ACCRUED-TO-DATE PENSION ENTITLEMENTS IN SOCIAL INSURANCE: FACT SHEET

[Ireland]

[February 2024]

Table of Contents

1. Table 29 column A: Defined contribution schemes (funded, non-general government)

1. General description of the scheme and the calculation model	
a. Coverage of the scheme	
Column A covers private sector Defined Contribution (DC) occupational pension schemes but excludes personal savings plans such as Personal Retirement Savings Accounts (PRSAs) and Retirement Annuity Contracts (RACs). In its 2021 Annual Report the Pensions Authority[1] estimates the number of DC schemes with active members to be 85,964 schemes with 437,196 active members. A module on the topic of pension coverage among workers aged 20 to 69 years was included in the CSOs Quarterly National Household Survey (QNHS) in the third quarter of 2021[2]. The results showed that 72.7% of those in employment between the ages of 20 and 69 have an occupational pension. Of this group the results show that at 68.5% are members of a DC occupational pension scheme.	
b. Institutional set-up	
Data sources/ suppliers	The data used in completing Column A is provided by the Pensions Regulator in Ireland, namely the Pensions Authority. The main data source for Column A is the Annual Scheme Information (ASI). The Registered Administrator for each occupational pension scheme is required to submit an ASI return which includes details of the scheme type, benefit type, status, membership, fund value, contributions and benefits paid. This statistical information corresponds closely to the information required for the preparation of scheme annual reports and member benefit statements. The relevant statistical information must be furnished in respect of each scheme to the Pensions Authority annually within 9 months of the scheme year end for scheme years commencing on or after 1 January 2008.
Which institution is running/managing the calculations?	The Pensions Authority provides the information and it is the Central Statistics Office who is responsible for compiling Table 29 and ensuring the methodology used is consistent with the Eurostat Guide to Pensions.
2. Any other comments	
DC schemes in Ireland are voluntary arrangements. On retirement, the payment of benefits from such schemes are taken in part as a lump sum and the remainder used to: 1. Purchase an annuity, or 2. Invest in an Approved Retirement Fund (ARF) subject to restrictions (minimum guaranteed income or an amount to be invested in an Approved Minimum Retirement Fund (AMRF)) Flexible drawdown is allowed in an ARF and drawings are subject to tax as income. It is also possible for someone to use some or all of their ARF to purchase an annuity. The actual amount that can be taken as a tax-free lump sum is subject to limits set by the Revenue Commissioners and can be either based on length of service and final salary with an employer (to a maximum of 150% of final salary) or if one chooses to invest in an ARF, it is limited to 25% of the fund value. There is also a lifetime limit for the tax-free lump sum cash from all pension schemes of €200,000 (where lump sum amount is in excess of €200,000 varying tax rates apply). Precise retirement options will depend on factors such as tax-free lump sum option chosen (as above), whether Additional Voluntary Contributions (AVCs) have been made and whether the retiree has other pension benefits. Note that once the DC assets have been invested in an ARF or converted to an annuity they are no longer recorded in Table 29 for Ireland.	

[1] The Pensions Authority is the organisation responsible for the regulation of occupational pension schemes in Ireland.
[2] https://www.cso.ie/en/releasesandpublications/ep/p-pens/pensioncoverage2021/

2. Table 29 column B: Defined benefit schemes and other non-defined contribution schemes (funded, non-general government)

<table>
<tr><th colspan="2">1. General description of the scheme and the calculation model</th></tr>
<tr><td colspan="2">a. Coverage of the scheme</td></tr>
<tr><td colspan="2">Column B covers private sector Defined Benefit (DB) occupational pension schemes. At end-2021 there were 658 defined benefit pension schemes for private sector employees. These are voluntary schemes and are regulated by The Pensions Authority.

A module on the topic of pension coverage among workers aged 20 to 69 years was included in the CSOs Quarterly National Household Survey (QNHS) in the third quarter of 2021. The results showed that 72.7%[3] of those in employment between the ages of 20 and 69 have an occupational pension. Of this group the results show that at 28% are members of a DB occupational pension scheme.

Due to the number of private occupational DB schemes In Ireland it is not possible to provide detail in this Factsheet at individual scheme level. The information given attempts to represent average pension scheme assumptions etc.</td></tr>
<tr><td colspan="2">b. Institutional set-up</td></tr>
<tr><td>Data sources/ suppliers</td><td>The data used in completing Column B is provided by the Pensions Regulator in Ireland, namely the Pensions Authority. There are two main data sources for Column B:

(1) Annual Actuarial Data Return (AADR)
The Pensions Act requires that the Trustees of a DB scheme assess whether the scheme can meet a certain prescribed standard, known as the Minimum Funding Standard[4]. Trustees of DB schemes subject to the funding standard are required to submit an AADR to the Pensions Authority. The AADR includes details of the status of a scheme as to whether it is current, frozen or in wind-up and sets out the assets and liabilities for the scheme. In relation to the assets of a scheme the actuary must report the breakdown of the assets across equities, bonds, property and cash. The report also classes the liabilities across the membership of the scheme broken down by active, deferred[5] or retired members.

The Funding Standard values reported in the AADR return are calculated in accordance with prescribed guidance issued by the Society of Actuaries in Ireland and guidance issued by the Pensions Authority[6].

It is important to note that no adjustment has been made to the AADR Regulatory data for the purposes of Table 29. A slight variation on the treatment of the date variable to ensure consistency with the ASI data was made but the actuarial assumptions etc. remain unadjusted.

(2) Annual Scheme Information (ASI)
The Registered Administrator for each occupational pension scheme is required to</td></tr>
</table>

[3] This percentage includes members of DB Government-managed schemes which appear in Column G of Table 29
[4] The Pensions Authority monitors the financial strength of funded defined benefit pension schemes through the operation of the Funding Standard requirements under the Pensions Act. The Funding Standard is a set of regulations that require funded defined benefit pension schemes to build up and maintain enough funds to pay members their pension entitlements were the fund to be wound up.
[5] Employees who leave/move 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.
[6] *Prescribed Guidance in relation to Section 34 of the Pensions Act, 1990, Version 1 dated June 2014*

	submit an ASI return which includes details of the scheme type, benefit type, status, membership, fund value, contributions and benefits paid. This statistical information corresponds closely to the information required for the preparation of scheme annual reports and member benefit statements. The relevant statistical information must be furnished in respect of each scheme to the Pensions Authority annually within 9 months of the scheme year end for scheme years commencing on or after 1 January 2008.
Which institution is running/managing the calculations?	The Pensions Authority provides the information described in section b. above to the Central Statistics Office who is responsible for compiling Table 29 and ensuring the methodology used is consistent with the Eurostat Guide to Pensions.
c. Major formulas: Benefit formula; Indexation of benefits	
Benefit formula	The benefit formula differs for each scheme and depends on the sponsoring employer's decision. A 2007 survey carried out by the Irish Association of Pension Funds (IAPF) revealed that the average private sector DB plan has the following benefits: Retirement age: 65 Pensionable Salary: Final Annual Salary Pension Accrual Rate: 1/60th for each year of service Integrated with the State Pension Contributory[7]: Yes Retirement Lump Sum: Optional Employee Contributions: 5%
Indexation of benefits	The indexation of benefits differs for each scheme and depends on the sponsoring employer's decision. A 2007 survey carried out by the Irish Association of Pension Funds (IAPF) showed that the majority of DB schemes feature some form of post retirement pension increase provision. For those private occupational pension schemes in column B which take account of pre-retirement revaluations or post-retirement pension escalations on a pay parity basis, the assumed rate of increase per the prescribed Guidance must be the relevant rate of price inflation plus 1.5% per annum.
d. Type and structure of the calculation model	
The accrued-to-date (ADL) liability values which appear in Rows 1 and 10 of the Supplementary Table are sourced from the Annual Actuarial Data Return (AADR). The Trustees of each DB scheme subject to the Funding Standard are responsible for completing and submitting this return. The values reported are transfer/wind-up values calculated in accordance with guidance issued by the Society of Actuaries in Ireland and guidance issued by the Pensions Authority. The Guidance used for the 2021 ADL valuation is Version 1 dated October 2016. The Table Rows relating to employer actual contributions, employee actual contributions, payment of pension benefits are sourced directly from the Annual Scheme Information (ASI) return which is made annually by the scheme Registered Administrator to the Pensions Authority.	
2. Assumptions and methodologies applied	
a. Discount rate	
The Discount Rate to be used for calculating the scheme liabilities in the AADR is prescribed by the Pensions Authority. Individual scheme discount rates are <u>not</u> available in the data source and therefore a 'representative' discount	

[7] See Column H for details of benefits of State Pension Contributory (SPC)

rate for all schemes was estimated for the purposes of calculating the *Household Social Contribution Supplements* which appear in Row 2.4. This Row relates to the property income earned on the schemes. For all defined benefit pension schemes covered in Column B, property income is equivalent to the unwinding of the discount rate, meaning that its value is equal to the discount rate times the pension entitlements at the beginning of the accounting period.

The average 'representative' discount rate was calculated using the actuarial liability broken down by type - active, deferred and pensioner - and applying the relevant discount rate/annuity rate to each category. The result is an overall discount rate of 2.5% nominal.

b. Wage growth

As a general principle, the statutory minimum basis for transfer values does not take account of future salary increases.

c. Valuation method: ABO/PBO

Eurostat recommends that the Projected Benefits Obligation (PBO) approach is applied for the estimation of pension obligations of defined benefit schemes. However, the Guide states that Accumulated Benefit Obligations (ABO) approach may be applied if no PBO estimations are available.

As the funding standard calculation is a transfer value/wind-up value and therefore does not take account of salary escalation, it is the ABO approach which is used in the AADR return. The ADL for column B therefore considers only the present value of benefits earned to date and as a general principle, the statutory minimum basis for transfer values does not take account of future salary increases.

3. Data used to run the model

a. Mortality tables

The Guidance prescribed by the Pensions Authority in relation to mortality tables is as follows:

Pre-retirement mortality:
Males: AM92
Females: AF92

Post-retirement mortality:
Males: 62% of PNML00
Females: 70% of PNFL00

with an annual compound increase to the annuity value for each year between 2008 and the year in which normal pensionable age falls of:
0.50% (males with no dependant's pension)
0.38% (female with no dependant's pension)
0.39% (male or female with dependant's pension)

b. Entitlement statistics; other relevant statistics

4. Reforms incorporated in the model

In a funded defined benefit scheme, if the funding of the scheme is not sufficient to satisfy the Funding Standard, the trustees may apply to the Pensions Authority for what is referred to as a "Section 50 order". Under such an order, accrued benefits relating to members' past service can be reduced.

Row 7 in Table 29, column B, takes account of the reduction in the liability during the period which is attributable to Section 50 orders negotiated during the year.

5. Specific assumptions

a. How are careers modelled?

b. How are survivor pensions calculated?

The Guidance prescribed by the Pensions Authority in relation to spouses/dependents is as follows:
Status at date of leaving service. Where entitlement is based on the member's status as a spouse or person with a dependant at retirement or earlier death, a proportion may be assumed.
The calculation depends on the scheme actuary's decision.

The Guidance prescribed by the Pensions Authority in relation to age difference is as follows:
Males three years older than females. In circumstances where a spouse's pension would be payable only to a member's current spouse that spouse's age may be used.

c. How is the retirement age modelled over time?

The Guidance prescribed by the Pensions Authority in relation to the retirement age is as follows:
Where a member has an absolute right to receive benefits without reduction for early payment and without the consent of the trustees or employer, then the transfer payment must be calculated on the assumption that the benefit commences on:
(a) in the case of benefits other than preserved benefits, the earliest date at which unreduced benefits are available as a right to the member; and
(b) in the case of preserved benefits, the earliest date at which preserved benefits become payable under the Act.

d. Other specific features of the model

6. Any other comments

Note in relation to coverage: When a DB scheme is wound up the accumulated entitlements may be transferred to a new/existing DC scheme or in some cases to a Personal Retirement Savings Account (PRSA). The latter is outside of the scope of Table 29.

As new data sources have been developed for the purposes of occupational private schemes in Table 29 it is important to note that these results are not yet consistent with the core National Accounts. Consistency of results is a priority for National Accounts compilers and work is ongoing to ensure consistency of comparable results in the future.

3. Table 29 column D: Defined contribution schemes (funded, general government)

1. General description of the scheme and the calculation model
a. Coverage of the scheme
This scheme type is not applicable to Ireland.

4. Table 29 column E: Defined benefit schemes (funded, for general government employees, classified in financial corporations)

1. General description of the scheme and the calculation model
a. Coverage of the scheme
This scheme type is not applicable to Ireland.

5. Table 29 column F: Defined benefit schemes (funded, for general government employees, classified in general government)

1. General description of the scheme and the calculation model
a. Coverage of the scheme
This scheme type is not applicable to Ireland.

6. Table 29 column G: Defined benefit schemes (unfunded, for general government employees, classified in general government)

1. General description of the scheme and the calculation model	
a. Coverage of the scheme	
Column G of Table 29 refers to the unfunded defined benefit schemes for general government employees. It covers different pension arrangements for the following groups of public service employees: • Civil Servants • Education • Health • Security, i.e. Gardaí (Police), Defence Forces and Prison Officers • Constitutional, Ministerial and Judicial office holders • Local Government • Non-Commercial State Agencies (NCSAs) There are numerous pension schemes for public sector employees; however, the benefits provided by these schemes can be broadly categorised as follows:	

	Pre 6th April 1995 entrant	Post 6th April 1995 entrant	Single Public Service Scheme entrant (Post 2012)
Pension	Final Salary Pension	Integrated[8] with State Pension (Contributory)	Integrated pension based on career average salary; adjusted by Consumer Price Index
Lump sum payment	Final Salary Lump Sum	Final Salary Lump Sum	Career Average Lump Sum
Minimum Normal Retirement Age	60 Years	60 Years (65 years post 2004)	State Pension Age, 66 Years
Pensions in Payment Indexation	Pay Parity	Pay Parity	CPI linking

There is generally 100% coverage of employees and part time/fixed term contract employees whose normal hours of work constitute at least 20% of the normal hours of work of a comparable full-time employee.

b. Institutional set-up	
Data sources/ suppliers	The Department of Public Expenditure, NDP Delivery and Reform carried out the data collection required for the calculation of the Accrued-to-Date Liability (ADL) for column G. A large amount of individual level data on active employees, pensioners and deferrers was required to calculate the value of public service pensions in each sector. Overall, approx. 375,000 records in respect of active members and 180,000 records in respect of pensions in payment were received with reference date 31/12/2021.
Which institution is running/managing the calculations?	The Department of Public Expenditure, NDP Delivery and Reform carried out all aspects of the Column G calculation. This was done in consultation with the CSO. The methodology used for the calculation of the ADL follows that prescribed in the Technical Compilation Guide for Pension Data in National Accounts produced by Eurostat and the European Central Bank.
c. Major formulas: Benefit formula; Indexation of benefits	
Benefit formula	There are a number of pension schemes for public sector employees. The retirement

[8] Post-1995 public sector workers are eligible for the State Pension (Contributory). Therefore, that portion of their pension entitlement comes from the Social Insurance Fund and appears as an obligation of Column H in the supplementary table. See Benefit Formula in section C for further details.

benefits can be summarised as follows:

	Pre 6th April 1995 entrant	**Post 6th April 1995 entrant**	**Single Public Service Scheme entrant (Post 2012)**
Pension	Final Salary Pension 1/80th x pensionable salary for each year of reckonable service Max 40 years reckonable service	Final integrated salary pension Pensionable salary up to 3.333333 x State Pension: 1/200th for each year of reckonable service Pensionable salary in excess of 3.333333 x State Pension: 1/80th for each year of reckonable service Max 40 years reckonable service	Career average integrated salary pension based on career average salary; revalued by Consumer Price Index, upward only. Career average pensionable salary up to 3.74 x State Pension: 1/172th for each year of reckonable service Career average pensionable salary in excess of 3.74 x State Pension: 1/80th for each year of reckonable service
Lump sum payment	3/80th x pensionable salary for each year of reckonable service: max 120/80th	3/80th x pensionable salary for each year of reckonable service: max 120/80th	3/80th x career average pensionable salary for each year of reckonable service

The pension entitlement (but not the lump sum payment) of those who joined the public service after 6th April 1995 is integrated with their State Pension entitlement such that their total pension is made up partly by a public service pension and the balance by their State Pension (Contributory). This means that the Government's liability for these employees is split between:

- The payment of public service pension funded by the Exchequer (included in Column G of Table 29)
- The State Pension paid from the Social Insurance Fund (SIF) (included in Column H of Table 29)

Indexation of benefits

	Pre 6th April 1995 entrant	**Post 6th April 1995 entrant**	**Single Public Service Scheme entrant (Post 2012)**
Indexation of pensions in payment	Pay Parity	Pay Parity	CPI linking

d. Type and structure of the calculation model

For the estimation of pension liabilities, the EU technical guide notes that it is important to distinguish between pension entitlements accrued by current retirees, and pension entitlements accrued by active members. The former group has its working and contribution period behind it and is therefore already entitled to full pension benefits. For the estimation of ADL liabilities, it is important to take into account that current active members have not yet accrued all of their future (expected) full pension benefits upon retirement.

Current **pensioners** or retirees are entitled to pension benefits on the basis of past accrued pension rights. This group is entitled to full pension benefits. In other words, the benefits they receive in the base year are fully accrued. It is important to note that current pensioners are entitled to pension benefits not just for one year but, in fact, to all future pension payments, usually until death.

The estimation of retirement benefit entitlements for **active** members closely follows the approach for current pensioners.

However, the fact that current employees are not yet entitled to the full pension they would receive after a complete career needs to be taken into account. Therefore, their future prospective pension and gratuity payments need to be estimated.

The accrued proportion of the full prospective pension and gratuity under the PBO approach depends on how much of a career has been completed to the balance sheet date. The calculation of the accrued pension = approximated future total prospective pension x T / N where T = Contribution period of the participant until the balance sheet date and N = total expected contribution periods of the participant until retirement.

The projection of the future career starts after the year for which the latest data on past earnings is available i.e., from 2022 onwards.

The pension benefit at the future point of retirement has been calculated for all active employees for whom detailed data have been obtained.

In order to determine the value of the liabilities, projection of the benefits payable in the future was first carried out. The projections were performed on an individual line by line basis which captured the idiosyncrasies in the rules and entitlements by sector (e.g., Civil Service, Health, and Education) and by cohort (pre-1995, post-95, post 2004 entrants and post 2013 entrants).

The ADL calculated under the PBO approach constitutes the state's obligations to make pension and other benefit payments to current and potential future beneficiaries on and from the valuation date. The full range of liabilities valued included the main life pension and gratuity, a spouse's pension, a supplementary pension (where applicable) and death in service benefits including survivors' pensions and gratuities.

Projected benefit outflows were then capitalised by discounting the projected cash-flows at a suitable discount rate. A wide range of other assumptions were used in the calculation of the ADL estimate, see Section 2.

2. Assumptions and methodologies applied

a. Discount rate

A discount rate is used to determine the present value of accrued retirement benefits. Specifically, the real discount rate [i.e., the nominal discount rate less the impact of expected inflation] is critical to the calculation of the value of retirement benefits.

For government-managed pension schemes, central government debt securities are generally considered as a suitable basis for the discount rate.

The choice of the discount rate should be based on the following criteria:

- In order to obtain a suitable proxy for a risk-free interest rate, it is advisable to base it not on central government debt securities of one single country but on a basket of e.g., European central government debt securities.

- The maturity of these debt securities should be similar to that of pension entitlements, i.e., at least 10 years, but preferably longer.

- In order to ensure comparability across countries, the same discount rate should be applied to all EU countries and all government-managed pension schemes (including social security pension schemes) at whatever level of government.

- A stable discount rate should be applied to avoid the noise resulting from frequent changes.

Discount rate: In line with the above criteria, it is recommended by Eurostat to set the discount rate at 2% per annum in real terms and 4% per annum in nominal terms.

b. Wage growth

Wage growth
Generally, it is assumed that, over the long term, wages follow labour productivity growth per capita in the economy. In order to reflect heterogeneous growth paths across the EU, it is recommended in the EU technical guide that the wage growth assumptions produced by the European Commission for use in the 2024 Ageing Report — reflecting productivity growth per capita — should if possible be used for the estimation of pension entitlements.

The labour productivity per hour growth rate for Ireland was taken from the projections run by the European Commission and sent to Member States to form the basis of the 2024 Ageing Report.

Average wage growth rates per 2024 Ageing Report:

	2025	2035	2045	2055	2065	
Real	4.0%	1.4%	1.4%	1.3%	1.3%	
Nominal	6.3%	3. 4%	3.4%	3.3%	3.3%	

The nominal rates reflect a constant 2.1% per annum inflation assumption throughout plus the “real” labour productivity growth rates of approximately 1.9% per annum.

State pension increases
State Pension (Contributory) increases need to be taken into account for the calculation of the liability of pension benefits integrated with the State Pension.

The State Pension (Contributory) is assumed to increase at the same rate as salary increases i.e., circa 4% p.a. nominal in the long term. This is in line with the base case assumption adopted in the most recent Actuarial Review of the Social Insurance Fund 2020. The State Pension (Contributory) targets 33%-34% of average earnings at a given time.

Allowance has been made for the Supplementary Pension[9] in this review.

No allowance for the cost of the State Pension (Contributory) has been made in this review as it is assumed that this has been provided for via the Social Insurance Fund / PRSI system and thus costed elsewhere.

Post-retirement pension increases

Pension increases are a discretionary benefit and require Ministerial consent. Pensions for pre-2013 cohorts have increased at full pay parity. For the most part, general increases for staff are passed on to pensioners on the same

[9] A supplementary pension is an additional amount of pension that may be paid to a person whose occupational pension is integrated with the State Pension. It is paid in circumstances where the combined pensions (i.e., occupational and Social Welfare benefit) are less than the pension they person would receive if the occupational pension was calculated on a non-integrated basis.

basis. While discretionary, it is assumed that future pension payments will be indexed in line with general salary increases for the main valuation results presented in this review.

Post-2013 cohorts, i.e., Single Scheme members' benefits are indexed in line with increases in the Consumer Price Index (CPI).

Promotional salary scale

It is understood that the salary increase assumption adopted which is line with labour productivity growth rates per capita incorporates both general and promotional salary increases.

c. Valuation method: ABO/PBO

The EU technical guide recommends that the Projected Benefit Obligation or ("PBO") approach is applied when estimating retirement benefit obligations of defined benefit schemes for government employees. This is one of the most commonly used actuarial valuation techniques for pension valuation purposes and one which is recommended for the purposes of the present ADL calculation in any event.

Under the PBO approach, it is assumed that pension and gratuity benefits are uprated in line with wage growth, or consumer price inflation where appropriate, and that pensions in payment are indexed in accordance with the relevant indexation rules. For the calculation of the ADL in respect of Irish public service occupational pensions accrued benefits are uprated in line with wage growth pre-retirement and pensions are also uprated in line with wage growth post retirement (save for post 2013 entrants whose benefits are uprated in line with CPI), reflecting the historic discretionary practice of pay parity linkage.

3. Data used to run the model

a. Mortality tables

Life expectancy / mortality rates

The assumed life expectancy in retirement is the most critical demographic assumption.

A standard mortality table recommended by the Society of Actuaries in Ireland was used in this analysis.
This mortality table reflected a mortality investigation carried out by the Society of Actuaries in Ireland over 2013 which considered mortality data from large private sector and public sector pension schemes in Ireland.

The base table used for the post-retirement mortality assumptions reflected this new study with the revised rate of mortality improvement factors reflecting an updated analysis performed by the CSO in 2013 which showed that the rate of mortality improvement had slowed down as compared with previous estimates.

i. Mortality is based on 88% of ILT15 for males and 91% of ILT15 for females, with allowance for future improvements in line with CSO projections from 2011.

This mortality basis incorporates an explicit allowance for continuing improvements in mortality rates into the future. That is to say it is expected that members retiring in future years will benefit from progressively improved life expectancies compared to their counterparts retiring this year. This mortality assumption (both the base table and the mortality improvement rates into the future) is in line with that included in the Pensions Authority prescribed guidance in relation to section 34 of the Pensions Act i.e., it is the mortality table used for the purpose of calculation of transfer values.

Life Expectancies with allowance for future mortality improvements are set out below:

Gender	Life expectancy of a 65 year old member reaching retirement in 2021	Life expectancy of a 65 year old member reaching retirement in 2041

Male	21.8 years	24.1 years
Female	24.2 years	26.2 years

As mortality changes have proven particularly difficult to predict, it is intended to keep these assumptions under review at future valuations.

b. Entitlement statistics; other relevant statistics

4. Reforms incorporated in the model

5. Specific assumptions

a. How are careers modelled?

Promotional salary scale

It is understood that the salary increase assumption adopted which is line with labour productivity growth rates per capita incorporates both general and promotional salary increases.

b. How are survivor pensions calculated?

Death in service benefits / ill-health benefits

A death in service/ ill-health loading of 1% has been applied to the ADL.

c. How is the retirement age modelled over time?

2.3.3. Assumed retirement ages

Table of Normal Retirement Ages assumed in ADL:

	Pre 1995	Post 1995	Post 2004	Post 2013
Civil Service	63	63	65	66
Defence	50	50	50	50
Health	63	63	65	66
Education	63	63	65	66
Justice	55	55	55	55
Local Government	63	63	65	66
NCSAs	63	63	65	66

d. Other specific features of the model
<u>Proportion married</u> 90% of members are assumed to be married at retirement. <u>Death in service benefits / ill-health benefits</u> A death in service/ill-health loading of 1% has been applied to the ADL. <u>Staff turnover</u> No allowance has been made for staff turnover albeit this is not expected to have a significant impact on the results. Pension increases in deferment are a discretionary benefit requiring Ministerial consent. Deferred members benefits have traditionally been increased in line with wage growth. <u>Age difference</u> Males are assumed to be three years older than females. <u>Early retirement allowance</u> No allowance has been made for early retirement. This is not expected to have a significant impact on the results given that (broadly) cost neutral early retirement is permitted in the public service schemes.
6. Any other comments
See Department of Public Expenditure, NDP Delivery and Reform's Actuarial Review of Public Service Occupational Pensions in Ireland (link in section 9) for further detail on the methodology used in compiling Column G.

7. Table 29 column H: Social security pension schemes (unfunded)

1. General description of the scheme and the calculation model
a. Coverage of the scheme

Column H of Table 29 refers to unfunded social security pension schemes managed by Government. Means-tested payments are excluded. The expenditure line items from the Irish Social Insurance Fund are itemised below. The Social Insurance Fund is funded on a pay-as-you-go basis. Its income is made up of a combination of Pay-Related-Social-Insurance (PRSI) contributions from employers, employees/self-employed, and, when there is a deficit in the fund, an Exchequer subvention.

1. *State Pension (Contributory)*
The State Pension (Contributory) is paid to people from the age of 66 who satisfy the social insurance contribution conditions. It is not means-tested. An individual can have other income and still get a State Pension (Contributory). This pension is taxable, but a person is unlikely to pay tax if it is their only income. There are a number of pro-rata pensions available to people who paid different types of social insurance contributions or who did not pay contributions because of various reasons. For example, those with mixed insurance records (i.e. people who worked for some time the in public and private sector) may be entitled to a pro-rata pension.

2. *Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension*
Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension is a weekly payment to the wife, husband or civil partner of a deceased person. Either the recipient or their deceased spouse or civil partner must satisfy PRSI contribution conditions. The pension is payable regardless of other income. To qualify an individual must be a widow, widower or surviving civil partner and they must not be cohabiting with another person. If a person is divorced (or part of a civil partnership that has been dissolved) and would have been entitled to a Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension had they remained married (or in a civil partnership), they may retain their entitlement to the Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension.

3. *Invalidity Pension*
Invalidity Pension is a weekly payment to insured people who cannot work because of a long-term illness or disability. At 66, recipients are transferred to State Pension (Contributory). Invalidity Pension is taxable. Individuals are entitled to a Free Travel Pass. They may also get extra social welfare benefits such as the Household Benefits Package. Since December 2017 this benefit is available to the Self-Employed who satisfy the qualifying conditions.

Qualifying conditions for schemes covered
In terms of the workforce covered all individuals in the population are eligible for the above benefits subject to satisfying the qualification criteria. Entry into Social insurance is mandatory in Ireland in that PRSI must be paid. If an individual meets the qualification criteria for more than one of the three schemes above, payment will only be made in respect of one scheme.

1. Qualifying conditions for State Pension Contributory (SPC)
The applicant needs to be age 66, to have started paying social insurance contributions before age 56 and to have paid 520 (10 years') contributions.
2. Qualifying conditions for Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension (WPC)
A person may automatically qualify for WPC if their late spouse or civil partner had been receiving SPC. Alternatively, either the recipient or their partner must have: (1) 260 total contributions paid before the earliest of the Date of death or State pension age of the person with the contributions paid AND
an average of 39 paid or credited contributions in either the 3 or 5 years before the death of the spouse or civil partner or before he or she reached pension age 66; or (2) A yearly average of at least 24 paid or credited contributions from the year of first entry into insurance until the year of death or reaching pension age. If this average is used then an average of 24 gives entitlement to a minimum pension, an average of 48 per year is needed to qualify for the full pension.

3. Qualifying conditions for Invalidity Pension

The applicant must have at least 260 total contributions paid and at least 48 contributions paid or credited in the last or second last complete contribution year before the date of claim and be permanently incapable of work.

b. Institutional set-up

Data sources/ suppliers	The data needed for the Accrued-to-Date Liability (ADL) valuation was taken from the administrative systems of the Department of Social Protection (DSP).
Which institution is running/managing the calculations?	The calculations were performed by the Actuarial and Investment Analysis Unit of the Department of Social Protection. This was done in consultation with the CSO. The methodology used for the calculation of the ADL follows those prescribed in the Technical Compilation Guide for Pension Data in National Accounts produced by Eurostat and the European Central Bank.

c. Major formulas: Benefit formula; Indexation of benefits

Benefit formula

Unlike most EU social welfare systems which pay benefits on an earnings-related basis, the benefits payable under social insurance in Ireland are typically flat-rate benefits with no link to previous earnings. The level of benefits paid are based on the number of weeks in an applicant's social insurance record. These are made up of paid PRSI contributions, credited PRSI contributions and, for the State Pension (Contributory), periods spent caring for children aged 12 or under, or an incapacitated person.

For the **State Pension (Contributory),** prior to 2018, a person's pension entitlement on reaching State Pension age was calculated using only a 'yearly average' approach. Under the 'yearly average' approach, the total number of contributions paid/credited at pension age is divided by the number of years between entering insurable employment and the last full year before pension age is reached. Entitlement is then banded, with a yearly average of 48 required for the maximum rate of pension. (Separate arrangements apply for those who reach pension age while on a Widows or Invalidity pension.) There are a number of pro-rata pensions, which were introduced because of the exclusion of some people from the social insurance system at particular times. See Table below.

SPC Level	Number of yearly average contributions
100%	48 average contributions per year since 1979 or start of employment, whichever average is greater
98%	40 average contributions per year since start of employment
90%	30 average contributions per year since start of employment
85%	20 average contributions per year since start of employment
65%	15 average contributions per year since start of employment
40%	10 average contributions per year since start of employment

Table 1: Entitlement to SPC at various levels for varying average contributions paid

Entire calendar years with absence of contributions due to homemaking (after 1994) can be disregarded in the calculation of state pension rates, up to a maximum of 20 years. For example, if a person missed 5 years of a 35 year career due to homemaking, the average would be (total contributions)/ (35-5).

The rates of SPC for the various bands are set out in table below.

Yearly Average Contributions	% of full SPC	Personal Rate Per Week (2023)
48 or over	100%	€265.30
40 to 47	98%	€260.10
30 to 39	90%	€238.50
20 to 29	85%	€225.90

15 to 19	65%	€172.90
10 to 14	40%	€106.00

Table 2: Post September 2012 State Pension (Contributory) Rate Bands
An additional €10 per week is payable to recipients over the age of 80.

Since 2018, the rate of benefit payable to a pensioner is now the greater of that person's entitlement under the 'yearly average' and their entitlement under the 'Total Contributions Approach' (TCA). Under the TCA calculation, a person who has a social insurance record of 40 years will qualify for the maximum rate of State Pension (Contributory), with proportionally lower rates payable to people with weaker records. The social insurance record for the TCA calculation is based on an applicant's total paid and credited social insurance contributions prior to State Pension Age, as well as Home Caring Periods. home Caring Periods are granted in respect of periods prior to State Pension Age which were spent caring for children aged 12 or under, or an incapacitated person, subject to a maximum of 20 years.

Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension
To qualify the recipient must be a widow, widower or surviving civil partner and must not be cohabiting with another person. Either the recipient or their deceased spouse or civil partner must have enough social insurance contributions. See table below for rates.

Contributions	Aged under 66	Aged 66 or over	Aged 80 or over
48 or over	€225.50	€265.30	€275.30
36 to 47	€222.10	€260.10	€270.10
24 to 35	€219.50	€254.00	€264.00

Table 3: Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension Rate Bands

Invalidity Pension
A weekly payment of €225.50 is paid to a qualified recipient aged less than 66 years. At 66, recipients transfer automatically to the State Pension (Contributory) at the full rate (see above rates).

Indexation of benefits	Benefits are assumed to increase in line with wage growth, though known real increases up to 2023 were incorporated. Ireland is currently atypical compared to other EU countries in its approach to applying discretionary increases through political decisions in the annual budgetary process. As part of government reforms to the State pension system, from September 2023, a smoothed earnings method to calculating a benchmarked/indexed rate of State Pension payments is calculated and provided to Government as an input to the annual budget process.

d. Type and structure of the calculation model

This review was carried out using a Python-based actuarial model (replacing the Excel-based model used in the last valuation).
Model output was based on DSP administrative data reflecting the position on 31 December 2021.

The model is a standard deterministic (implicit) cohort-based projection model with capacity to perform long-term projections of income and expenditure for the Irish Social Insurance Fund. The model is based on standard actuarial mathematics for social security schemes. Transition probabilities (mortality rates, invalidity rates etc.) are used to map the transition of an insured person's status each year onto the next year's status.

Model projections rest on three core modules that project the future population, labour force and economic environment in Ireland. The model uses macrosimulation techniques, i.e., the projections rely on aggregated data. The status of insured persons (active, inactive and pensioner) is explicitly modelled.

In order to calculate Accrued-to-Date pension cashflow projections for the purposes of determining the ADL, the model does not allow future new entrants into the social insurance system. The existing registered social insurance population is treated as a closed group.
Pensions in payment in the base year of the valuation are regarded as fully accrued. The “accrued” portion of cashflows relating to future pensioners (for existing social insurance participants) is determined using a “T over N” approach.
Cashflows are reduced by a factor of T / N where:

- “T” is the number of years from the average entry year into social insurance for a given cohort and the base year, and
- “N” equals T plus the numbers of years between the base year and the year the pension commences.

The ADL is calculated as a net present value of the accrued-to-date cashflows using an appropriate discount rate.
The projections are carried out on a “real” basis, i.e. net of future price changes.

2. Assumptions and methodologies applied

a. Discount rate

A fixed rate of 2% real per annum, as per Eurostat Technical Guide (equivalent to 4% nominal per annum).

b. Wage growth

As noted in 1., whilst benefits are not explicitly linked to wages, the projections are impacted by a wage growth assumption as benefits are assumed to grow in line with wage growth.
Real wage growth is assumed to coincide with labour productivity growth rates.
The Ageing Working Group (AWG), a working group of the European Commission’s Economic and Policy Committee, has prepared labour productivity growth projections for Ireland to be used in the Ageing Report 2024.
The Technical Guide notes, “*In order to reflect heterogeneous growth paths across the EU, the wage growth assumptions of the AWG — reflecting labour productivity growth — should if possible be used for the estimation of pension entitlements.*”
Accordingly, the AWG’s projections for labour productivity growth have been used as the basis of real wage growth in Ireland:

	2025	2030	2040	2050	2060	2070
Real wage growth	4.0%	2.7%	1.6%	1.4%	1.3%	1.2%

Table 4: Average real wage growth / labour productivity per hour (growth rate %) per 2024 Ageing Report

c. Valuation method: ABO/PBO

Projected Benefit Obligation approach was used for the ADL valuation.

3. Data used to run the model

a. Mortality tables

As required by the Technical Guide, assumptions provided by Eurostat regarding future life expectancy were applied. The latest assumptions are from Eurostat’s EUROPOP2023 population projections.

	2022	2030	2040	2050	2060	2070
Male	18.6	19.2	20.2	21.2	22.1	23.0
Female	21.3	22.0	23.1	24.1	25.1	26.1

Table 5: Summary Life expectancies at 66, source Eurostat

b. Entitlement statistics; other relevant statistics

4. Reforms incorporated in the model

This review was calculated with respect to legislation on 31 December 2021. Since the last valuation, legislation providing for an increase in the State Pension Age was repealed in the Social Welfare Act 2020. Therefore, a State Pension Age of 66 has been modelled. Pension reforms announced by the Minister for Social Protection in 2022 including the phasing out of the "yearly average" SPC calculation from 2025 have not been modelled as part of this valuation.

5. Specific assumptions
a. How are careers modelled?
Distributions of complete years of paid social insurance contributions for a given sex and age are evolved from the base year using “density” factors. Density factors can be thought of as the average proportion of the year that workers accrue on average, for a given age and gender. The density factors are selected based on an analysis of historical administrative data.
b. How are survivor pensions calculated?
One cannot receive multiple pension payments from different schemes in Ireland. For instance, an SPC recipient who qualifies for the maximum rate of SPC, cannot simultaneously receive a Survivor’s pension. In modelling new survivor pensions, the projected numbers of deaths of those registered under social insurance is taken as a starting point. Using departmental data, the proportion of deaths by age and gender that triggers a new survivor pension was quantified. These proportions are reduced for future calendar years based on the growth of other pensions. So, as more women qualify for SPC in their own right, the model reduces the incidence of new survivor pensions.
c. How is the retirement age modelled over time?
The legislated State Pension Age is age 66 and the modelling reflects this.
d. Other specific features of the model
The level of benefit for future SPC qualifiers is based on the SPC calculation in force on application for SPC. The approach legislated at the effective date of this review was the greater of the “yearly average” and “Total Contributions Approach” calculations. The level of benefit projected by the model is determined by associating, by sex, a proportion of the maximum rate of SPC with each level of paid record at State Pension Age. This association was based on micro-level administrative data from recent cohorts of successful SPC applicants. Projected numbers of people meeting the eligibility criteria at State Pension Age (10 years of paid contributions) are reduced to reflect “take-up” rates, based on recent administrative data – some people with an entitlement do not receive SPC. Those in receipt of invalidity pension prior to State Pension Age are modelled to automatically transition to SPC at State Pension Age (with the increased level of payment). The model also adds fixed numbers of people for those with less than 10 years’ paid contributions who receive a pro-rata pension under EU/Bilateral arrangements. A declining number of new entrants is included for those with less than 10 years’ paid contributions who receive a pro-rata pension due to a “mixed” social insurance record.

6. Any other comments
See the Actuarial Review of the Social Insurance Fund 31 December 2021, for further detail on the calculation of the accrued-to-date liability for column H.

8. Table 29 column K: Entitlements of non-resident households

No data transmitted for Column K as counterpart data for non-resident households are not significant.

9. Links to (national) publications providing further information on the pension schemes

National Publication WRT 2015 Pension

Estimates of Irish Pension Liabilities 2015 and 2018

https://www.cso.ie/en/releasesandpublications/ep/p-eipl/eipl2015/

https://www.cso.ie/en/releasesandpublications/ep/p-eipl/estimatesofirishpensionliabilities2018/

Department of Social Protection

Actuarial Review of the Social Insurance Fund 31 December 2021 as required by Regulation (EU) No 549 / 2013

2021 Review

https://www.gov.ie/pdf/?file=https://assets.gov.ie/281624/49705d28-b54a-491c-b43f-64f2db7cbfb0.pdf#page=null

2018 Review

https://www.gov.ie/pdf/?file=https://assets.gov.ie/122794/9d8f18b8-aae8-4444-ac4c-61144ef87bd7.pdf#page=null

Department of Public Expenditure Actuarial Review of Public Service Occupational Pensions in Ireland

2021 Review

https://www.gov.ie/pdf/?file=https://assets.gov.ie/108992/c64ff35c-e07c-49c3-803d-230cf88134df.pdf#page=null

2018 Review

https://www.gov.ie/pdf/?file=https://assets.gov.ie/6865/bede82e5cb1944038b7467492916315e.pdf#page=1

Pensions Authority Publications

http://www.pensionsauthority.ie/en/News_Press/News_Press_Archive/Defined_benefit_schemes-_Review_of_2016_statistics.pdf

https://www.pensionsauthority.ie/en/news_press/news_press_archive/defined_benefit_schemes_-_review_of_2018_statistics.pdf

Prescribed Guidance in Relation to Section 34 of the Pensions Act, 1990

http://www.pensionsauthority.ie/en/Trustees_Registered_Administrators/Statutory_guidance/Section_34_-_Transfer_Payments/Section_34_-_Guidance_In_Relation_To_Transfer_Payments_29_May_2014_.pdf

http://www.pensionsauthority.ie/en/Trustees_Registered_Administrators/Statutory_guidance/Section_34_-_Transfer_Payments/Section_34_of_the_Pensions_Act_1990_Version_2_Oct_2016_.pdf

ANNEX