2018 Ageing Report: Ireland Country Fiche

Department of Finance

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Chapter 1
Introduction - Overview of the Pension System

1.1 Description

The Irish pension system comprises two main pillars. The first pillar is the public social security (PSS) pay-as-you-go system which is administered by the Department of Employment Affairs and Social Protection (DEASP) and funded through social insurance contributions and tax revenue. The second pillar consists of supplementary pensions including non-funded private occupational public service (POPS) pay-as-you-go schemes[1], voluntary funded private occupational pension schemes set up by employers and voluntary personal pensions arranged by individuals.

The projections presented below relate to public pensions, that is, first pillar social security or State pensions and the public service component of the second pillar. Projections of private sector occupational and voluntary pension schemes are not provided in what follows due to lack of data.

However, such schemes play an important role in the Irish pension system. At the end of 2015 the value of Irish pension funds stood at €115.8 billion[2] (44% of GDP) up from €91.5 billion at the end of 2013. Savings in defined benefit schemes amounted to just over €71.8 billion (62% of total scheme value) with those in defined contribution schemes totalling almost €44 billion (38% of total scheme value)[3].

According to the Pensions Authority, there were 111,535 private pensioners in defined benefit schemes [4] and 299,782 members in defined contribution schemes at the end of 2016[5].

Under the Irish tax system, employee pension contributions are exempt from income tax (tax relief is given at the marginal rate of tax) though such contributions are no longer exempt from PRSI or universal social charges. Accumulated pension fund returns are largely tax free (the assets of funded pension arrangements are subject to a pension fund levy for the period 2011 to 2015) and pension drawdowns are fully taxed in the hands of the recipient[6].

1.2 Social Security Pensions

Public social security (PSS) pensions provide flat rate payments under two types of schemes - Social Insurance and Social Assistance. Social Insurance pension benefits are contributory and a function of an individual's Pay Related Social Insurance (PRSI)[7] record. Social Assistance pensions are non-contributory and are available on a means-tested basis to those with insufficient PRSI contributions. Pension payments are financed through a combination of contributions from employers, employees and the self-employed (Social Insurance schemes) and general taxation (Social Assistance pensions; Social Insurance schemes in the event of a shortfall in contributions[8]).

[1] Certain commercial state-owned organisations pension schemes (e.g. Electricity Supply Board ESB) are pre-funded.
[2] IAPF Pension Investment Survey 2015. This also includes the pension funds of commercial semi-state bodies e.g. ESB.
[3] IAPF Pension Investment Survey 2015
[4] Irish Pensions Authority. Refers to defined benefit schemes subject to the funding standard. Does not include public service employees or private defined benefit schemes that are not subject to the funding standard.
[5] Irish Pensions Authority.
[6] With the exception of the tax-free retirement lump sum which, depending on the nature of the pension vehicle can amount to 1.5 times final salary or 25% of the fund, subject to a lifetime cap of €200,000.
[7] Most employers and employees (over 16 years of age and under 66) pay social insurance (PRSI) contributions into the national Social Insurance Fund.
[8] The Social Insurance Fund is projected to fall into deficit over the long term as a result of ageing.
http://www.welfare.ie/en/Pages/Actuarial-Review-of-The-Social-Insurance-Fund-31-December-2015.aspx

In summary, qualification for contributory state pension Social Insurance schemes is based on a minimum age (66), entry into Social Insurance before a particular age (56), a requirement of at least 260 weekly social insurance contributions at the appropriate rate, and a yearly average of at least 10 contributions.[9] The qualifying conditions for the main Social Assistance scheme – the *Non-Contributory State Pension*– are age (66)[10], habitual residency and satisfaction of a means test.

In 2017, the weekly payment rate was €238.30 for the State Contributory Pension (SCP) [11] and €227.00 for the State Non-Contributory Pension (SNCP)[12], a five euro increase from the personal rate in 2016.[13] Additionally, it is planned to increase all maximum weekly pension payments including SCP and SNCP, Widow's, Widower's or Surviving Civil Partner's and Disablement Pension by €5 with proportionate increases for those on reduced rates of payment from March 26th 2018. These represent the maximum personal rates paid to persons under 80 years old[14]. Additional payments are made where recipients have qualified adult and qualified child dependants, with higher rates also payable to those aged 80 and over. Reduced rates are payable to those with incomplete social insurance records or those who have insufficient contributions but means below certain thresholds.

In addition to the core payments, a range of non-cash supplementary benefits are available to State pension recipients such as free travel, free television licence, electricity/gas allowance and telephone allowance, subject to certain qualifying conditions. Subject to a means test persons may also qualify for a weekly fuel allowance of €22.50 per week for 26 weeks per year[15]. Persons living alone may qualify for an additional living alone allowance of €9.00 per week.

Social security pensions are not taxed at the point of payment as they are below the minimum tax threshold. However, where appropriate, such payments are included in income tax assessments in conjunction with any other income and taxed accordingly.

1.3 Private Occupational Public Service (POPS) Pensions

Second pillar Private Occupational Public Service (POPS) Pensions take the form of *defined benefit* schemes. For existing retirees and for staff hired up to end-2012, these schemes deliver or promise "final salary" benefits. More precisely, these benefits (principally pension and retirement lump sum) are calculated by reference to the following two factors:

- salary level at retirement time ("pensionable remuneration");
- length of service (a reckonable service ceiling of 40 years applies).

Public servants hired up to 5 April 1995 in general accrue retirement benefits as follows:

- pension of 1/80th of final salary per year of service (maximum pension 40/80ths, i.e. half pay);
- retirement lump sum of 3/80ths of final salary per year of service (maximum lump sum 120/80ths).

[9] Contributions paid or credited from 1953 or from the date of entry into social insurance. A yearly average of 10 contributions entitles you to a minimum pension, a yearly average of 48 contributions is needed to get the maximum pension.
[10] The current minimum qualifying state pension age is 66 years of age. The state pension age will increase to 67 years of age in 2021(for persons born between 1st January 1955 and 31st December 1960 inclusive) and 68 years of age in 2028 (for persons born after 1st of January 1961).
[11] Rate based on a person making 48 or more average yearly contributions and qualifying for a SCP from 1st September 2012.
[12] The SNCP is a payment for persons aged over 66 who do not qualify for the SCP or who only qualify for a reduced contributory pension based on their insurance record. The weekly payment rate of €227 is based on a person who has a weekly means of up to €30. After that, the pension is reduced by €2.50 each week for every €2.50 of means.
[13] Increase in personal rates from 10 March 2017.
[14] See section 5 for more detail
[15] This is paid under the National Fuel Scheme to help with the cost of heating the home during the winter months. The 2016-2017 Fuel Allowance season started on Monday 3 October 2016 and ended on Friday 31 March 2017.

These pre-1995 public servants usually pay a lower rate of Pay Related Social Insurance (PRSI) and do not qualify for the full range of Social Insurance benefits; in particular they do not qualify for the State Contributory Pension (SCP).

Public servants hired on or after 6 April 1995 up to end-December 2012 have the same retirement lump sum accrual as their pre-1995 counterparts. However their pension accrual arrangements, though still based on final salary and featuring a 40-year reckonable service limit, are somewhat different. In general these post-1995 recruits accrue occupational pension as follows:

- 1/200th of final salary per year of service up to a salary point ceiling of 3.33 times the value of the SCP (ceiling equal to approximately €41,500 in 2017);
  Plus
- 1/80th of final salary per year of service on the portion of final salary (if any) above 3.33 times the value of the SCP.

The lower public service pensions of these post-1995 recruits, compared with those of earlier-hired counterparts, are described as "integrated" or "co-ordinated" pensions. These post-1995 personnel usually pay full PRSI and qualify for the SCP; on that account the calculation of their occupational public service pensions is moderated downward, via the 1/200 accrual rate on the first half of earnings. The overall "integrated" pension outcome ensuing for such persons typically means that they receive both the SCP (at full or reduced rate) and a public service occupational (POPS) pension.

Public servants hired from 1 January 2013 onward are members of the Single Public Service Pension Scheme ("Single Scheme"). This pan-public service scheme is a radical departure from the earlier "pre-existing" public service pension schemes, notably on account of the fact that members accrue pension benefits based on career average revalued earnings, rather than on final salary (see next section for further details on the Single Scheme).

Compulsory retirement age thresholds vary considerably across different groups of existing public servants. In general, for those public servants who joined prior to 1 April 2004 the compulsory retirement age is 65 years; for those who joined between 1 April 2004 and 31 December 2012 there is no compulsory retirement age; for those who joined since 1 January 2013 the compulsory retirement age is 70 years[16]. Mandatory retirement ages across the public service are currently under review[17].

Increases in public service pension rates have historically been linked to the pay increases of equivalent public service grades, however, this non-statutory linkage lapsed in 2010 when the pay of public servants was reduced during the financial emergency.

For members of Single Public Service Pension Scheme (Single Scheme), post-retirement pension increases are linked to the consumer price index (CPI), rather than pay increases.

The Public Service Pensions (Single Scheme and Other Provisions) Act 2012 provided that post-retirement pension increases for existing public service pension schemes could be linked to the Consumer Price Index (CPI) in the event that the Minister for Public Expenditure and Reform were to make an order to that effect, and provided such order received ratification by Parliament. However,

[16] Some occupations - for example, the police, firefighters and the Defence Forces - have provisions for much earlier retirement generally and/or on grounds of illness.

[17] An Interdepartmental Working Group was established early in 2016 to examine the issues arising from prevailing retirement ages in the public service in the context of the current age of entitlement to the SCP. Their report is available here.

the recently agreed Public Service Stability Agreement 2018-2020, if ratified, commits the Government to not triggering such linkage for "pre-existing" pension schemes for the duration of this agreement[18].

POPS pensions are not subject to PRSI but they are subject to both income tax and the Universal Social Charge (USC)[19].

Table 1: Public sector statutory retirement age and earliest retirement age

	2016	2020	2030	2040	2050	2060	2070
with 20 contributory years*							
statutory retirement age	66	66	68	68	68	68	68
earliest retirement age	66	66	68	68	68	68	68
with 40 contributory years*							
statutory retirement age	66	66	68	68	68	68	68
earliest retirement age	66	66	68	68	68	68	68
*identical for men and women							

In the social security pension system the statutory retirement age and earliest retirement age are both 66 years in 2017[20]. This will rise to 67 in 2021 and to 68 in 2028. There is no penalty in case of earliest retirement age or a bonus in case of later retirement. However, early retirees may not meet contribution requirements.

1.4 Recent pension reform measures included in the projections

Public social security pensions (PSS)

The State Pension Transition was abolished in 2014[21], while the qualifying age for State pensions increased to 66 in 2014, and will rise to 67 in 2021 and then to 68 in 2028[22]. Separately the criteria to qualify for a contributory pension have been amended to increase the minimum number of paid contributions required for SCP qualification to 520 in April 2012.

The National Pensions Framework (March 2010) provides for a 'total contributions approach' to replace the current average contributions test for the contributory State pension from 2020 onwards[23]. This is designed to ensure that the level of pension payments will be directly proportionate to the number of social contributions paid by the person over their working life, thereby removing some of the anomalies associated with the current averaging approach.[24]

[18] The Public Service Stability Agreement 2018-2020 was published at the conclusion of the public service pay talks between representative members of Public Service Trade Unions and Government Officials.

[19] The Universal Social Charge (USC) is a tax on income that replaced both the income levy and the health levy (also known as the health contribution) on 1 January 2011. You pay the USC if your gross income is more than €13,000 per year. Once your income is over this limit, you pay the relevant rate of USC on all of your income.

[20] Ireland does not have an upper-bound statutory retirement age. The figures reported in table 1 refer to the eligibility age for social security pensions.

[21] This payment is no longer paid where a person reaches 65 on or after 1 January 2014.

[22] Our pension model assumes that the eligibility ages for other schemes e.g. invalidity pension, illness benefit etc. will increase in a related fashion e.g. from 2021 onwards invalidity pensions will be available to those aged 66 and under.

[23] From 2020, 30 years (1,560 contributions) will qualify a person for the maximum level of SCP. A person will accumulate 1/30th of a pension for each year of PRSI contributions / credits up to a maximum of 30/30ths. A qualifying condition of 520 paid contributions (10/30ths) is also required. Also, the maximum number of credits (currently unlimited) which can be counted for pension purposes will be restricted to 520 weeks (i.e. 10 years).

[24] Under the current approach, pension rates are not proportionate to the level of an individual's contributions. For instance, an individual who has 48+ yearly average PRSI contributions receives a €238.30 weekly personal SCP rate while someone who contributed 20 yearly average PRSI contributions receives a €202.80 weekly personal SCP rate

Private occupational public service pensions (POPS)

The Single Public Service Pension Scheme (Single Scheme) is a defined benefit pension scheme, with retirement benefits based on career-average earnings rather than final salary. The Single Scheme applies to all new entrants to the public service from 1 January 2013 (including civil servants, teachers; healthcare workers, local government employees, police, military personnel, police, parliamentarians, judges).

The main features of the scheme include:

- Benefits based on career average earnings rather than final salary - individuals accrue annual pension and lump sum 'referable amounts' each year. These are 'banked' and revalued annually until retirement, in line with inflation increases (Consumer Price Index), to produce the pension and lump sum on retirement.
- A new minimum pension age of 66, linked to the State Pension age (rising progressively to 67 in 2021 and 68 in 2028).
- A maximum retirement age of 70.
- A facility for early retirement from age 55 on a cost-neutral (actuarially reduced) basis.
- Post-retirement pension increases for Single Scheme members are linked to CPI rather than wage movements of existing public servants.

Department of Public Expenditure and Reform estimates suggest that the long-term annual savings from the introduction of this scheme will amount to €1.8 billion, with over a half of those savings due to changes to indexation (CPI linkage), almost a third due to the impact of career averaging, and the remainder arising from the increase in pension age.

A significant and growing reduction in longer-term pension costs is therefore envisaged once this cohort begins to retire.

1.5 Constant Policy Assumptions

No formal indexation mechanism exists in the Irish social security system – changes to social security are determined each year as part of the budgetary process. Currently, the value of the State contributory pension is approximately 33%[25] of average earnings. However, payments have historically grown in line with whole-economy average earnings. Thus, for the purpose of this exercise, PSS pensions are assumed to grow in line with nominal earnings (inflation plus productivity) from 2019 onwards. [26]

For this exercise, we have incorporated the increases in social security rates announced in Budget 2017 and Budget 2018 that were discussed in Section 1.1.1 above.

The National Pensions Framework (March 2010) provides for a 'total contributions approach' to replace the current average contributions test for State Pension (Contributory) from 2020 onwards. Although not formally legislated for, as it is stated policy intention this is used as a working assumption driving the first pillar of the pension model. Under the 'total contributions approach' the level of pension paid will be directly proportionate to the number of social insurance contributions made by a person over his or her working life. This will remove the current anomaly whereby some people qualify for higher pension payments even though they may have fewer contributions (but a higher average) than others who do not qualify, or qualify for a lower pension, due to the average contribution test.

[25] Average earnings based on data from Q2 2017 EHECS Earnings and Labour Costs release. Value of SCP based on maximum personal rate per week introduced in March 2017.

[26] This is a technical assumption made for the purpose of this exercise to maintain consistency with previous Ageing Reports.

Chapter 2
Demographic and labour force projections

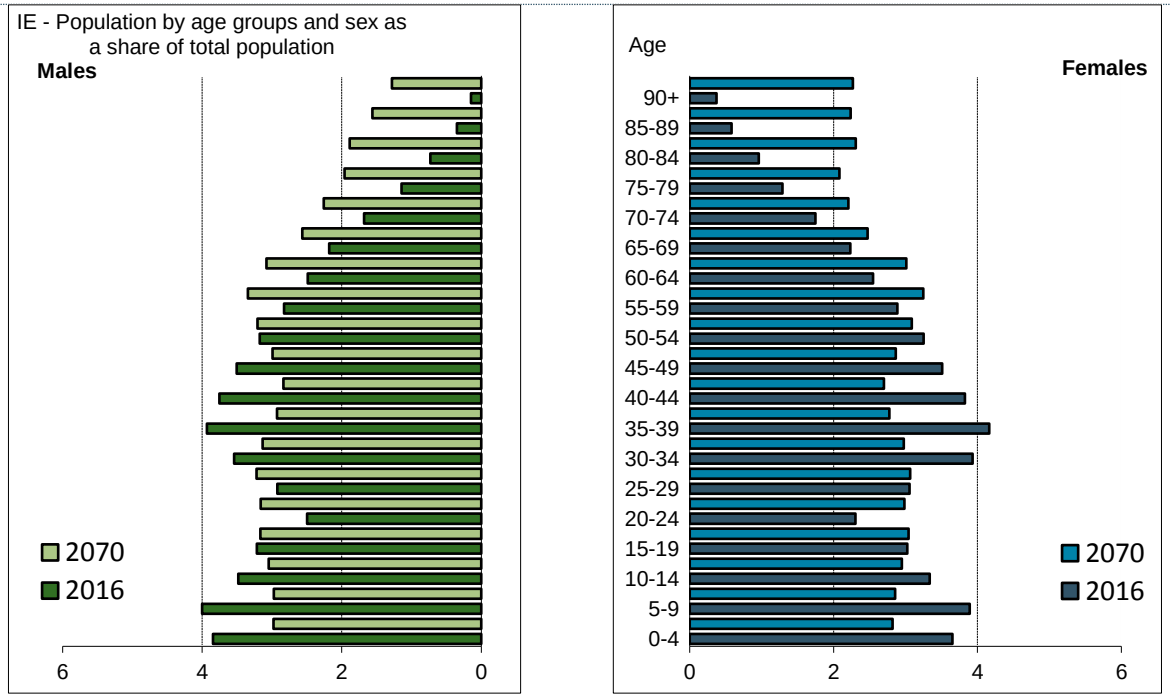
This section outlines the assumed demographic and labour force changes facing Ireland over the 2016-2070 period[27]. The Eurostat 2015-based demographic projections used here assume a more positive migration profile than the EUROPOP 2013 projections used in the 2015 Ageing Report and are more reflective of Ireland's current migration pattern. Between 2010 and 2014, Ireland experienced net outward migration. Following this period of net outward migration, net migration turned positive in 2015 and accelerated further in 2016 and 2017[28]. In contrast, EUROPOP 2013 projected an almost constant continuation of outward migration which considerably reduced the projected population levels and as a result was considered implausible.

While the 2015-based projections assume a more positive migration profile than the EUROPOP 2013 projections, the total population projections in the 2015-based exercise do not take into account the 2016 Census results which showed net outward migration was overestimated for the years April 2012-April 2016. [29]

Labour force projections along with the associated macroeconomic assumptions are those produced by the Commission's Cohort Simulation Model (CSM). These projections are used as exogenous inputs in the pension model.

2.1 Demographic Developments

Figure 1: Male and female population by age group as a share of total population



Source: Commission services

[27] These are not fully consistent with the Department of Finance's short-to-medium term projections set out in Budget 2018.
[28] CSO Population and Migration Estimates, April 2017.
[29] The population in 2016 used in the 2018 Ageing Report is approximately 51,000 below the revised population according to the Population and Migration Estimates released by the Central Statistics Office (CSO) in September 2017.

Table 2 gives an overview of the assumed evolution of key population variables consistent with the EUROSTAT 2015 demographic projections. On this basis, Ireland's demographic profile is set to change significantly over the forecast period. The share of the population aged 65 and over is set to nearly double from 13.4% in 2016 to a peak of 25.9% in 2054 before falling slightly to 24.2% in 2070.

Table 2: Evolution of the main demographic variables[30]

	2016	2020	2030	2040	2050	2060	2070	Peak year
Population (000)	4689*	4872	5158	5411	5707	5905	6042	2070
Population growth rate (% per annum)	0.9	0.8	0.5	0.5	0.5	0.3	0.2	2017
Old age dependency ratio (pop65+/pop15-64)	20.9	23.1	29.1	37.1	45.7	44.2	41.2	2053
Ageing of the aged (pop 80+/pop65+)	23.5	23.4	26.9	29.7	33.1	42.2	46.0	2067
Men - Life expectancy at birth	79.5	80.1	81.5	82.9	84.1	85.3	86.4	2070
Men-life expectancy at 65	18.5	18.9	19.9	20.9	21.8	22.7	23.5	2069
Women-life expectancy at birth	83.5	84.2	85.5	86.9	88.1	89.2	90.3	2070
Women-life expectancy at 65	21.1	21.6	22.7	23.8	24.8	25.7	26.6	2070
Men-survivor rate at 65+*	88.7	89.1	89.8	90.5	91.0	91.6	92.0	2070
Men-survivor rate at 80+	82.4	82.9	83.9	84.9	85.7	86.4	87.1	2070
Women-survivor rate at 65+	90.7	91.1	91.9	92.5	93.1	93.6	94.1	2070
Women-survivor rate at 80+	85.3	85.9	87.0	87.9	88.8	89.5	90.3	2070
Net Migration ('000)	14.8	9.9	7.5	11.4	13.7	12.2	10.8	2017
Net Migration over population change	0.4	0.2	0.3	0.4	0.5	0.8	0.7	2064

Source: Commission Services *Population based on Eurostat projections and not 2016 Census release **Men-Survivor rate at 65+ is the product of (1- mortality rate) for all men aged 65+

In contrast, the share of the working age population (WAP defined for these purposes as those aged 20-64) is projected to gradually decline during the period, from approximately 58% in 2016 to 51% in 2050[31]. Reflecting these changes, the old age dependency ratio is set to increase from approximately 21% in 2016 to a peak of 46% in 2053 before falling to 41% by 2070.

Reflecting EUROSTAT migration assumptions, the population is set to grow by around 1% on average each year until 2020, before growing at 0.5% on average per annum until 2050, reaching 5.7million. From 2050, population growth is expected to slow gradually rising to 5.9 million in 2060 before reaching 6.0 million in 2070.

The total population in 2060 of 5.9 million is nearly 650,000 or 12% higher than the EUROPOP2013 projections but is over 660,000 or 10% lower than the population in the EUROPOP2010 projections. This clearly illustrates the difficulties in demographic forecasting in an Irish context.

Such shifts in Ireland's demographic profile would have significant implications for the evolution of the public finances. Foremost amongst these is a substantial rise in age-related public expenditure as a larger share of the population move into age brackets requiring such spending.

[30] Based on Eurostat 2015-based population projections.

[31] From 2050 onwards, the share of WAP is projected to increase reaching 53% in 2070.

2.2 Labour Force Developments

	2016	2020	2030	2040	2050	2060	2070	Peak Year
Labour Force Participation rate 55-64	61.0	61.9	64.8	66.2	64.3	65.8	65.8	2036
Employment rate for workers aged 55-64	57.2	59.3	61.8	63.1	61.3	62.7	62.6	2036
Share of workers aged 55-64 on the total labour force (55-64)	93.8	95.8	95.2	95.3	95.3	95.2	95.2	2021
Labour Force Participation rate 65-74	15.5	16.5	21.6	23.0	22.3	21.0	23.0	2045
Employment rate for workers aged 65-74	15.3	16.3	21.4	22.8	22.2	20.9	22.8	2045
Share of workers aged 65-74 on the total labour force (65-74)	98.6	99.0	99.1	99.2	99.3	99.3	99.2	2051
Median age of the labour force	40	42	43	41	40	41	41	2025

Table 3: Participation rate, employment rate and share of workers for the age groups 55-64, 65-74
Source: Commission Services

Table 4a: Labour market entry age, exit age and expected duration of life spent at retirement (Men)

	2017	2020	2030	2040	2050	2060	2070	Peak Year
Average effective entry age (CSM) (I)	65.0	65.3	66.0	66.0	66.0	66.0	66.0	2035
Duration of retirement (life expectancy at average effective exit age)	18.6	18.9	19.1	20.0	20.9	21.8	22.7	2070
Percentage of adult life spent at retirement (Pension Duration: life expectancy -18)	28.3	28.6	28.4	29.4	30.3	31.2	32.1	2070
Early/late exit	1.6	1.3	1.5	1.3	1.0	1.2	0.9	2028

Source: Commission Services

Table 4b: Labour market entry age, exit age and expected duration of life spent at retirement (Women)

	2017	2020	2030	2040	2050	2060	2070	Peak Year
Average effective entry age (CSM) (I)	64.1	65.1	66.1	66.1	66.1	66.1	66.1	2032
Duration of retirement (life expectancy at average effective exit age)	22.1	21.6	21.8	22.9	23.9	24.8	25.7	2070
Percentage of adult life spent at retirement (Pension Duration: life expectancy -18)	32.4	31.4	31.2	32.3	33.2	34.0	34.8	2070
Early/late exit	2.5	1.7	1.6	1.4	1.0	1.0	0.9	2017

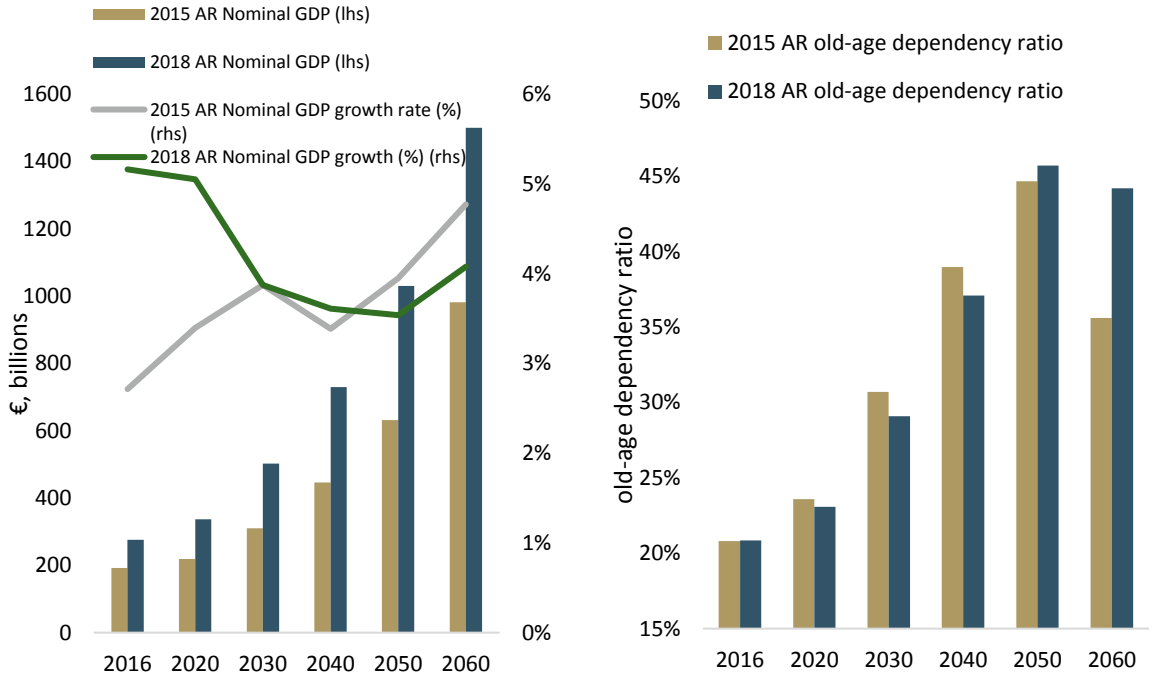
Source: Commission Services

Table 3 highlights the age cohorts most influenced by reforms to the statutory retirement age (65-74) and those impacted by labour market activation policies aimed at prolonging working life (55-74). Output from the CSM model suggests a steady improvement in labour force participation rates amongst the 55-64 and 65-74 age cohorts throughout most of the forecast period. For the age group 55-64 the projected labour force participation rate in 2060 has been revised upwards by 1.2pp since the last Ageing Report (to 65.8). In addition, the average effective male exit age is set to increase from 65 in 2017 to 66 in 2070 while the proportional increase in exit age for women is greater, an increase from 64 in 2017 to 66 in 2070. These improvements are consistent with recent pension reform efforts to prolong working life.

While the above changes will help to partially offset the increase in pension expenditure associated with the lengthening in duration of retirement (owing to higher life expectancy), the old-age dependency ratio is set to increase substantially over the forecast period. As discussed in Section 2.1, the old-age dependency ratio is projected to increase from 21% in 2016 to 41% in 2070.The old-age dependency ratio in 2060 of 44.2% is approximately 8.6 pp. higher than projected in the 2015 Ageing Report (AR 15).

Revisions to the macro outlook alone since the last Ageing Report imply the level of 2060 GDP is now some 53% (or €518 billion) higher than was assumed in AR 2015[32]. The significant increase in the level of GDP relative to AR 15 assumptions, serves to reduce pension ratios throughout the forecast horizon.

Figure 2: Comparison of AR15 and AR18 GDP and demographic projections



Source: CSO, Department of Finance, Ageing Report 2015

[32] This is discussed in more detail in chapter 4.

Chapter 3
Pension projection results

3.1 Extent of the coverage of the pension schemes in the projections

The projections presented below cover the following components of the pension system:

Contributory Public Pensions

Contributory Public Pensions cover old-age, disability and survivors' pensions under the social insurance system and the public service component of the second pillar (POPS). It also includes other legacy pension schemes such as contributory pensions for those who contributed before 1953[33].

Non-earnings related Public Pensions

Non-earnings related public pensions cover non-contributory old-age and early retirement, disability and survivor pensions under the Social Assistance system (non-earnings means-tested basic pensions). This component accounted for 1.1% of GDP in 2016.[34]

Table 5: Eurostat (ESSPROS) vs. Ageing Working Group definition of pension expenditure (% GDP)

		2007	2008	2009	2010	2011	2012	2013	2014
1.	Eurostat total pension expenditure	5.0	5.9	6.7	6.8	6.8	6.9	6.8	6.3
2.	Eurostat public pension expenditure	3.4	3.9	4.6	4.7	4.6	4.6	4.7	4.4

Source: Eurostat

3.2 Overview of projection results

Tables 6 and 7 present the main results of the pension projections exercise for Ireland. A range of technical assumptions covering demographic and labour force developments underpin the results, the details of which are provided in section 2.

As can be seen from the below table, spending on PSS and POPS pensions is projected to increase from around 5.0% in 2016 to 7.4% in 2050 before falling back to 6.6% in 2070. Compared with the 2015 projections, 2060 expenditure levels are 1.2 pp. of GDP lower (nominal pension expenditure is 31% higher while nominal GDP is some 53% higher)

The profile of these two components of total pension expenditure differs significantly. PSS pension spending as a proportion of GDP remains broadly stable until 2023, increasing from 3.8% to 3.9% of GDP, before increasing steadily between 2023 and 2057 to 6.3% and then falling moderately from 2057 until the end of the forecast period, with PSS pension expenditure in 2070 of 6.0%.

In contrast, POPS pension expenditure increases from 1.2% in 2016 to a peak of 1.6% in 2041, before falling to 1.4% in 2050 and further to 0.6% of GDP in 2070. This fall can be attributed to several factors. These include the shift towards 'integrated' pensions over the forecast horizon[35]. As a result, there is

[33] The pre-53 pension is payable to those who commenced insurable employment before 1953 and who had at least five years paid insurance.

[34] Non-earnings related public pension schemes are SNCP, Pre-Retirement Allowance (PRETA), Disability Allowance, Blind Pension, Widow's, Widower's or Surviving Civil Partner's (Non-Contributory) Pension, Deserted Wife's Allowance, Carer's Allowance.

[35] As outlined in Section 1.1.2, public servants hired before 6th April 1995 pay a lower rate of PRSI and do not qualify for the SCP. As such their pension payments come entirely from POPS pension expenditure. Public servants hired after 6th April 1995 receive an 'integrated' pension, whereby they receive the SCP pension with the remaining proportion of their pension coming from occupational pension expenditure. As a result, the stock of POPS pensions shifts towards 'integrated' pensions over the forecast period.

a substantial reallocation of expenditure from POPS to PSS pensions over the projection period. The fall is also driven by the introduction of the Single Public Service Pension Scheme for new public service entrants as discussed in section 1.3.[36]

Therefore, the rise in overall pension expenditure as a share of GDP is entirely driven by PSS pensions[37].

Table 6 - Projected gross and net pension spending and contributions (% of GDP)

	2016	2020	2030	2040	2050	2060	2070	Peak Year
Gross public pension expenditure (PSS)	3.8	3.8	4.3	5.2	6.1	6.3	6.0	2057
Private occupational pensions expenditure (POPS)	1.2	1.3	1.5	1.5	1.4	0.9	0.6	2041
Gross Total Pension Expenditure*	5.0	5.1	5.8	6.7	7.4	7.2	6.6	2053
Public Pension Contributions**	3.3	3.3	3.3	3.3	3.3	3.3	3.3	n/a
Total Pension Contributions**	3.3	3.3	3.3	3.3	3.3	3.3	3.3	n/a

Note: Figures may not sum due to rounding. *includes PSS and POPS pension expenditure ** PRSI revenue from private sector and public sector. Held as a fixed proportion of GDP over horizon by assumption.

The projected value of PRSI contributions (employer, employee and self-employed) is assumed to be constant over the entire timeframe at the 2016 rate of 3.3% of GDP. It should be noted that PRSI revenue e.g. employer and employee contributions, is used to fund a wider range of social insurance benefits beyond the component relating solely to PSS pensions[38]. Projecting pension provisioning on the basis of PRSI contributions therefore serves to overestimate the degree of public pension contributions[39].

Table 7 - Projected PSS expenditure by scheme (% of GDP)

[36] In preparing this material, the Department of Public Expenditure and Reform (DPER) has relied upon data supplied by third parties. Whilst reasonable care has been taken to gauge the reliability of this data, DPER provides no guarantee as to the accuracy or completeness of this data and accepts no responsibility for any errors or misrepresentations in the data made by any third party. In practice, actual experience is likely to differ from best estimates due to factors such as changes in the economic environment, demographics, regulation, operational and other factors. It must therefore be recognised that actual results will differ, perhaps materially, from those inherent in the values given.

[37] Projected tax revenues relating to both types of pensions are not included in the model and therefore net pension expenditure is not provided in the projections due to data constraints. The distortionary impact of this omission however is limited since PSS pensions are not taxed as they do not reach the minimum tax threshold.

[38] PRSI revenue is used to fund the Social Insurance Fund (SIF). In addition to pay related PSS pensions, this is also used to fund jobseekers benefit, health and safety benefit, maternity benefit, adoptive benefit etc. According to the 2015 SIF Actuarial Review, pension related expenditure is projected to continue to be the predominant component of SIF expenditure rising from 70% of expenditure in 2016 to approximately 80% by 2071.

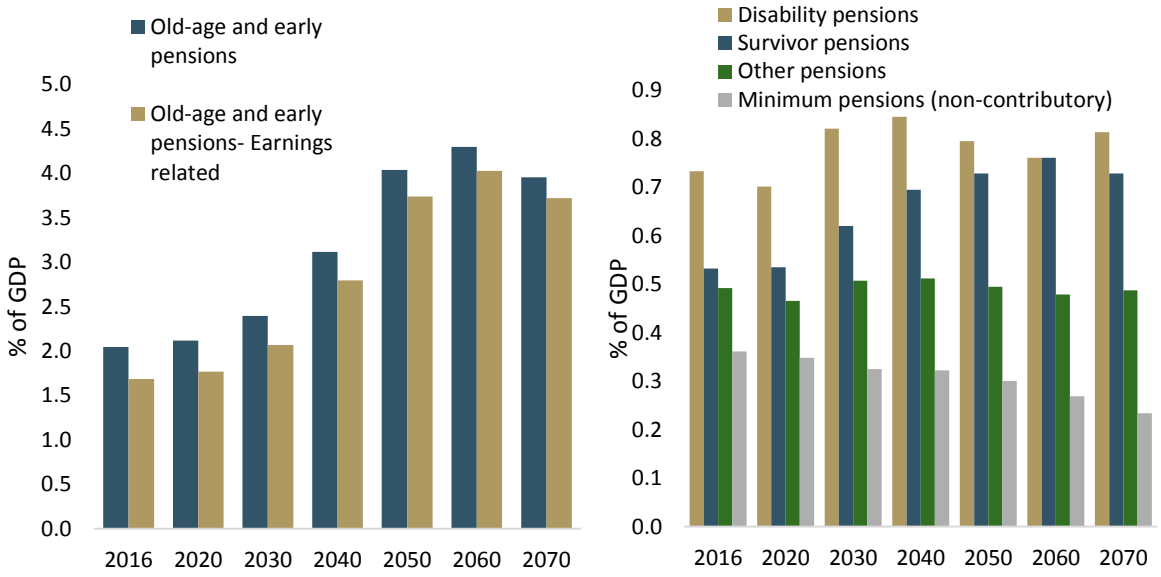
[39] However, PRSI contributions are assumed to stay constant as a share of GDP despite the fact that contribution histories and participation rates are set to increase over the forecast period. As a result, this assumption is likely to underestimate public pension contributions.

	2016	2020	2030	2040	2050	2060	2070	Peak Year
Public Pensions (PSS)	3.8	3.8	4.3	5.2	6.1	6.3	6.0	2057
Of which								
Old age and early pensions (% GDP)*	2.0	2.1	2.4	3.1	4.0	4.3	4.0	2057
of which earnings related	1.7	1.8	2.1	2.8	3.7	4.0	3.7	2058
Minimum pensions (non-contributory) i.e minimum income guarantee for people above 65	0.4	0.3	0.3	0.3	0.3	0.3	0.2	2016
Disability Pensions (% GDP)**	0.7	0.7	0.8	0.8	0.8	0.8	0.8	2040
Survivors Pensions (% GDP) ***	0.5	0.5	0.6	0.7	0.7	0.8	0.7	2059
Other Pensions (% GDP) ****	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2038

Note: *Includes SCP (includes State transition pension in 2016 only) **Includes invalidity pension ***Includes widows', widower's or surviving civil partner's contributory pension ****Includes carer's, illness and deserted wife's benefit.

Table 7 disaggregates the overall pension projections by component. The bulk of the increase in total expenditure is attributable to old age and early pensions. This component is set to increase by 1.9 p.p. of GDP between 2016 and 2070. This increase is driven by both demographics and the effect of longer contributory periods, amongst women in particular.

Figure 3: Projected PSS expenditure by scheme (% of GDP)



Source: Department of Finance

Despite a considerable increase in the dependency ratio over the forecast period, spending on non-contributory old-age pensions is set to decline while expenditure on survivor's pensions is set to increase by 0.2 p.p of GDP over the forecast horizon. However, this relatively constrained growth is largely compositional as more individuals are assumed to transition to receipt of the State contributory pension over the forecast horizon.[40] For instance, the share of the female population of state pension age receiving a contributory state pension is set to increase significantly from around 43% to around 73% over the horizon reflecting sustained improvements in female participation.

Disability pensions are projected to increase from 0.7% in 2020 to 0.8% in 2030. This rise is largely due to the stepped increase in the statutory retirement age from 66 at the beginning of the forecast period, to 67 in 2021 and to 68 in 2028 as the model assumes that eligibility ages for schemes such as

[40] It is not possible to get the SNCP or widows, widowers or surviving civil partners pension at the same time as the SCP.

invalidity pension increase proportionately[41]. The increase in this component will partially offset some of the projected benefits arising from recent pension reforms.

Other pensions remain relatively steady throughout the forecast period as the share of the population by age cohort receiving these benefits is assumed to remain constant.

3.3 Description of main driving forces behind the projection results

Decomposing the spending projections reveals that much of the projected increase in public pension expenditure out to 2050 is attributable to Ireland's changing demographic profile, where the effect of the dependency ratio is shown to dominate over other drivers (Table 8). As expected, the increasing proportion of elderly persons compared to the working population places the most stress on spending.

Demographic factors (captured by the strong positive contribution from *the dependency ratio effect*), are partially offset by the projected fall in the ratio of pension beneficiaries to the population (a negative *coverage ratio effect*) out to 2050 (this is partially driven by the increases in the state pension age in 2021 and 2028.) The old age dependency ratio peaks in 2053 resulting in a negative dependency ratio effect thereafter.

Reflecting the effect of social welfare rate increases below the implied growth in inflation and productivity in the initial years of the projection period [42], the restructuring of personal rate bands in the SCP scheme in 2012[43] and the introduction of the TCA in 2020, the benefit ratio (the average pension payments to GDP per hour worked) falls out to 2030. This is captured in Table 8 by the initial negative benefit ratio effect.

[41] For example, in 2021 when the statutory retirement age increases from 66 to 67 the invalidity pension eligibility age will increase from 65 to 66.

[42] The projections incorporate social welfare rate increases announced in Budget 2016, 2017 and 2018. From 2019 rates are indexed by inflation and productivity. This is a technical assumption for the purpose of this exercise to maintain consistency with previous Ageing Reports.

[43] From 1st September 2012, the SCP rate band associated with 20-47 yearly average PRSI contributions was replaced by distinct rates associated with 20-29, 30-39 and 40-47 yearly average contributions. Individuals who qualified for pensions before 1st September 2012, continued on the same rate bands as previously. Individuals qualifying after 1st September 2012 are subject to the increased number of rate bands. For example, if an individual had 27 average yearly contributions and qualified for a pension before the September 2012 cut-off, they would receive a rate associated with 20-47 contributions (€238.30 in 2017).On the other hand, an individual who qualified for the SCP pension after 1st September 2012 and who had the same contribution history of 27 average yearly contributions would get a lower rate associated with 20-29 average yearly contributions (€202.80 in 2017).

Table 8 - Factors behind the change in public pension expenditures between 2016 and 2070 using pension data (in percentage points of GDP) –pensions/pensioners

	2016-20	2020-30	2030-40	2040-50	2050-60	2060-70	2016-70	Average annual change
Public Pensions (PSS) to GDP	**0.0**	**0.5**	**0.8**	**0.9**	**0.2**	**-0.3**	**2.2**	**0.04**
Dependency ratio effect	0.4	1.0	1.1	1.2	-0.1	-0.5	3.1	0.06
Coverage ratio effect	-0.1	-0.4	-0.2	-0.2	0.2	0.1	-0.6	-0.01
Coverage ratio old-age	0.0	-0.2	0.1	0.1	0.3	-0.1	0.2	0.00
Coverage ratio early-age	-0.2	-0.4	0.1	0.6	-0.4	-0.3	-0.5	-0.01
Cohort effect	-0.2	-0.4	-1.0	-1.9	0.5	1.2	-1.8	-0.04
Benefit ratio effect	-0.2	-0.1	0.0	0.0	0.0	0.0	-0.1	0.00
Labour market/Labour intensity effect	-0.1	0.0	-0.1	-0.1	0.1	0.1	-0.1	0.00
Employment ratio effect	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.00
Labour intensity effect	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
Career shift effect	0.0	-0.1	-0.1	0.0	0.1	0.0	-0.1	0.00
Residual	0.0	-0.1	0.0	0.0	0.0	0.0	-0.2	0.00

Note: See annex 2 for calculation methodology

Table 9 - Replacement rate at retirement (RR) and benefit ratio by pension scheme (in %)

	2016	2020	2030	2040	2050	2060	2070
Public Scheme (RR)(PSS)	32.8	31.6	32.0	32.3	32.2	32.0	32.1
Public Scheme (Benefit Ratio) (PSS)	26.8	26.3	26.4	26.5	26.6	26.8	26.8
Public Scheme old-age earnings related (RR)	36.6	34.3	34.7	34.8	34.4	34.4	34.4
Public Scheme old-age earnings related (Benefit Ratio)	28.8	27.8	27.5	27.5	27.4	27.5	27.7

Note: All RRs reported on a new pensions flow basis. BRs reported on a stock of pensioners basis. Public scheme covers old-age earnings-related, disability, survivors, non-contributory and other pensions.

In aggregate, the benefit ratio indicates that average public pensions amount to just over a quarter of average earnings, with this relationship forecast to remain quite steady throughout the forecast period[44]. The replacement rate at retirement (average new public pension/average wage at retirement) declines slightly from 2016 to 2020 on account of the shift to TCA approach (reducing average pensions) and social welfare rate increases below the implied growth in inflation and labour productivity. However, improvements in contribution histories partially offsets this, resulting in an essentially flat profile from 2030 onwards[45].

Public scheme (PSS) old age earnings-related coverage is forecast to increase substantially throughout the forecast period, with females seeing a particularly strong increase over the forecast horizon. This is driven by the improving contribution histories of females, with a rising proportion shifting from non-contributory to earnings-related pensions. The improvement in contribution histories also leads to recipients moving into more generous SCP rate bands over the projection period.

[44]Benefit ratio calculated as the average pension over the Commission's estimate of the economy wide average wage. However, it is closer to one third of average earnings from the CSO's Earnings and Labour Costs (EHECS) release. Table 9 is replicated on an EHECS basis in the annex.

[45] Average wage of individuals aged 60 and over is used as a proxy for the economy wide average wage at retirement when calculating replacement rates.

Table 10 – System Dependency Ratio and Old-age Dependency Ratio

	2016	2020	2030	2040	2050	2060	2070
(1) Number of pensioners (millions)*	0.91	1.00	1.20	1.46	1.69	1.79	1.79
(2) Employment (millions)**	2.01	2.11	2.21	2.29	2.27	2.32	2.46
(3) Pension system dependency ratio (SDR) (1/2)	45.4	47.3	54.0	63.8	74.6	77.1	73.0
(4) Number of people aged 65+ (millions)	0.6	0.7	0.9	1.2	1.5	1.5	1.5
(5) Working age population 15-64 (millions)	3.0	2.9	2.9	3.3	3.2	3.4	3.5
(6) Old age dependency ratio (ODR) (4/5)	20.9	23.1	29.1	37.1	45.7	44.2	41.2
(7) System efficiency (3/6)	2.2	2.1	1.9	1.7	1.6	1.7	1.8

Source: Commission Services. * This includes pension recipients 65 and under *15-74 basis

Demographic pressures will cause the pension system dependency ratio (SDR - number of pensioners/total employment) to rise substantially between 2016 and 2060. The number of pensioners is set to nearly double between 2016 and 2070, while total employment is set to increase by 22% over the same period.

As the old age dependency ratio (ODR) is set to almost double over the forecast horizon, the overall pension system efficiency ratio is projected to decline over most of the projection period falling from 2.2 in 2016 to 1.8 in 2070 (a decrease of nearly 20%). Recent policy reforms such as the increase in the statutory retirement age in 2021 and 2028 act to partially offset the increase in the old-age dependency ratio.

Table 11a – Pensioners (public schemes) to inactive population ratio by age group (%)

	2016	2020	2030	2040	2050	2060	2070
Age Group (<54)	11.5	11.2	11.7	12.0	11.5	11.7	11.9
Age Group (55-59)	69.3	68.4	73.5	76.9	73.9	74.3	74.1
Age Group (60-64)	57.5	59.5	63.0	67.0	63.8	64.8	65.1
Age Group (65-69)	105.0	105.9	85.2	89.4	91.0	90.9	88.9
Age Group (70-74)	104.6	107.7	109.1	112.4	113.9	113.1	114.2
Age Group (75+)	101.9	100.2	101.7	101.6	102.4	105.0	105.5

Table 11b – Pensioners (public schemes) to population ratio by age group (%)

	2016	2020	2030	2040	2050	2060	2070
Age Group (<54)	5.6	5.5	5.7	5.7	5.6	5.7	5.7
Age Group (55-59)	20.7	20.5	20.2	20.3	20.1	20.0	20.1
Age Group (60-64)	28.4	28.1	27.6	27.5	27.5	27.3	27.3
Age Group (65-69)	84.1	80.9	58.2	59.6	60.8	61.1	59.1
Age Group (70-74)	94.2	99.1	98.7	100.3	101.2	101.3	101.6
Age Group (75+)	101.9	100.2	101.7	101.6	102.4	105.0	105.5

Table 12a – Female Pensioners (public schemes) to inactive population ratio by age group (%)

	2016	2020	2030	2040	2050	2060	2070
Age Group (<54)	12.5	12.3	13.0	13.1	12.5	12.8	13.0
Age Group (55-59)	62.4	63.4	71.5	79.2	77.6	78.1	77.8
Age Group (60-64)	53.5	56.7	61.9	69.8	66.8	68.6	68.9
Age Group (65-69)	89.7	92.7	79.5	84.8	86.6	86.9	84.8
Age Group (70-74)	89.5	97.5	100.9	103.3	106.2	105.5	106.0
Age Group (75+)	96.3	94.5	99.2	99.1	99.3	102.8	103.6

Table 12b – Female Pensioners (public schemes) to population ratio by age group (%)

	2016	2020	2030	2040	2050	2060	2070
Age Group (<54)	6.6	6.5	6.7	6.7	6.5	6.6	6.7
Age Group (55-59)	24.5	24.0	23.4	23.4	23.4	23.4	23.4
Age Group (60-64)	32.1	31.7	30.7	30.5	30.5	30.5	30.5
Age Group (65-69)	78.5	77.0	57.4	58.7	59.3	60.0	57.9
Age Group (70-74)	85.0	93.4	93.8	94.5	96.1	96.2	96.1
Age Group (75+)	96.3	94.5	99.2	99.1	99.3	102.8	103.6

In tables 11 and 12, the number of pensioners is divided by both the total and inactive population in their age cohort, respectively. The inclusion of carers allowance and deserted wives benefit recipients in the projections can result in ratios above 100% for the older age groups as these benefits can be received alongside either State pension (SCP or SNCP). In addition, the numerator includes resident and cross-border beneficiaries whereas the denominator refers only to resident population.

The pensioners to population ratio is set to decrease significantly in the 65-69 age group, from 84.1% in 2016 to 59.1% in 2070. This is largely attributable to increases in the statutory retirement age as the ratio remains relatively constant from 2028 onwards[46]. The increase in the female pensioners to population ratio for the 70-74 and 75+ cohorts is particularly pronounced reflecting improving contribution histories.

Table 13a- Projected and disaggregated new old-age and early earnings-related pensions - Total

	2016	2020	2030	2040	2050	2060	2070
I. Projected new pension expenditure (millions EUR)	346.5	429.0	778.9	1492.8	2305.0	2459.7	3806.5
II. Monthly Average Pensionable Earnings ('000 EUR)*	1.05	1.13	1.61	2.27	3.20	4.54	6.44
III. Number of new pensioners ('000) (per annum)	27.5	31.7	40.3	54.8	60.1	45.2	49.2
IV. Average number of months paid the first year **	12	12	12	12	12	12	12
Monthly average pensionable earnings / Monthly economy-wide average wage (%)	30.5	28.6	28.9	29.0	28.7	28.7	28.7

* Monthly average pensionable earnings equates to average monthly pension payments.

** For instance, if you receive a pension payment for the first time in September 1ST 2015, you are still a "new pensioner" until September 1st 2016.

[46] The state pension age is to increase from 66 years to 67 years in 2021 and to 68 years in 2028.

Table 13b - Projected and disaggregated new old-age and early earnings-related pensions – Male

	2016	2020	2030	2040	2050	2060	2070
I.Projected new pension expenditure (millions EUR)	211.0	259.0	447.3	816.6	1205.7	1351.0	2159.8
II. Monthly Average Pensionable Earnings ('000 EUR)	1.07	1.17	1.63	2.27	3.18	4.52	6.42
III. Number of new pensions ('000) (per annum)	16.5	18.4	22.9	30.0	31.6	24.9	28.0
IV. Average number of months paid the first year	12	12	12	12	12	12	12
Monthly average pensionable earnings / Monthly economy-wide average wage (%)	31.1	29.8	29.2	29.0	28.6	28.6	28.6

Note: Monthly average pensionable earnings equates to average monthly pension payments

Table 13c - Projected and disaggregated new old-age and early earnings-related pensions - Female

	2016	2020	2030	2040	2050	2060	2070
I. Projected new pension expenditure (millions EUR)	135.5	170.0	331.6	676.1	1099.2	1108.7	1646.7
II. Monthly Average Pensionable Earnings ('000 EUR)	1.02	1.06	1.59	2.27	3.21	4.56	6.48
III. Number of new pensions('000) (per annum)	11.0	13.3	17.4	24.8	28.5	20.3	21.2
IV. Average number of months paid the first year	12	12	12	12	12	12	12
Monthly average pensionable earnings / Monthly economy-wide average wage (%)	29.7	27.0	28.6	29.1	28.8	28.8	28.9

Note: Monthly average pensionable earnings equates to average monthly pension payments

Tables 13a, 13b and 13c provide a detailed decomposition of new old-age and earnings related pensions.

The monthly average pensionable earnings for women is set to converge towards the male average by the mid-2030s and is projected to slightly exceed the male average from 2037 onwards reflecting improvements in female contribution histories[47].

The number of new pensioners increases substantially between 2016 and 2050 reflecting *inter alia* the significant rise in the population reaching retirement age and improvements in contribution histories.

Monthly average pensionable earnings as a proportion of the average wage are set to decline moderately over the forecast period. This is primarily attributable to the effect of social welfare rates growing less than the implied growth in inflation and labour productivity and the impact of the introduction of the TCA in 2020. This is somewhat offset by improvements in contribution histories over the first half of the forecast horizon.

[47] This metric refers to the average pensionable earnings of those qualifying for SCP i.e. not the average pensionable earnings of those of retirement age.

3.4 Financing the system

Table 14 – Financing the system

	Public employees	Private employees	Self-employed
Employer	Varies	Varies	4 % of covered income
Employee	Varies	Varies	
Other revenues	Social Insurance Fund and Social Assistance Fund (used to finance other social benefits in addition to pensions). Shortfalls met by Exchequer.	Social Insurance Fund and Social Assistance Fund (used to finance other social benefits in addition to pensions). Shortfalls met by Exchequer.	Social Insurance Fund and Social Assistance Fund (used to finance other social benefits in addition to pensions). Shortfalls met by Exchequer.
Maximum contribution	0	0	0
Minimum contribution	0	0	0

Table 15: Revenue from contribution (€ billion), number of contributors in the public scheme (in millions), total employment (in millions) and related ratios (%)

	2016	2020	2030	2040	2050	2060	2070
Public Contribution*	10.5	12.9	21.8	37.7	62.4	94.5	134.2
Employer contribution*	6.6	8.1	12.0	17.5	24.7	36.0	53.8
Employee contribution*	2.6	3.1	4.7	6.8	9.6	14.0	20.9
State contribution	1.3	1.7	5.1	13.4	28.1	44.6	59.6
Number of contributors (1)	2.6	2.7	2.8	2.9	2.9	2.9	3.1
Employment (2)	2.0	2.1	2.2	2.3	2.3	2.3	2.5
Ratio of (1) / (2)[48]	1.3	1.3	1.3	1.3	1.3	1.3	1.3

Note: Rounding may affect totals. * Include both public sector and private sector contributions as public occupational PRSI contributions are a subset of total public pension contributions.

The projected value of Pay Related Social Insurance contributions as a share of GDP (employer, employee and self-employed) is assumed to remain constant over the entire timeframe at the 2016 proportion (3.3% of GDP). The split between employer and employee PRSI contributions is also held constant throughout the forecast period at their currently observed levels (72% and 28% respectively).

The state is obliged to cover any of the remaining financing gap between PSS pension expenditure and employer and employee contributions. This is covered by way of a subvention from the Exchequer (Central Government). The proportion of PSS pension expenditure covered by the state is projected to increase substantially from 12.5% in 2016 to a peak of 47.5% in 2058 before falling to 44.4% in 2070. In terms of GDP this amounts to 0.5% in 2016, peaking at 3.0% in 2057 before falling back to 2.7% by 2070.

It should be noted that PRSI revenue (both employer and employee contributions) is used to fund a wide range of social insurance benefits, beyond the pension component. Thus, the above figures serve

[48] The ratio of contributors to employment is above 100% as PRSI contributions are a weekly charge i.e. where a person has worked for one week in the year they are recorded as a contributor whereas employment figures are based on annual average levels.

to underestimate the required social security pension subvention requirement throughout the forecast period[49].

The state is also obliged to cover any of the remaining financing gap between POPS pension expenditure and public service pension contributions. The POPS pension subvention was approximately €1.9 billion in 2017[50].

The number of public contributors is mechanically assumed to increase in line with employment growth. The Commission forecasts underpinning these estimates indicate this will be relatively moderate throughout the forecast period (employment growth averages just 0.4% per annum over the period 2016-2070). On this basis, the number of contributors per pensioner falls significantly over the forecast horizon from 2.8 in 2016 to 1.7 in 2070.

Table 16 – PSS pension expenditures under different scenarios (pp GDP deviation from the baseline)

	2016	2020	2030	2040	2050	2060	2070
Baseline	**3.8**	**3.8**	**4.3**	**5.2**	**6.1**	**6.3**	**6.0**
Higher life expectancy	0.0	0.0	0.0	0.1	0.2	0.3	0.3
Higher labour productivity (+ 0.4 pp)	0.0	0.0	0.0	-0.01	-0.02	-0.04	-0.05
Lower labour productivity (- 0.4 pp)	0.0	0.0	0.0	0.01	0.03	0.05	0.07
Higher employment rate (+ 2 pp)	0.0	0.0	-0.1	-0.2	-0.2	-0.2	-0.2
Lower employment rate (- 2 pp)	0.0	0.0	0.1	0.2	0.2	0.2	0.2
Higher employment of older workers (+10 pp)	0.0	0.0	-0.3	-0.3	-0.4	-0.4	-0.4
Higher Migration (+33%)	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
Lower Migration (-33%)	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Lower Fertility	0.0	0.0	0.0	0.1	0.3	0.6	0.9
Risk scenario	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic retirement age scenario	0.0	0.0	-0.2	-0.6	-0.7	-0.5	-0.5

Note: Sensitivity analysis applied to PSS pensions only.

In order to test the robustness of these pension projection results to a range of assumptions a sensitivity analysis was carried out in line with the harmonised range of shocks agreed by the Ageing Working Group (AWG)[51] [52].

Intuitively, a positive life expectancy shock leads to an increase in PSS pension expenditure as a proportion of GDP, as pension recipients spend longer in retirement. By 2070, PSS spending under the higher life expectancy scenario is 0.3 p.p. of GDP higher relative to baseline. It should be noted that currently, the Irish pension system does not include any mechanism that links the statutory retirement age to changes in life expectancy in order to offset such cost pressures. The effects of such an approach

[49] However, PRSI revenue is assumed to remain constant over the forecast horizon despite the fact that contribution histories are forecast to improve over much of the projection period. This serves to underestimate PRSI revenue and thus overestimate the funding gap.

[50] This includes the pension related deduction as a POPS pension contribution. If the Pension Related Deduction (PRD) is excluded the POPS pension subvention (net cost of POPS pensions) was approximately €2.6 billion (85% of gross cost of POPS pensions). These figures exclude local authority pension expenditure.

[51] The higher life expectancy scenario assumes an increase in life expectancy at birth of two years by 2070 compared to the baseline scenario. This is achieved by decreasing the age-specific mortality rates linearly over the entire forecast period. The higher/lower labour productivity scenarios assume convergence to a productivity growth rate which is 0.4 percentage points higher/lower than in the baseline scenario. The higher employment rate scenario is assumed to be achieved by lowering the structural unemployment rate (i.e the NAWRU) by 2 percentage points between 2018 and 2030 compared to the baseline. The employment rate is then kept at its higher value until 2070. The higher employment rate of older workers scenario assumes an increase of 10 percentage points in the employment rate of older workers (55 to 74) between 2018 and 2030 and maintains its value thereafter. The migration scenarios assume 20% more/less migration when compared to the baseline projection. The dynamic retirement age scenario links the retirement age to increases in life expectancy. In particular, the statutory retirement age follows the evolution of life expectancy in every year, i.e if life expectancy increases by 10% of a year in a given year, the statutory retirement age will increase by 10% of a year.

[52] The sensitivity shocks were applied exclusively to social security pension schemes (PSS).

are illustrated under the dynamic retirement age scenario reported above. A policy linking retirement age to increases in life expectancy could be expected to lead to a considerable fall in PSS pension expenditure as a share of GDP compared to the baseline by 2070 (0.5 p.p of GDP lower).

Higher (lower) labour productivity leads to a decrease (increase) in PSS pension expenditure relative to baseline. The projection methodology indexes rates of pension payment to changes in nominal earnings, the real component of which is assumed to grow in line with productivity. As a result, the higher (lower) productivity scenario leads to an increase (decrease) in nominal PSS pension spending which is largely offset by a higher (lower) denominator – leaving the marginal impact relative to baseline 0.1 p.p. of GDP lower (higher) than the baseline.

A 2 p.p. higher (lower) employment rate in general leads to a 0.2 p.p. reduction (increase) in PSS pension spending as a proportion of GDP by 2070 relative to the baseline.

The higher employment rate of older workers scenario, in particular, leads to a more pronounced reduction in PSS pension expenditure suggesting targeted policies to boost employment for older workers can have a more pronounced benefit in lower pension spending. For instance, PSS pension expenditure in 2070 under the higher employment rate of older workers is 0.4 per cent of GDP lower compared to the baseline. These projections suggest that putting in place targeted policy measures that serve to increase the share of the older population at work would be of help in meeting the pensions funding challenge.

The greatest impact is seen in the lower fertility scenario. A fertility rate 20% lower compared to the baseline scenario by 2070 is assumed to lead to a 0.9 p.p increase in PSS pension expenditure as a proportion of GDP relative to the baseline.

Chapter 4
Description of the changes relative to previous AR projections

4.1 Summary

As table 17 indicates, current projections together with the previous vintages point towards the dominance of demographics in terms of driving future pension expenditure. However, the dependency ratio effect has improved proportionately in AR18 but this has been offset by *inter alia* a worsening of the benefit ratio and coverage ratio relative to AR15.

The worsening of the benefit ratio is primarily due to different short-term assumptions on rate increases. As discussed in section 1.2, AR18 incorporates rate increases set out in Budget 2017 and 2018 and from 2019 onwards rates are linked to nominal earnings. In contrast, AR15 assumed rates were fixed over the 2013-2016 period and were linked to nominal earnings from 2017 onwards. The worsening of the benefit ratio is also due to stronger contribution history assumptions. [53]As a result, the retirement age population transition towards more generous pension schemes i.e. higher SCP rate bands and Widow's contributory pensions, relative to AR15. The worsening of the coverage ratio is also attributable to relative improvements in contribution histories as a higher proportion of the population are assumed to qualify for pension payments.

Table 17: Average annual change in total pension expenditure to GDP during the projection period under the 2006, 2009, 2012 and 2015 projection exercises

	Pension expenditure to GDP	Dependency ratio	Coverage ratio	Employment effect	Benefit ratio	Labour intensity	Residual (incl. interaction effect)
2006	6.5	7.9	-1.4	-0.5	0.8	na	-0.2
2009	6.1	8.0	-2.1	-0.3	0.8	na	-0.4
2012	4.1	7.2	-2.8	-0.5	0.8	-0.01	-0.5
2015	1.1	6.0	-1.7	-0.5	-2.1	-0.03	-0.6
2015 (PSS)*	1.4	4.1	-1.3	-0.4	-0.7	-0.03	-0.4
2018 (PSS)*	2.2	3.1	-0.6	-0.05	-0.1	0.03	-0.2

* This refers to social security pension expenditure i.e. occupational pensions are not included.

The decomposition of the difference between 2015 and the new PSS pension projections are set out in table 18a. The first row displays PSS pension projections as a share of GDP as reported in the 2015 Ageing Report. The second row isolates the impact of the new macro-demographic assumptions on PSS spending[54]. The third row displays the effects of the new pension data outturns and changes to the modelling assumptions[55]. The fourth demonstrates the impact of policy changes i.e. rate increases in 2017 and 2018 that were lower than inflation and productivity assumptions produced by the Commission[56]. The final row displays AR18 PSS pension expenditure as a share of GDP.

[53] The model used for this exercise utilises estimates of projected pension entitlements of future retirees provided by KPMG. This is described in further detail in Chapter 5. Based on these estimates, the weighted average pension is greater for recipients in the 2018 Ageing Report relative to the 2015 Ageing Report.

[54] This is achieved by calculating the difference between these AR18 projections and our AR18 projections using the AR15 macro-demographic assumptions.

[55] This is obtained by calculating the difference between the AR18 projections (with the AR15 macro assumptions) and AR15 projections.

[56] This is achieved by calculating the difference between the AR18 projections which include Budget 2017/2018 pension measures and those with pension rates linked to inflation and productivity.

Table 18a: Decomposition of the difference between 2015 and the new PSS projection (% of GDP)

	2016	2020	2030	2040	2050	2060
(1) Ageing Report 2015	5.2	5.5	6.4	7.4	8.0	7.0
(2) Change in macro-demographic assumptions	-1.7	-1.9	-2.1	-2.3	-2.2	-1.2
(3) Improvement in coverage/modelling	0.3	0.3	0.1	0.2	0.5	0.7
(4) Policy related changes	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
(5) Ageing Report 2018	3.8	3.8	4.3	5.2	6.1	6.3

Note: Rounding may affect totals

Table 18a clearly demonstrates the disproportionate impact of the macro-demographic assumptions on the projected pension spending. The substantial upward revision to nominal GDP relative to AR15 assumptions (43 per cent increase or approximately €84bn) is the main reason for the difference throughout the forecast horizon. This reflects the much stronger than anticipated underlying recovery in the Irish economy and more importantly the impact of statistical factors, which artificially inflate the size of the Irish economy[57]. This is discussed in more detail in section 4.2 below.

While the macro-demographic assumptions continue to improve the ratio throughout the forecast horizon the positive impact begins to wane from around 2050 onwards when the more negative dependency ratio offsets some of the positive impact from the denominator (see figure 2).

The negative impact from (3) in the base year is due to stronger than anticipated PSS expenditure outturns. The negative impact from (3) increases in the outer years of the forecast primarily reflecting the assumption of improvements in contribution histories which serves to increase coverage ratios relative to AR15. As table 18a illustrates, the impact of (4) is very minor throughout the forecast horizon.

In overall terms, the divergence between the two sets of projections widens over most of the forecast period. However, there is a very sharp narrowing from 2050 onwards such that by the end of the forecast period the difference falls to 0.7 pp (much lower than the 1.4pp gap in the base period). This narrowing reflects *inter alia* the worsening of the dependency ratio and improvements in the coverage ratio relative to AR15.

Table 18b: Decomposition of the difference between 2015 and the new total public pension projection (PSS + POPS) (% of GDP)

	2016	2020	2030	2040	2050	2060
Ageing Report 2015 (PSS+POPS)	7.4	8.0	9.1	10.0	10.0	8.4
Ageing Report 2015 (POPS)	2.1	2.5	2.7	2.6	2.0	1.4
Ageing Report 2018 (PSS+POPS)	5.0	5.1	5.8	6.7	7.4	7.2
Ageing Report 2018 (POPS)	1.2	1.3	1.5	1.5	1.4	0.9

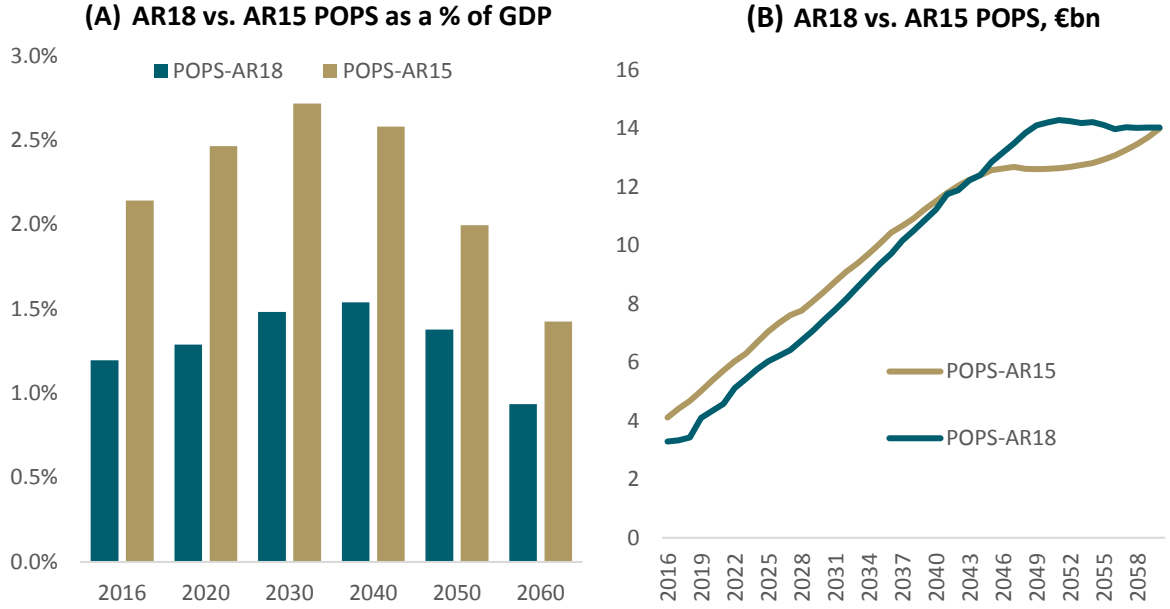
As Table 18b and Figure 4 (a) illustrate, the starting position of the projections is lower than expected and there is a significant fall in the POPS ratio relative to AR15 over the time period under consideration. These differences can be attributed to the lower than expected pay and pensions paid to public servants during the Financial Emergency as well as the significant increase in the GDP denominator, as discussed above.

[57] These factors include *inter alia* contract manufacturing and onshoring of intellectual property assets and were the principal reason for the 26 per cent growth in real GDP in 2015.
http://www.cso.ie/en/media/csoie/methods/nationalincomeandexpenditureannualresults/NIE_2016_FAQS.pdf

The trend in POPS expenditure is however projected to increase more rapidly than the projections underlying AR15 reflecting *inter alia* stronger growth in nominal earnings relative to AR15 assumptions as well as increased public service numbers (see Figure 4 (b) below).

Moreover, Figure 4 (b) shows a reversal of trends from 2050 onwards with POPS expenditure declining slightly while AR15 projected a modest increase in pension outlays. This reflects greater estimated savings from the Single Public Service Pension Scheme relative to AR15 projections. Also, the mortality rates applied to public service pensioners in AR18 are stronger compared to the previous exercise i.e. life expectancy is lower, which partially offsets the higher projected POPS expenditure relative to AR15 towards the end of the projection period.

Figure 4: Public service occupational pension expenditure

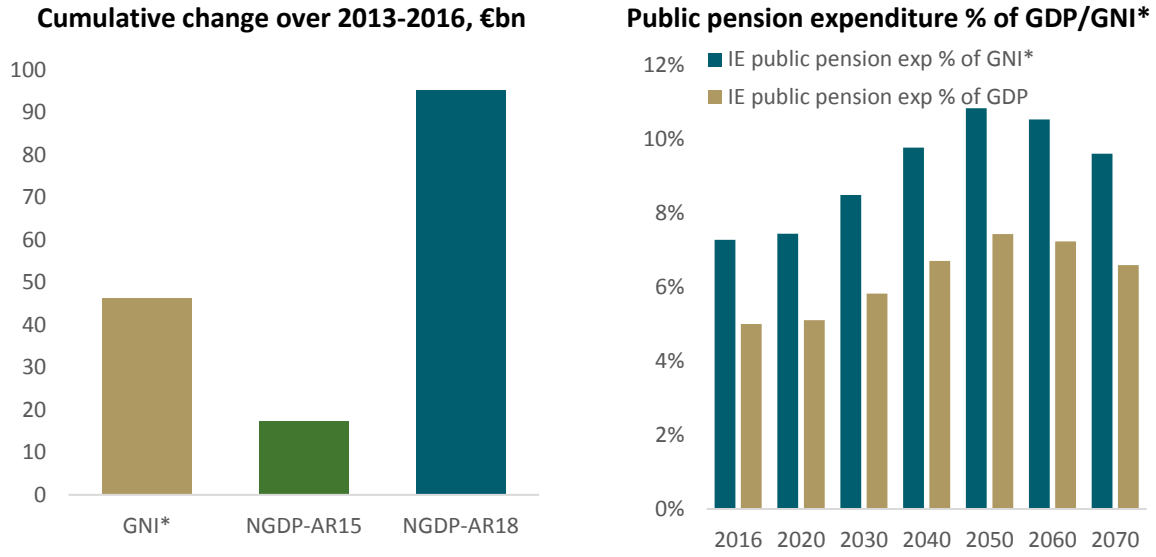


Source: CSO, Department of Finance, Ageing Report 2015

4.2 Public Pension expenditure as a share of GNI*

As figure 5 demonstrates approximately one third of the difference in nominal GDP in 2016 relative to AR15 is due to the stronger recovery with the remainder attributable to statistical issues[58]

Figure 5: Public pension expenditure as a share of GDP vs. GNI*



Source: CSO, Department of Finance, Ageing Report 2015

In response to these difficulties, the Central Statistics Office -Ireland's National Statistical Institute- has published an alternative measure of the size of the Irish economy that excludes the effects of globalisation, so–called modified Gross National Income (sometimes called GNI*). This metric is equal to Gross National Income (which is very similar to GNP) but excludes

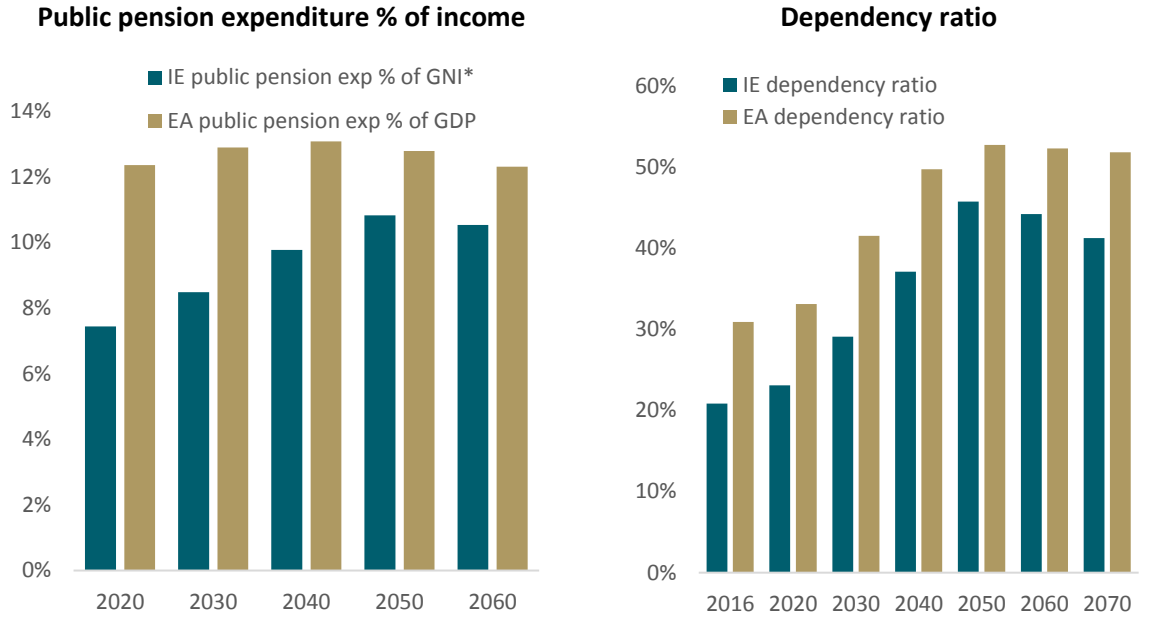
: the profits of firms that have re-domiciled to Ireland;
: the depreciation of foreign-owned intellectual property assets located in Ireland; and
: the depreciation of aircraft owned by aircraft-leasing companies

Figure 5 compares public pension expenditure forecasts on a GDP and GNI* basis clearly illustrating that the GDP ratio paints an overly benign picture[59]. PPE as a share of GNI* is 7.3 per cent in 2016 rising to 10.9 per cent in 2054 – this compares to a peak of 7.5 per cent on a GDP basis.

[58] The cumulative change in GNI* is used here as a proxy for the underlying recovery. There was also a €5.5bn upward revision to the 2013 nominal GDP figure.

[59] GNI* is a purely technical projection, for illustrative purposes, assumed to grow in line with Commission projections for nominal GDP. This is likely to underestimate the pension ratio as historically GNI* has grown at a slower pace relative to GDP.

Figure 6: Irish public pension expenditure and dependency ratio relative to euro area



Source: CSO, Department of Finance, Ageing Report 2015

Figure 6 shows the evolution of PPE as a share of GNI* relative to AR15 projections for the euro area. Even on a GNI* basis PPE is still well below the euro area over the short-to-medium term reflecting *inter alia* Ireland's much lower dependency ratio. The divergence narrows over the forecast horizon as the dependency ratio in Ireland converges towards, but never reaches, the euro area average.

Chapter 5
Description of the pension projection model and its base data

5.1 Institutional context in which those projections are made

The projections presented as part of this exercise were undertaken by the Department of Finance with assistance from the Department of Employment Affairs and Social Protection (DEASP) and the Department of Public Expenditure and Reform (DPER).

The basic data used to run the pension model were supplied in 2017 by the DEASP and DPER (for public sector workers) and refer to the base year 2016. All PSS data are categorized by type of pensions (old-age and early retirement. disability and survivors), by sex and age (at 31 December each year).

5.2 Data used to run the model

The macroeconomic and demographic variables used in the projections are exogenous as agreed by the Ageing Working Group (AWG).

In addition, data on pensioners by type of pension scheme (old-age and early retirement, disability and survivors), by sex and age (at 31 December each year) are used to run the model.

5.3 Reforms incorporated in the model

See section 1.2

5.4 General description of the model(s)

Public social security pensions (PSS)

Pension Recipients: To project the number of PSS pension recipients, the starting point requires a detailed disaggregation of current recipients to obtain the proportion of the population by scheme, sub-scheme, payment type, gender and age cohort. These proportions are expected to change throughout the forecast period reflecting improvements in contribution histories and the incorporation of the total contributions approach.

To forecast the evolution of these proportions, the model relies on estimates of the projected pension entitlements of future retirees. These estimates were produced by KPMG in their actuarial review of the Social Insurance Fund[60]. Using the full contribution histories provided by DEASP, KPMG calculated rates of pension for each retiring individual for each of the first 10 years of the projection period (2016-2025) and thereafter at 5 year spot rates interpolating between years.

KPMG provided estimates of the proportions falling into each rate band of SCP, split by gender, in 2020, 2030 and 2040. Hereafter, contribution histories were assumed to be constant for new qualifiers. In order to estimate the number of new recipients falling into each pension band in each future year, a linear interpolation between the data points provided by KPMG was calculated[61].

[60] Review published in October 2017 and can be found at: http://www.welfare.ie/en/Pages/Actuarial-Review-of-The-Social-Insurance-Fund-31-December-2015.aspx

[61] A linear weighted average is adopted for new entrants from 2016 to 2020 and at 10 year intervals after this until the end point of 2040. Proportions after 2040 are kept constant. Improvements in contribution histories only affect the flow of new retirees and not the stock of individuals already qualified and in receipt of a pension.

Pension Expenditure: Gross PSS pension expenditure projections adopt a bottom-up approach. The projection methodology takes the most up to date rates of payment applicable to the various pension schemes plus appropriate extra allowances as the starting point.

For this particular exercise, we have incorporated the rate increases announced by the Government in the 2017 and 2018 Budgets, discussed in Section 1.2. Thereafter, all pension rates are assumed to rise at the same flat rate (inflation plus productivity). An estimate of overall spending is provided by multiplying the projected payment rates for each year by the number of pensioners claiming each type of payment.

Net pension expenditure projections are not provided as it is not possible to distinguish pension income from non-pension income on the basis of tax records.

Contributions: PSS pensions in Ireland are financed through a combination of PRSI contributions (Social Insurance pensions) and general tax revenues (Social Assistance schemes; Social Insurance schemes in the event of a shortfall in contributions).

The projected value of Pay Related Social Insurance contributions (employer, employee and self-employed) is held constant over the entire timeframe at the 2016 rate of 3.3% of GDP. The proportion coming from employer and employee PRSI contributions is also held constant throughout the forecast period at approximately 72% and 28%, respectively.

Number of Contributors: The number of individuals paying PRSI in 2015 (the most recent year for which this data is available) is taken as the base figure when projecting contributors[62]. Over time, the number of contributors is assumed to increase in line with employment growth of those aged 15-75.

Private occupational public service pensions (POPS)

Pension Expenditure: Actual spending on POPS pensions in 2016 is taken as the starting point[63]. Reforms implemented in 1995 and 2004, including the integration of occupational and state pensions, the raising of the minimum pension age and the removal of a compulsory retirement age for most new public servants, are accounted for in the projected spending figures. In addition, the introduction of the Single Public Service Pension Scheme, which is a career average revalued earnings scheme is incorporated in the public service pension model.

As in the case of the PSS projections, net pension expenditure estimates are not reported as it is not possible to distinguish POPS pension income from non-pension income on the basis of tax records[64].

5.5 Limitations of the model

The model deals exclusively with public pensions (PSS and POPS). Projections of private sector occupational and voluntary pension schemes are not provided due to lack of data.

The PSS model is driven entirely by population, employment, labour productivity growth, CPI and assumptions related to contribution histories and the effect of the total contributions approach. There is no explicit link to other CSM or broader macro variables in the model.

[62] Data source: Department of Employment Affairs and Social Protection.

[63] Projected public service pension expenditure includes lump sum expenditure.

[64] Net pension expenditure equals pension expenditure less tax revenue from pension income.

As discussed in section 3.4, PRSI contributions are used as a proxy for public contributions. PRSI contributions as a share of GDP (employer, employee and self-employed) are assumed to remain constant over the entire timeframe at the 2016 level (3.3% of GDP). This is the despite the fact that contribution histories and participation rates are set to increase over the forecast period. This assumption is likely to underestimate the extent of public contributions. Operating in the other direction, PRSI revenue (both employer and employee contributions), is used to fund a wide range of social insurance benefits, beyond the pension component. Therefore, the financing gap between PSS pension expenditure and public contributions that the state is obliged to cover is likely to be underestimated.

Methodological Annex 1

Economy- wide average wage

As highlighted in Section 3.3, the benefit ratio is calculated using the Commission's projections of average earnings. However, CSO data indicates that the average wage in Ireland is much lower than the Commission estimates. Table A1 below replicates table 9 using average earnings from the CSO's Earnings and Labour Costs (EHECS) release.

Table A1 – Benefit ratio by pension scheme (in %) using EHECS average earnings

	2016	2020	2030	2040	2050	2060	2070
Public Scheme (Benefit Ratio) (PSS)	31.1	30.4	30.5	30.7	30.8	31.0	31.1
Public Scheme old-age earnings related (Benefit Ratio)	33.3	32.2	31.9	31.8	31.7	31.9	32.0

Note: EHECS average earnings are assumed to increase in line with Commission projections. Coverage projections are unchanged.

Pension taxation

Under the Irish tax system, employee pension contributions are exempt from income tax (tax relief is given at the marginal rate of tax) though such contributions are not exempt from USC or PRSI, accumulated pension fund returns are largely tax free (the assets of funded pension arrangements were subject to a pension fund levy for the period 2011 to 2015), and pension drawdowns are fully taxed in the hands of the recipient with the exception of the tax-free retirement lump sum which, depending on the nature of the pension vehicle can amount to 1.5 times final salary or 25% of the fund, subject to a lifetime cap of €200,000.

Disability pension

Disability pensions are projected to increase from 0.7% in 2020 to 0.8% in 2030. This rise is largely due to the stepped increase in the statutory retirement age from 66 at the beginning of the forecast period, to 67 in 2021 and to 68 in 2028 as the model assumes that eligibility ages for schemes such as invalidity pension increase proportionately[65]. The increase in this component will partially offset some of the projected benefits arising from recent pension reforms.

Disability incidence rates by age group are assumed to be constant over time. Disability pension rates are assumed to increase in the same way as all other pension rates (inflation plus productivity).[66]

Survivor pensions

Despite a considerable increase in the dependency ratio over the forecast period, spending on survivor's pensions is set to remain relatively constrained increasing by 0.2 p.p of GDP over the forecast horizon. However, this is largely compositional as more individuals are assumed to transition to receipt of the State contributory pension over the forecast horizon. In particular, the share of the female population receiving the SCP is set to increase significantly from 43% to around 73%.

Non-earnings related minimum pension

Spending on non-contributory old-age pensions is set to decline reflecting improvements in contribution histories. As a result, there is a substantial transition from non-contributory to contributory pensions over the forecast horizon.

[65] For example, in 2021 when the statutory retirement age increases from 66 to 67 the invalidity pension eligibility age will increase from 65 to 66.

[66] This is a technical assumption for the purpose of this exercise to maintain consistency with the previous Ageing Reports.

Table A2 - Factors behind the change in public pension expenditure between 2016 and 2070 using pension data (in percentage points of GDP) –pensions/pensioners

	2016-20	2020-30	2030-40	2040-50	2050-60	2060-70	2016-70
Public Pensions (PSS) to GDP	**0.0**	**0.5**	**0.8**	**0.9**	**0.2**	**-0.3**	**2.2**
Dependency ratio effect	0.4	1.2	1.4	1.6	-0.2	-0.6	3.8
Coverage ratio effect	-0.1	-0.4	-0.2	-0.1	0.1	0.1	-0.6
Coverage ratio old-age	0.0	-0.2	0.1	0.1	0.2	0.0	0.1
Coverage ratio early-age	-0.2	-0.3	0.1	0.4	-0.2	-0.2	-0.4
Cohort effect	-0.2	-0.4	-0.7	-0.8	0.1	0.4	-1.6
Benefit ratio effect	-0.2	-0.1	0.0	0.0	0.0	0.0	-0.1
Labour market/Labour intensity effect	-0.1	0.0	-0.1	-0.1	0.1	0.1	-0.1
Employment ratio effect	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1
Labour intensity effect	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Career shift effect	0.0	-0.1	0.0	0.0	0.1	0.0	-0.1
Residual	0.0	-0.3	-0.4	-0.5	0.2	0.2	-0.7

Methodological Annex 2

Methodology

$$\frac{\text{Pension Exp.}}{\text{GDP}} = \overbrace{\frac{\text{Population } 65+}{\text{Population } 20-64}}^{\text{Dependency Ratio}} \times \overbrace{\frac{\text{Number of Pensioners}}{\text{Population } 65+}}^{\text{Coverage Ratio}} \times \overbrace{\frac{\text{Population } 20-64}{\text{Working People } 20-74}}^{\text{Labour Market / Labour Intensity}} \times \overbrace{\frac{\frac{\text{Average Pension}}{\text{GDP}}}{\text{Hours Worked } 20-74}}^{\text{Benefit Ratio}}$$

$$\overbrace{\frac{\text{Number of Pensioners}}{\text{Population } 65+}}^{\text{Coverage Ratio}} = \overbrace{\frac{\text{Number of Pensioners } 65+}{\text{Population } 65+}}^{\text{Coverage Ratio Old-Age}} + \left(\overbrace{\frac{\text{Number of Pensioners} \leq 65}{\text{Population } 50-64}}^{\text{Coverage Ratio Early-Age}} \times \overbrace{\frac{\text{Population } 50-64}{\text{Population } 65+}}^{\text{Cohort Effect}} \right)$$

$$\overbrace{\frac{\text{Population } 20-64}{\text{Working People } 20-74}}^{\text{Labour Market / Labour Intensity}} = \overbrace{\frac{\text{Population } 20-64}{\text{Working People } 20-64}}^{\text{1/Employment Rate}} \times \overbrace{\frac{\text{Working People } 20-64}{\text{Hours Worked } 20-64}}^{\text{1/Labour intensity}} \times \overbrace{\frac{\text{Hours Worked } 20-64}{\text{Hours Worked } 20-74}}^{\text{1/Career shift}}$$

Old-Age Pension Rates

Table A3 – State contributory pension (SCP) rates in 2016 and before 10 March 2017[67]:

Yearly Average PRSI Contributions	*Personal Rate per week, €*
48 or over	233.30
40-47	228.70
30-39	209.70
20-29	198.60
15-19	152.00
10-14	93.20

Table A4 – State contributory pension (SCP) rates in 2016 and before 10 March 2017 for people who qualified for pensions before 1 September 2012

Yearly Average PRSI Contributions	*Personal Rate per week, €*
48 or over	233.30
20-47	228.70
15-19	175.00
10-14	116.70

[67] The projections incorporate social welfare rate increases announced in Budget 2017 and 2018. From 2019 rates are indexed by inflation and productivity. This is a technical assumption for the purpose of this exercise to maintain consistency with previous Ageing Reports.

Table A5 – Main Eligibility Requirements for First Pillar Pensions

Pension Scheme	*Requirements (claimant must)*
State Contributory Pension	• be 66 years or over • have commenced paying PRSI contributions before age 56 • have at least 260 full rate contributions paid • from April 2012 have at least 520 full rate contributions paid a yearly average of 48 paid / credited since 1979 to the end of the relevant tax year or a yearly average of 10 paid / credited since 1953 (or since commencement of insurable employment if later) to the end of the relevant tax year
State Non-Contributory Pension	• be 66 years or over • satisfy a means test • satisfy the Habitual Residence Condition
Widow's Widower's or Surviving Civil Partner's Contributory Pension	• be widowed or divorced from late spouse and not remarried / cohabiting • have 156 weeks PRSI paid before pension age / death of spouse a yearly average of 39 weeks PRSI paid / credited over 3 or 5 tax years (whichever is most beneficial) before pension age / death of spouse or an annual average of 24 PRSI contributions for a minimum pension, or an average of 48 for a maximum pension • From 27th December 2013 have at least 260 weeks PRSI paid
Widow's Widower's or Surviving Civil Partner's Non-Contributory Pension	• be widowed or divorced from late spouse and not remarried / cohabiting • satisfy a means test be habitually resident in the State
Invalidity Pension (note: since 2006 recipients of Invalidity Pension on reaching 66 years of age have been transferred to State Pension Contributory)	• Have been incapable of work for at least 12 months and be likely to be incapable of work for at least another 12 months or be permanently incapable of work • Be under 66 years of age • have 260 PRSI contributions paid • have 48 PRSI contributions paid / credited in the relevant tax year

Illness Benefit	• be unable to work due to illness • be under 66 years • have at least 52 weeks PRSI contributions paid (104 weeks from January 2009) and 39 weeks PRSI contributions paid / credited in the relevant tax year (13 of which must be paid contributions) or 26 weeks PRSI contributions paid in the relevant tax year and 26 weeks PRSI contributions paid in the tax year immediately before the relevant tax year
Disability Allowance	• satisfy the Habitual Residence Condition • have an illness/disability that has continued or is expected to continue for at least one year and causes a substantial restriction in doing work that would otherwise be suitable • be between 16 and 65 years • satisfy a means test
Carers Allowance	• be 18 years or over • satisfy a means test • live with or can be contactable quickly by the person they are caring for • care for the person on a full-time basis • not be employed outside the home for more than 15 hours a week • Satisfy Habitual Residence condition • be resident in the State • not live in a hospital or similar institution
Carers Benefit	• be 16 or over but under 66 • have been in employment for at least eight weeks in the previous 26 weeks • give up employment to care for somebody full-time • live with or can be contactable quickly by the person by the person they are caring for • care for the person on a full-time basis • not be employed outside the home for more than 15 hours a week • be resident in the State • not live in a hospital or similar institution • have 156 weeks PRSI contributions paid between entry into insurance and the time the claim is made and 39 weeks PRSI contributions paid in the relevant tax year or 39 weeks PRSI contributions paid in the 12 month period before the commencement of the Benefit or 26 weeks PRSI contributions paid in the relevant tax year and 26 contributions paid in the relevant tax year prior to that
Blind Persons Pension (note since 2006 recipients of Blind Person's Pension on reaching 66 have been transferred to SNCP)	• be 18 years and under 66 years • be blind or have serious vision impairment • be habitually resident in the State • satisfy a means test
Pre-Retirement Allowance (note: Closed to new applicants since 4 July 2007)	• be between 55 and 65 years of age • be retired from the workforce • satisfy a means test • have received Job Seekers Benefit or Job Seekers Allowance for 15 months or is no longer entitled to the One Parent Family Payment or to the Carer's Allowance or is separated from his / her spouse and has not been working for the preceding 15 months