are not necessarily appropriate in that regard.

6.1.1 Cap on benefits qualifying for fiscal reliefs of €60,000 p.a. or capital amount of €1.5m

There is currently no automatic provision for the SFT to be indexed in line with cpi or other appropriate measure. There are, however, proposals set out in the programme for government to reduce the SFT level. The table below illustrates the FII measures that would apply on a number of scenarios related to the SFT:

1. €2.3m SFT – indexed to retirement age
2. €2.3m SFT – non-indexed (“flat”) from 2012
3. €1.5m SFT – indexed to retirement age
4. €1.5m SFT – non-indexed (“flat”) from 2012

Salary (Age 30)	€2.3m indexed	€2.3m flat	€1.5m indexed	€1.5m flat
30,000	2.79	2.79	2.79	2.79
50,000	1.90	1.90	1.90	1.90
75,000	1.15	1.15	1.15	0.83
150,000	0.76	0.52	0.63	0.45

Whilst the reduction in the cap did not impact significantly on all the modelled employees, two employees modelled are significantly impacted. In addition, the SFT change clearly would have an effect on those who have already accrued large defined benefit pension benefit and/or defined contribution funds.

6.2 Tax relief reduction on members' contributions to basic rate tax relief or composite rate of 33%

The table below shows how the FII ratio would change for the base case 30 year old if tax relief on employee contributions is amended such that:

- Tax relief would be capped at 33%, with those having a lower marginal rate remaining at 20%; and
- Tax relief on contributions is capped at 20% for all.
- SFT of €2.3m (non-index linked)

Salary	Current regime	Basic rate tax relief or composite rate of 33%	20% tax relief on all individual contributions
30,000	2.79	2.52	2.08
50,000	1.90	1.67	1.30
75,000	1.15	1.01	0.79
150,000	0.52	0.46	0.35

The FII ratio decreases for all the employees modelled, making the system less attractive.

The change to the tax relief has no impact on the present value of the tax paid (the denominator in the FII). For all salary levels a decrease in the present value of the tax relief obtained occurs.

The FII ratios in the table above indicate that the fiscal incentive to participate in a Pillar II arrangement would disappear for an employee earning more than €75,000 once tax relief is reduced to the 20% level. Even at this level, the residual incentive is very dependent on the continued existence of the tax free lump sum option at retirement.

6.3 Tax relief reduction on members' contributions to basic rate tax relief or composite rate of 33% & cap on benefits qualifying for fiscal reliefs of €60,000 p.a. or capital amount of €1.5m

The table below shows how the FII ratio would change for the base case 30 year old if the cap on benefits qualifying for fiscal reliefs is reduced to €1.5m and tax relief on employee contributions is amended such that:

- Tax relief would be capped at 33%, with those having a lower marginal rate remaining at 20%; and
- Tax relief on contributions is capped at 20% for all.

Salary	Current regime	Basic rate tax relief or composite rate of 33%	20% tax relief on all individual contributions
30,000	2.79	2.52	2.08
50,000	1.90	1.67	1.30
75,000	1.15	0.73	0.57
150,000	0.52	0.39	0.31

The FII ratio decreases for all the employees modelled, making the system less attractive.

The FII ratios for those earning €30,000 and €50,000 are unchanged from Section 6.2 as they are unaffected by the change in the cap on the benefits qualifying for fiscal reliefs.

The FII ratios in the table above indicate that the fiscal incentive to participate in a Pillar II arrangement would disappear for an employee earning more than €75,000 once the cap is changed to €1.5m and tax relief is reduced to a composite rate of 33% or basic rate of tax. It is even further reduced for these employees once tax relief is reduced to the 20% level. Again, even at this level the residual incentive is very dependent on the continued existence of the tax free lump sum option at retirement.

7. Comparison with fiscal incentivisation models in other countries

In this Section we outline the methodology and assumptions used for the comparison of the alternative fiscal incentive models in other countries and summarise the key findings.

7.1 Taxation models for Pillar II pension regimes

Like Ireland, the selected countries, with the exception of Australia, apply the “Exempt, Exempt, Taxed” taxation system for their Pillar II pension regime:

Country	Pension Contributions	Pension Fund	Pension Payment
Ireland	Exempt	Exempt	Taxed
Australia	Taxed	Taxed	Exempt
Canada	Exempt	Exempt	Taxed
Netherlands	Exempt	Exempt	Taxed
Singapore	Exempt	Exempt	Taxed (50%)
Sweden	Exempt	Exempt	Taxed
United Kingdom	Exempt	Exempt	Taxed

The Pillar II pension regime in each of the countries operates differently to the Irish Pillar II pension regime; some to a greater extent than others. Some of the key differences are captured in the following table:

Country	Australia	Canada	Netherlands	Singapore	Sweden	United Kingdom	Ireland
Core Pillar II Participation	Mandatory	Voluntary	Mandatory ⁸	Voluntary ⁹	Mandatory ¹⁰	Voluntary, but auto-enrolment	Voluntary
Lump sum on retirement	Yes	No	No	Yes ¹¹	No	Yes (25% of fund)	Yes (25% of fund, max 1.5 x final remuneration)
Corporation tax	28.0%	26.5%	25.0%	17.0%	26.3%	23.0%	12.5%

The following sections provide some context in relation to each of the countries covered.

7.2 Australia

The Australian pension system is different from the pension system in other countries in this report. There is no formal Pillar 1 pension in Australia. Basic means-tested retirement income streams are provided for those who cannot fully support themselves but it is not paid for via a social insurance tax or specific tax as in other countries.

The mandatory superannuation pension scheme is the nearest equivalent of our occupational pension schemes. Employers must generally contribute 9% of an employee's "ordinary time earnings" up to a maximum of Aus\$183,000 (€157,238) per annum. While it is for employers to meet Superannuation obligations, typically the 9% is salary sacrificed as part of a total compensation package. The employer rate will increase to 12% in stepped changes by 2019.

The current cap for tax effective contributions is Aus\$25,000 (€21,481). If an employer's mandatory Superannuation guarantee does not reach the Aus\$25,000 limit, then an employee can make his/ her own additional contributions to reach that limit. If the limit is breached, a punitive surcharge is applied to the amount that breaches the cap. The amount still goes into the Superannuation fund but the surcharge is assessed and has to be paid from other funds that are not locked up in Superannuation fund.

Superannuation contributions are taxed at 15% going in to the fund, income and gains in the fund are taxable at 15% and under current rules tax-free at withdrawal on retirement. There are no restrictions on how retirement income is withdrawn once a resident is over 60. The pension age in Australia is currently 65 but it is increasing to 67 over a period from 2017 to 2023.

7.2.1 Currency exchange rate

We have assumed that €1 would buy \$1.16384 Australian dollars for the purposes of this report.

⁸ In the Netherlands, the majority of Pillar II occupational pension schemes fall under industry-wide arrangements and as a result we have determined them to be mandatory in nature.

⁹ This is based on the Supplementary Retirement Scheme (SRS) which complements the Central Provident Fund (CPF). Contributions to the SRS are voluntary whilst the contributions to the CPF are mandatory.

¹⁰ Most of the Pillar II pensions in Sweden are agreed between trade unions and employers on a nationwide standard basis and hence we have determined them to be mandatory in nature.

¹¹ In Singapore, 50% of the fund on retirement can be taken as a lump sum tax-free.

7.3 Canada

The Canadian system is an EET pension incentivised system. In Canada, each province has the power to raise its own taxes on top of the country's federal tax rates. Due to this, the taxation system in Canada is very complex and varies considerably from province to province. For the purposes of this report, we have concentrated on the taxation system in the state of Ontario as a "typical" system. As well as having the largest economy in Canada, Ontario also has the biggest population and a large percentage of the population have access to occupational pension schemes.

7.3.1 Second pillar pension

The second pillar pension scheme is made up of occupational pension schemes. Traditionally, as in the UK and Ireland, Defined Benefit schemes have been popular but there is a trend of moving towards Defined Contribution schemes.

Contributions into an occupational Pillar II pension are voluntary and are exempt from tax. Pension accumulation is tax free but all withdrawal of funds is taxed as income. Lump sums on retirement are prohibited.

7.3.2 Currency exchange rate

We have assumed that €1 would buy \$1.22173 Canadian dollars for the purposes of this report.

7.4 The Netherlands

The Dutch pension system has three main pillars; a flat-rate state pension (Algemene Ouderdoms Wet, "AOW") which is financed through social insurance contributions, occupational pension schemes, and employee saving schemes. An EET system is used as in many of the other countries in this report.

7.4.1 Second pillar pension

Pillar II contributions are voluntary and are tax deductible at the marginal rate of tax.

In the Netherlands, defined benefit pension schemes have been very popular. However, as in other countries, there has been an increasing shift away from final salary schemes over the last few years. Final salary pension schemes aim to provide 70% of final earnings.

Investment returns are tax exempt but withdrawals are taxed at the marginal rate of tax. Cash lump sums are not prohibited in the Netherlands and it is mandatory to buy an annuity on retirement.

7.5 Singapore

The Singaporean pension system is mainly an EET system as in most other countries in this report. The difference with other countries is that 50% of a resident's accumulated pension can be taken tax free with the remaining taken at a resident's marginal rate of income tax. It is also based on 3 Pillars. The first and second Pillars are the Central Provident Fund and the Supplementary Retirement Scheme respectively.

7.5.1 Second pillar pension

The Supplementary Retirement Scheme (SRS) is part of the Singapore government's Pillar II strategy. It began in 2001 and is operated by the private sector. The SRS complements the Central Provident Fund (CPF). CPF savings are meant to provide for housing and medical needs and for basic living needs after retirement. Unlike the CPF scheme, participation in SRS is voluntary. SRS members can contribute a varying amount to SRS (subject to a cap of \$12,750 or €8,321) at their own discretion. Employers may also contribute to SRS (also subject to a cap of \$12,750). The contributions may be used to purchase various investment instruments.

The SRS offers attractive tax benefits. For a citizen of Singapore contributions to SRS are eligible for tax relief, investment returns are accumulated tax-free and only 50% of the withdrawals from SRS are taxable at retirement (referred to as a "50% tax concession"). The remaining 50% applicable for taxes are taxed at the marginal rate of tax.

7.5.2 Currency exchange rate

We have assumed that €1 would buy \$1.53226 Singaporean dollars for the purposes of this report.

7.6 Sweden

The Swedish pension system rests on three pillars: state pension (social security), mandatory occupational pension schemes and private life insurance policy.

7.6.1 Second pillar pension

The occupational pension schemes are a supplement to state pension and are based on agreements between the trade unions and employers. Most of the second pillar pensions are agreed between trade unions and employers on a nationwide standard basis. Contributions made by an employer to these pensions plan are not considered as taxable income for the employee in question since the pension is seen as deferred compensation. Instead the pension income will be treated as employment income for tax purposes when paid out to the retiree. Lump sums on retirement are prohibited.

7.6.2 Currency exchange rate

We have assumed that €1 would buy SEK8.23824 (Swedish Krona) for the purposes of this report.

7.7 United Kingdom

The taxation system in the UK is reasonably similar to that in Ireland in that the major taxes collected by the government are a combination of income tax and social insurance taxes. The main UK social insurance tax is the National Insurance tax. A three pillar system is used, as in many countries.

Private pension saving in the UK is based on an EET basis.

7.7.1 Second pillar pension

The second pillar pension scheme is made up of occupational pension schemes. Traditionally, Defined Benefit schemes have been popular but there is a trend of moving towards Defined Contribution schemes.

Employees are allowed to obtain tax relief against a combined employee and employer annual pension contribution of up to £50,000 (€63,498), or to accrue a defined benefit pension of 1/16th of

£50,000, each year. UK tax-effective pension benefits are also subject to an individual lifetime fund threshold value of £1.5m (€1.905m). Any funds above £1.5m incur tax rates of 55%.

Pension contributions are tax deductible for income tax purposes at the employee's marginal rate of tax. The tax bands are largely similar to Ireland.

Tax free lump sums are allowed in both the UK and Ireland. Lump sums are restricted to 25% of a members' fund in the UK.

7.7.2 Other information

In order to give individuals greater flexibility and choice in how they may use their tax-relieved pension savings, the Government has abolished the effective requirement to annuitise (buy an annuity) by age 75 from April 2011. The effect of this will be to remove any requirement for individuals to annuitise by a set age, simplify the tax treatment of income drawdown products, and allow more innovation in annuity products.

The Government is interested in exploring further steps that can encourage a broader culture of saving and make retirement saving more flexible and attractive. In particular, the Government is interested in exploring the potential to give people greater flexibility in accessing part of their private pension fund early, as stated in the Coalition Government Agreement.

The Government has taken steps to promote pension saving. Automatic enrolment will commence from October 2012 and will create a duty on all employers to auto-enrol qualifying employees into a minimum quality workplace pension scheme. The employer must contribute at least 5% to the pension scheme with an overall minimum contribution of 8%. The scheme is not mandatory however as employees can opt out at any stage. The Government is also establishing the National Employment Savings Trust (NEST) to ensure employees on low and median incomes, and small employers, have a suitable, low cost pension scheme into which they can save with the introduction of auto-enrolment.

7.7.3 Currency exchange rate

For the purposes of this report, we have assumed that €1 would buy £0.7874 sterling.

7.8 International Fiscal Incentive Comparisons

The report as far as practicable seeks to compare like for like Pillar II systems across the various countries. This required making certain decisions as to what was the most meaningful base to build the comparison whilst respecting the specific features of each countries taxation and pension frameworks. The contribution scenarios adopted for the baseline comparisons are:

1. For Canada, Netherlands, United Kingdom and Ireland - contribution structure of 5% employee and 10% employer adopted
2. For Singapore, maximum contribution to the SRS for Singaporeans is 15% of Absolute Base Income. We have assumed this is split: 10% employer contributions and 5% employee contributions
3. For Sweden, under ITP1 employer contributions are 4.5% for those earning less than €49,705 and 30% for those earning greater than this amount. For ease of comparison we have assumed a contribution structure of 5% employee and 10% employer

4. For Australia, mandatory employer contributions of 9% (stepped up to 12% by 2019) and voluntary 5% employee contributions are modelled

Like the methodology adopted for analysing the Irish pension system we have constructed a Fiscal Incentive Index which compares the tax relief available in the Pillar II pension systems to the tax payable within those systems.

Due to the differences which exist between the overall pension systems (not just the Pillar II pension regime) across these countries, direct comparisons are not easy. As a result we have made some further simplifying assumptions in order to make the comparisons reasonably valid. The main simplification is the assumption that for the other countries, the benefits employees receive under Pillar I will exactly match their tax free income allowance. In effect, for countries other than Ireland, we are assuming that any pension emerging from Pillar 2 (in excess of the tax free lump sum where applicable) would be taxable, starting with the lowest tax band and progressing through the bands as necessary.

On this somewhat simplified 'apples to oranges' approach, the FII ratios that emerge for a baseline 30 year old are as follows:

Salary	Australia	Canada	Netherlands	Singapore	Sweden	United Kingdom	Ireland	Ireland's ranking
30,000	2.6	1.6	1.9	1.6	0.9	1.5	2.8	1
50,000	2.7	1.8	1.8	1.8	1.1	1.9	1.9	2
75,000	2.8	1.9	1.4	1.9	1.2	1.9	1.2	6=
150,000	2.7	1.3	0.9	1.3	0.9	2.0	0.5	7

From the table above, it can be seen that there are significant incentives for saving towards an occupational pension scheme in all countries. As in Ireland, the incentives vary across salary categories for various reasons. However we would stress that particular care is needed in this comparison.

The Irish and Dutch systems are unambiguously progressive while the UK system is slightly regressive. The other systems show a mixed pattern.

Among the key differences to note from the international comparison are the absence of the lump sum option in several of the countries covered (which reduces the relative attractiveness), but that corporation tax rates are generally higher, thereby resulting in an increase in the 'tax spend' relative to Ireland. Both these factors have a significant impact on the resultant FII ratios.

Appendices

Appendix - Commentary on the New Zealand Pension Model

New Zealand has a flat-rate Pillar I pension called the New Zealand Superannuation (NZS). It is financed through general taxation and no specific social insurance tax is paid by employers or employees.

Any resident to the country for at least 10 years since age 20, with at least 5 years since age 50 is entitled to draw an income from the NZS. The pension amount itself is linked to the net average wage of New Zealand. The full NZS pension is between 66% and 72.5% of the net average wage.

To supplement the NZS, the government introduced a soft mandatory Pillar II pension scheme on 1 July 2007 called the Kiwisaver. As with the auto enrolment scheme coming into the UK from October 2012, eligible members are automatically enrolled into the scheme on employment. If an individual does not want to have a Kiwisaver account, the individual has 8 weeks to opt out.

Employees can choose to contribute at a rate of 2%, 4% or 8% of their gross salary (4% default contribution). They can also make additional voluntary contributions. Employer contributions are a mandatory 2%, but employer may contribute more than this.

Once an individual has decided not to opt out of their Kiwisaver account, the government will contribute \$1,000 as a kick-start to their account.

The New Zealand government also pays 50 cent for every dollar an individual pays into their account, up to a maximum government contribution of \$521.43 per annum. The New Zealand government has called this payment a "tax credit" but in practice, it has nothing to do with tax.

Although contributions are mandatory once a member decides not to opt out, it is possible to take a contribution holiday of between 3 months and 5 years once you have 12 months of contributions. Members can take as many contribution holidays as they wish.

Members can choose their own scheme and investment risk profile with a default investment product available if no choice is made.

Eligible residents other than employees, such as the unemployed or self-employed, can opt into Kiwisaver by directly contracting with a Kiwisaver provider. They can then make contributions with the scheme provider.

Members are eligible to withdraw from the scheme in line with the state retirement age (NZS - currently 65). Members who join the scheme after age 60 must wait 5 years before withdrawal. A member can withdraw all their savings as a lump sum.

The scheme differs from schemes in other countries in that earlier withdrawal is allowed in special circumstances:

- When purchasing your first home

- If suffering significant financial hardship
- Moving overseas permanently

Individuals can also withdraw if seriously ill.

Along with the ability to withdraw on purchasing a first home (except for the \$1,000 kick-start), a member contributing for 3 years is entitled to a First Home Deposit Subsidy which pays \$1,000 for each year of contributions up to a maximum of \$5,000.

The NZS payments are net of tax and the Kiwisaver withdrawals are tax free. The New Zealand pension taxation system is effectively a TEE system. Although there is a “tax credit” from the New Zealand government for Kiwisaver members, it is effectively just an added contribution to help encourage membership. However, any other income is taxed in retirement.

Glossary of terms

Term	Explanation
Auto-enrolment	A requirement to automatically enroll employees in a pension scheme, albeit that they may have subsequent opt out options
AVC	“Additional Voluntary Contribution”, voluntary contributions to a pension fund outside of regular contributions
CPF	“Central Provident Fund”, a mandatory state-run arrangement in Singapore which is designed to provide basic living and medical needs.
CPI	“Consumer Price Index”, the rate of inflation in Ireland by reference to the change in price of a specific basket of goods
EET	“Exempt, Exempt, Taxed”, contributions into a pension scheme are exempt, investment gains and income are exempt and retirement income is taxed within the rules of each country
Exempt	Taxation rules that would normally apply are waived
FII	“Fiscal Incentive Index” defined as the present value of tax relief on contributions divided by the present value of tax paid on retirement income
Pillar I	Mandatory state-run social welfare system
Pillar II	Voluntary private pension system
Pillar III	Voluntary non-pension sources of retirement income
PRSA	“Personal Retirement Savings Account”, an individual pension arrangement
PRSI	“Pay Related Social Insurance”, a tax on employment income in Ireland
S2P	Second State Pension, an arrangement for employees who contract out of the State Pension in the UK and direct their National Insurance and other contributions to a separate arrangement in lieu of the State pension
SFT	“Standard Fund Threshold”, a cap on the accumulated pension fund value in Ireland. Amounts above the cap are subject to a tax of 41%. The cap is currently €2.3m.
SRS	“Supplementary Retirement Scheme”, a voluntary pension arrangement in Singapore which is designed to supplement the CPF
Tax band shifting	Obtaining tax relief at marginal rate of income tax on contributions and then paying average income tax on retirement income
Taxed	Normal taxation rules apply
TTE	“Taxed, Taxed, Exempt”, contributions into a pension scheme are taxed, investment gains and income are taxed, and retirement income is exempt from tax within the rules of each country
USC	“Universal Social Charge”, a tax in the Irish taxation system that applies to income in both employment and retirement