KPMG

Actuarial Review of the Social Insurance Fund as at 31 December 2020

28 September 2022

To: The Minister for Social Protection
Department of Social Protection
Áras Mhic Dhiarmada
Store Street
Dublin 1

28 September 2022

Actuarial Review of the Social Insurance Fund 2020

Dear Minister

We have pleasure in enclosing our report setting out our findings on the Actuarial Review of the Social Insurance Fund 2020.

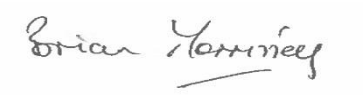
The objective of the review is set out in section 10 of the Social Welfare Consolidation Act 2005.

"The Minister shall cause (a) actuarial reviews to be made of the financial condition of the Social Insurance Fund by the persons the Minister may decide for the purpose of determining the extent to which the Fund may be expected, in the longer term, to meet the demands in respect of payment of benefits and other payments, having regard, in particular, to the adequacy or otherwise of the contributions to support benefits and other payments and any other matters the Minister considers to be relevant as affecting the current and future financial condition of the Fund."

Our conclusions relating to the fifth such actuarial review with an effective date of 31 December 2020, are provided in the attached report.

The team would like to acknowledge the unwavering assistance given by officials of the Department of Social Protection throughout the project.

Yours faithfully,



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1 Executive Summary

The Social Welfare Consolidation Act, 2005 makes provision for the carrying out of actuarial reviews of the Social Insurance Fund ("Fund") at five yearly intervals. Following a competitive tender process, KPMG was appointed by the Department of Social Protection ("the Department") to carry out this fifth actuarial review ("Review") of the Social Insurance Fund with an effective date of 31 December 2020. Our findings build on the results of the previous four reviews.

The scope of the Review is set out in Chapter 2 and the original scope from the Request for Tender issued by the Department is included in Appendix 9.

The main social insurance benefits paid by the Fund relate to retirement, illness, incapacity, unemployment, maternity and bereavement. It is funded by PRSI contributions from employees, employers, the self-employed and voluntary contributions, with a subvention from the Exchequer where there is a gap between income and expenditure. A description of how the Fund works is set out in Appendix 1.

Before commenting on the results, it is important to emphasise that long-term projections are, by their nature, unlikely to be borne out in practice. We would encourage readers to focus on the trends which emerge over the period and on the relativities between projected incomes and expenditures under the base case and the various scenarios, rather than on the results for individual years. Reliances and limitations are described in Appendix 11.

1.1 Base case results at this 2020 Review

Base Case						
Year end	**Receipts**	**Expenditure**	**Surplus / (Shortfall)[1]**	**Net as a % of GDP**	**Net as a % of GNI***	**Projected Balance of Fund[2]**
2020	10.6	14.1	(3.5)	(0.9)%	(1.7)%	0.5
2021^	11.8	14.9	(3.1)	(0.7)%	(1.3)%	0.0
2022^^	14.2	11.5	2.7	0.6%	1.1%	2.7
2023	14.8	12.0	2.8	0.6%	1.1%	5.4
2024	15.4	12.7	2.7	0.5%	1.1%	8.1
2025	16.0	13.3	2.6	0.5%	1.0%	10.8
2026	16.4	13.9	2.4	0.5%	0.9%	13.2
2027	16.8	14.8	2.0	0.4%	0.7%	15.2
2028	17.1	15.2	1.9	0.4%	0.7%	17.1
2029	17.5	15.8	1.6	0.3%	0.6%	18.8
2030	17.8	16.5	1.3	0.2%	0.5%	20.1

1 The surplus / shortfall amounts may differ slightly to the differences in receipts and expenditure due to rounding. For example, in 2025 receipts are projected at €15.97, expenditure at €13.32bn giving a shortfall of €2.65bn where €2.6bn is shown (being €15.9bn less €13.3bn).

2 The Projected Balance of Fund figures are in 2022 real price terms. In performing the projection we have implicitly assumed that any returns earned will be broadly in line with the assumed inflation rate in the base case.

Base Case						
2031	18.2	17.2	1.0	0.2%	0.3%	21.1
2032	18.5	18.1	0.4	0.1%	0.1%	21.5
2033	18.9	18.6	0.3	0.1%	0.1%	21.9
2034	19.3	19.3	(0.0)	(0.0)%	(0.0)%	21.8
2035	19.6	20.1	(0.5)	(0.1)%	(0.1)%	21.4
2040	21.5	24.5	(3.0)	(0.4)%	(0.9)%	11.4
2045	23.3	29.5	(6.1)	(0.8)%	(1.6)%	(13.2)
2050	25.3	34.9	(9.6)	(1.2)%	(2.4)%	(55.1)
2055	27.4	40.4	(13.0)	(1.5)%	(3.0)%	(112.4)
2060	29.8	45.3	(15.6)	(1.7)%	(3.3)%	(182.5)
2065	32.3	49.8	(17.5)	(1.7)%	(3.4)%	(264.6)
2070	34.8	55.0	(20.2)	(1.9)%	(3.6)%	(361.1)
2076	38.1	63.0	(24.9)	(2.1)%	(4.1)%	(498.5)

Table 1.1: Progression of total income and expenditure (€ billions) and deficit as percentage of GDP and GNI*
^2021 figures are provisional outturn from the Department of Social Protection
^2022 figures reflect official revised estimates for expenditure and estimates for PRSI contributions based on Department of Finance fiscal data to end July 2022.

A number of observations in relation to the projections:

- There is an opening deficit effective 31 December 2020, which is largely due to Covid-related payments, with a projected surplus in 2022, the start of the projection period.
- Small annual surpluses are projected to continue to materialise up to 2033, after which the Fund is projected to experience a small annual shortfall, increasing thereafter.
- In the absence of any changes to PRSI rates or subventions from the State, annual projected expenditure in excess of income is anticipated to reach €0.5 billion by 2035 and €3.0 billion by 2040 in real 2022 price terms, increasing markedly thereafter.
- We anticipate that the annual shortfall will continue to grow to 2.4% of GNI* by 2050 and to 3.3% of GNI* in 2060 thereafter increasing to 4.1% by 2076.
- Note that despite annual shortfalls materialising from 2034 / 2035 onward the accumulated Fund at year end 2035 is projected to be of the order of €21.4 billion.[3]

1.1.1 Discounted value of future shortfalls

We have set out the present value of the accumulated Fund shortfalls (i.e. the difference between projected contribution income and expenditure) over the 55 year projection period to 2076 in Table 1.2.

It is important to realise that the discounted value of the future shortfalls is a hypothetical figure reflecting the “pay as you go” nature of the system. It is however a useful measure (expressed in 2022 real price terms). The values are highly sensitive to the discount rate assumption.

3 In projecting the Fund we have implicitly assumed that any returns earned will be broadly in line with the assumed inflation rate in the base case.

A 1.5% real discount rate (consistent with that adopted for the 2015 Review) was chosen reflecting the long-term view at 31 December 2020 which gives a resulting net present value of future shortfalls of €271 billion. The 1.5% real discount rate is also within a range of plausible real discount rates, reflecting current September 2022 conditions despite very high short term inflation expectations (which in the main feed through to higher long term government bond yields albeit the relationship is not fully linear). Further discussion on the real discount rate is included in Chapter 7 and Appendix 6.

Discounted value of future surpluses / (shortfalls) - Base Case					
Period	**"Real" discount rate assumptions (p.a.)**				
	0%	**1.2%**	**1.5%**	**2%**	**3%**
5 years to 2028	12.5	12.1	12.0	11.9	11.5
10 years to 2033	18.9	17.9	17.7	17.3	16.6
20 years to 2043	1.0	3.5	4.0	4.8	6.1
30 years to 2053	(78.8)	(54.9)	(50.1)	(42.8)	(30.8)
Full period to 2076	**(501.1)**	**(305.6)**	**(270.5)**	**(221.0)**	**(148.2)**

Table 1.2: Discounted value of future surplus / shortfalls (€ billions) from 2023

1.1.2 Age- related expenditure pressure challenges

The pensioner support ratio underpinning the population projections used for the purpose for this Review is expected to reduce from 4.4 in 2020 to 3.6 by 2030 and 2.9 by 2040. The challenge with the increasing number of upcoming pensioners against a backdrop of a smaller cohort of contributors is that the State pension continues to be paid at a level so as to ensure recipients maintain a standard of living, cognisant of “at risk of poverty” thresholds.

The progression of the pensioner support ratio is shown at Figure 1.1. A steep decline is projected between 2020 and 2050, thereafter reducing more gradually.

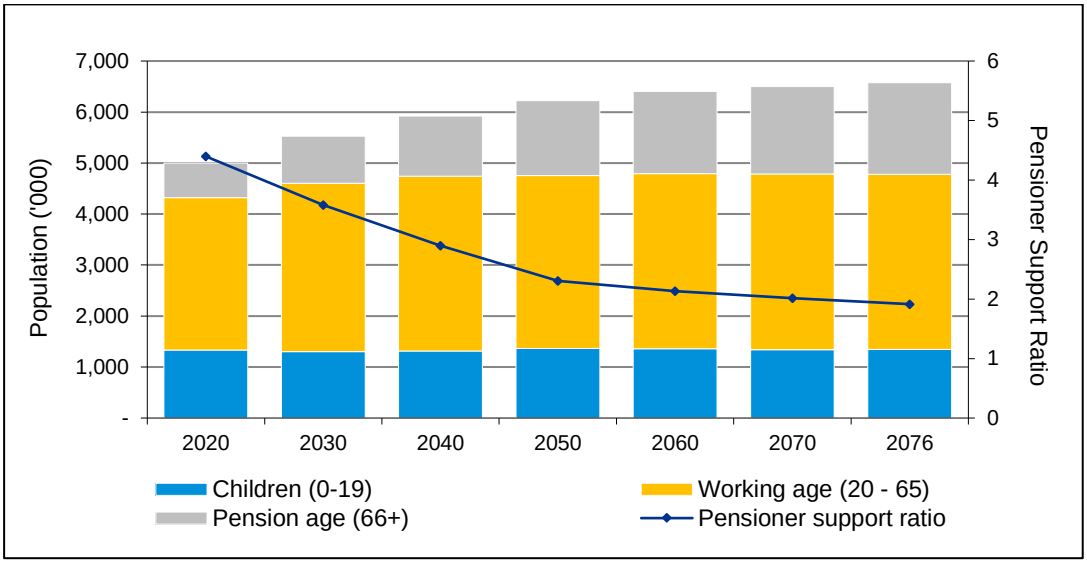

Figure 1.1: Projected age structure of the population and pensioner support ratio (2020-2076)

Political decisions are being planned, considered and/or made in order to meet these challenges. A Pensions Commission was established in 2020 and reported in 2021. At this Review we were instructed to provide an update and refinement to a number of sustainability package recommendations made by the Commission in light of updated 2022 data and reflecting the debate post publication. The full analysis is reflected in Chapter 10.

1.2 Reform packages to address fiscal sustainability

On foot of publication of the report of the Commission on Pensions[4] in October 2021 and subsequent debate, the Department requested us to analyse a number of scenarios. The scenarios were such as to result in a projected elimination of the actuarial shortfalls as assessed at this 2020 Review by 2040. The Policy Options analysed all reflect the same "agreed changes" to benefits as described in Appendix 8 and the "smoothed earnings" approach to indexation described in Appendix 7, coupled with PRSI rate increases. The only difference between each option is the population on which the incremental PRSI is levied.

Policy Option 1 reflects a modified version of the Pensions Commission package 1 which envisaged material PRSI rate increases for Class S. Policy Option 1 reflects calculation of PRSI rates targeting an elimination of the annual actuarial surplus / deficit by 2030 (if applicable) and again by 2040. Under Policy Option 1 Class S is assumed to increase gradually such that it reaches the average of the Class A employee and employer rate by 2040. Policy Option 1(a) is as per Policy Option 1 but with Class A increases commencing in 2024 rather than 2031.

Policy Option 2 differs in that the Class S rate increases are lower than under Policy Option 1 and remain in sync with the Class A employee rate. Policy Option 2(a) is as per Policy Option 2 but with a proposed lifting of the PRSI age exemption limit to age 70[5]. Policy Option 3 is as per Policy Option 1, but the Class S rate is assumed to increase linearly from its current rate starting in 2024 such that it reaches the Class A *employe*r rate by 2040.

An alternative option was also examined reflecting a "full projection period" scenario and a linear progression of PRSI rate increases over the full projection period commencing in 2024. The rates are calculated such that the "accumulated deficit"[6] is zero at the end of the projection period taking account of the opening surplus. Rate increases under the "full projection period" scenario are such that equal percentage point increases are applied to Class S, Class A employee and employer rates.

4 gov.ie - Report of the Commission on Pensions (www.gov.ie)

5 Any PRSI levied on over 66s will not apply to social welfare payments and all recognised types of pension income.

6 The "accumulated deficit" targeted is the opening projected surplus at year end 2022 and a summuation of the annual surplus/shortfalls anticipated to arise discounted at a real discount rate of 0%. The target includes an implicit assumption of Fund returns in line with the inflation assumption.

Outline of resulting incremental PRSI under the Policy Options analysed – base case

Summary of resulting incremental PRSI requirements for various Policy Options	
Main benefit considerations for SPC	Phase out of the yearly average approach for calculation SPC increases in line with the "smoothed earnings" approach to indexation
Policy Option 1: A modified version of Pensions Commission package 1 with material Class S increases[7]	
Self-employed (Class S)	Increase from 4% to the average of the then Class A employee and employer rate by 2040. Class S increases assumed to commence from 2024+
Class A Employer and employees	No increase by 2030; 0.75 percentage point increase by 2040[8].
Policy Option 1(a): As per Policy Option 1 but with Class A rate increases commencing from 2024	
Self-employed (Class S)	As per Policy Option 1.
Class A Employer and employees	0.15 percentage point increase by 2030; 0.60 percentage point increase by 2040.
Policy Option 2: PRSI rate increases where Class S increases in sync with the Class A employee rate	
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Class A Employer and employees	No increase by 2030; 0.99 percentage point increase by 2040.
Policy Option 2(a): As per Policy Option 2 but also reflecting an increase in the age exemption limit to age 70	
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Class A Employer and employees	No increase by 2030; 0.75 percentage point increase by 2040.
Policy Option 3: As Policy Option 1 but with Class S rate increasing to Class A employer rate by 2040	
Self-employed (Class S)	Increase from 4% to Class A employer rate by 2040
Class A Employer and employees	No increase by 2030; 0.51 percentage point increase by 2040
Full projection period scenario	
Self-employed (Class S)	Class S in sync with Class A employee rate
Class A Employer and employees	A linear 0.0775 percentage point increase per annum

Table 1.3: Summary of the Impact on PRSI under each Policy Option examined – base case

In tables 1.4 -1.6 that follow we have outlined the resulting impact on a year-by-year basis of the Policy Options for each of Class A employees, employers and Class S in turn, highlighting years 2030 and 2040 for easy comparability with the Pensions Commission recommendations.

Impact on PRSI Class A (employees) of various policy options on a yearly basis							
Year	**Base case**	**Policy Option 1**	**Policy Option 1(a)**	**Policy Option 2**	**Policy Option 2(a)**	**Policy Option 3**	**Full Projection period scenario**
2022	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
2023	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
2024	4.00%	4.00%	4.02%	4.00%	4.00%	4.00%	4.08%
2025	4.00%	4.00%	4.04%	4.00%	4.00%	4.00%	4.16%
2026	4.00%	4.00%	4.06%	4.00%	4.00%	4.00%	4.23%
2027	4.00%	4.00%	4.09%	4.00%	4.00%	4.00%	4.31%
2028	4.00%	4.00%	4.11%	4.00%	4.00%	4.00%	4.39%
2029	4.00%	4.00%	4.13%	4.00%	4.00%	4.00%	4.47%
2030	4.00%	4.00%	4.15%	4.00%	4.00%	4.00%	4.54%
2031	4.00%	4.08%	4.21%	4.10%	4.07%	4.05%	4.62%

7 The Pensions Commisson recommended that the Class S rate would increase from 4% to 10% by 2030 and thereafter to the higher Class A Employer rate.

8 In Policy options 1, 2, 2(a),3 the percentage point increase for Class A is assumed to occur linearly over the period 2031 – 2040. For example under Policy OptIon 1 the resulting 0.75 percentage point increase needed by 2040 means that a 0.075 increase occurs in each year 2031 – 2040 inclusive. The Class A increases in all cases apply to both the Class A employee and the Class A employer rates.

Impact on PRSI Class A (employees) of various policy options on a yearly basis							
2032	4.00%	4.15%	4.27%	4.20%	4.15%	4.10%	4.70%
2033	4.00%	4.23%	4.33%	4.30%	4.22%	4.15%	4.78%
2034	4.00%	4.30%	4.39%	4.40%	4.30%	4.21%	4.85%
2035	4.00%	4.38%	4.45%	4.50%	4.37%	4.26%	4.93%
2036	4.00%	4.45%	4.51%	4.60%	4.45%	4.31%	5.01%
2037	4.00%	4.53%	4.57%	4.70%	4.52%	4.36%	5.09%
2038	4.00%	4.60%	4.63%	4.79%	4.60%	4.41%	5.16%
2039	4.00%	4.68%	4.69%	4.89%	4.67%	4.46%	5.24%
2040	4.00%	4.75%	4.75%	4.99%	4.75%	4.51%	5.32%

Table 1.4: Impact on PRSI Class A (employees) of various policy options on a yearly basis

Impact on PRSI Class A (employers) of various policy options on a yearly basis							
Year	**Base case**	**Policy Option 1**	**Policy Option 1(a)**	**Policy Option 2**	**Policy Option 2(a)**	**Policy Option 3**	**Full Projection period scenario**
2022	10.05%	10.05%	10.05%	10.05%	10.05%	10.05%	10.05%
2023	10.05%	10.05%	10.05%	10.05%	10.05%	10.05%	10.05%
2024	10.05%	10.05%	10.07%	10.05%	10.05%	10.05%	10.13%
2025	10.05%	10.05%	10.09%	10.05%	10.05%	10.05%	10.21%
2026	10.05%	10.05%	10.11%	10.05%	10.05%	10.05%	10.28%
2027	10.05%	10.05%	10.14%	10.05%	10.05%	10.05%	10.36%
2028	10.05%	10.05%	10.16%	10.05%	10.05%	10.05%	10.44%
2029	10.05%	10.05%	10.18%	10.05%	10.05%	10.05%	10.52%
2030	10.05%	10.05%	10.20%	10.05%	10.05%	10.05%	10.59%
2031	10.05%	10.13%	10.26%	10.15%	10.12%	10.10%	10.67%
2032	10.05%	10.20%	10.32%	10.25%	10.20%	10.15%	10.75%
2033	10.05%	10.28%	10.38%	10.35%	10.27%	10.20%	10.83%
2034	10.05%	10.35%	10.44%	10.45%	10.35%	10.26%	10.90%
2035	10.05%	10.43%	10.50%	10.55%	10.42%	10.31%	10.98%
2036	10.05%	10.50%	10.56%	10.65%	10.50%	10.36%	11.06%
2037	10.05%	10.58%	10.62%	10.75%	10.57%	10.41%	11.14%
2038	10.05%	10.65%	10.68%	10.84%	10.65%	10.46%	11.21%
2039	10.05%	10.73%	10.74%	10.94%	10.72%	10.51%	11.29%
2040	10.05%	10.80%	10.80%	11.04%	10.80%	10.56%	11.37%

Table 1.5: Impact on PRSI Class A (employers) of various policy options on a yearly basis

Impact on PRSI Class S of various policy options on a yearly basis							
Year	**Base case**	**Policy Option 1**	**Policy Option 1(a)**	**Policy Option 2**	**Policy Option 2(a)**	**Policy Option 3**	**Full Projection period scenario**
2022	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
2023	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
2024	4.00%	4.22%	4.22%	4.00%	4.00%	4.39%	4.08%
2025	4.00%	4.44%	4.44%	4.00%	4.00%	4.77%	4.16%
2026	4.00%	4.67%	4.67%	4.00%	4.00%	5.16%	4.23%
2027	4.00%	4.89%	4.89%	4.00%	4.00%	5.54%	4.31%
2028	4.00%	5.11%	5.11%	4.00%	4.00%	5.93%	4.39%

Impact on PRSI Class S of various policy options on a yearly basis							
2029	4.00%	5.33%	5.33%	4.00%	4.00%	6.32%	4.47%
2030	4.00%	5.56%	5.56%	4.00%	4.00%	6.70%	4.54%
2031	4.00%	5.78%	5.78%	4.10%	4.07%	7.09%	4.62%
2032	4.00%	6.00%	6.00%	4.20%	4.15%	7.47%	4.70%
2033	4.00%	6.22%	6.22%	4.30%	4.22%	7.86%	4.78%
2034	4.00%	6.44%	6.44%	4.40%	4.30%	8.25%	4.85%
2035	4.00%	6.67%	6.67%	4.50%	4.37%	8.63%	4.93%
2036	4.00%	6.89%	6.89%	4.60%	4.45%	9.02%	5.01%
2037	4.00%	7.11%	7.11%	4.70%	4.52%	9.40%	5.09%
2038	4.00%	7.33%	7.33%	4.79%	4.60%	9.79%	5.16%
2039	4.00%	7.56%	7.56%	4.89%	4.67%	10.18%	5.24%
2040	4.00%	7.78%	7.78%	4.99%	4.75%	10.56%	5.32%

Table 1.6: Impact on PRSI Class S of various policy options on a yearly basis

1.3 Other Policy Impacts – SPC indexation at varying levels

Projected (surplus) / shortfall (as a % GNI*) reflecting varying indexation levels for SPC is set out in Figure 1.2.

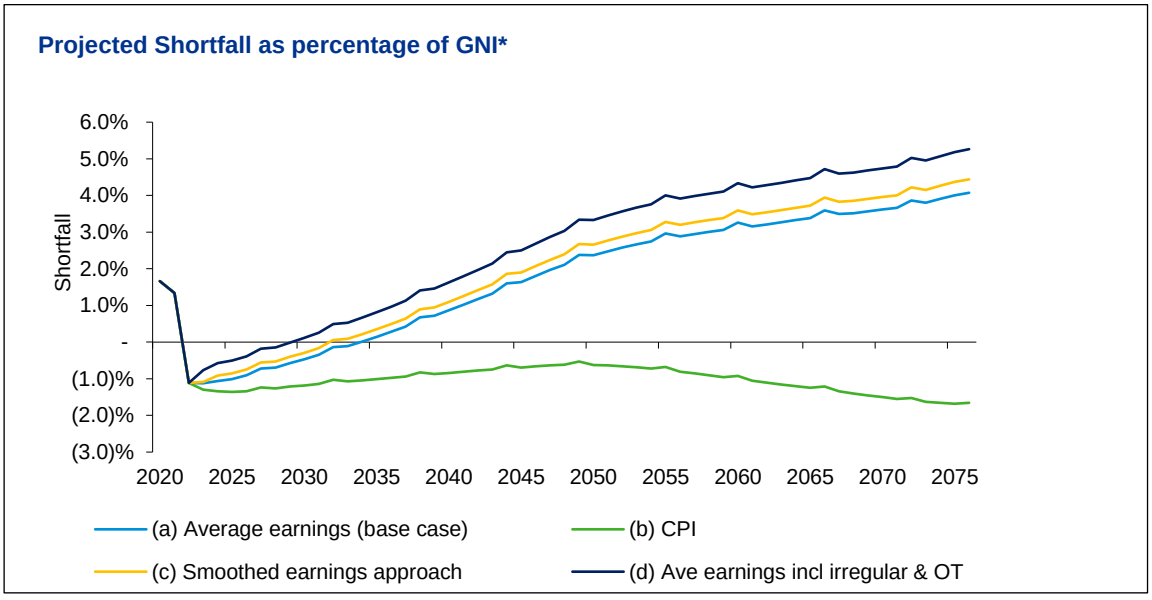

Figure 1.2: Projected (surplus) / shortfall as a % GNI% - varying indexation levels

Under the base case assumption, (the blue line in the chart above), a small shortfall arises by year 2034, rising to 0.9% of GNI* in 2040 and to 4.1% of GNI* by the end of the projection period in 2076. By contrast, under the "smoothed earnings" approach, (the orange line in the chart above) slightly higher shortfalls arise reflecting the fact that the SPC is anticipated to increase from 32% to 34% of average earnings excluding irregular and overtime. The increase is expected to have occurred by 2024 and persist thereafter. The shortfall is expected to rise to 1.1% of GNI* in 2040 and to 4.4% of GNI* by the end of the projection period in 2076.

If benefits are projected to increase in line with CPI or HICP measures of price inflation in the long term rather than real earnings growth, the Fund remains in surplus throughout the projection period. Indexing SPC in line with price inflation which is assumed to be less than average earnings growth throughout the period (by circa 1.5% p.a.), would result in an increase in the "at risk of poverty" threshold measure for those over SPA. Further analysis is included in Chapter 10.

1.4 Value for money

Value for money was assessed for a variety of different populations, based on the class of contributions and the earnings of individuals, and further discussed in Chapter 11. Some observations in relation to value for money from the Fund:

- For those at the higher end of the income distribution, the Fund is re-distributive and these individuals generally get back less than they pay in.
- Class S individuals receive materially better value for money from the Fund as compared with their Class A counterparts despite not having access to some short-term benefits such as Illness Benefit, as the PRSI rate is much lower than the combined employee and employer PRSI rate for Class A.
- Those who join the PRSI system later in life achieve better value for money under the "yearly average" approach given the design of the rate bands
- Receiving a high number of credited contributions increases value for money markedly, as additional benefits are earned without the requirement to pay PRSI for the duration of the credited period.

1.5 Macroeconomic environment September 2022 and uncertainty

The results in this Review were produced at a time of high macroeconomic uncertainty. While the effective date of the review is 31 December 2020, we have placed significant weight on changes between the effective date and date of signing the report.

PRSI receipts are materially ahead of expectations despite the Covid-19 pandemic reflecting the strong growth in the labour market to 2.55 million people as per CSO data from the Labour Force Survey Quarter 2 2022 and the current unemployment rate of 4.5%. Cashflow figures reflect the unanticipated recovery post the Covid 19 pandemic and reflect an estimate for PRSI for 2022 based on Department of Finance fiscal data to end July 2022 as reported in August. Overall, the Fund is projected to have a material surplus in 2022, currently estimated at circa €2.7 billion.

The emergence of inflation and heightened inflation risk has been a major theme since 2021. We would point out that price inflation itself does not impact on the overall funding position of the Fund in instances where PRSI receipts and benefits increase broadly in line. The position

can deteriorate in the short term in instances where for example price inflation exceeds earnings inflation and the higher price inflation feeds through to benefit inflation.

Projections are highly sensitive to the finances of the Fund in the base year of the projection in addition to the assumptions made. Macro-economic assumptions adopted reflect those set out in the Stability Programme Update 2022 for the years 2023 – 2025, thereafter reverting to the long-term assumptions used for the purposes of the 2021 Ageing Report.

1.6 Adverse scenarios / shocks

We have illustrated in Tables 1.7 and 1.8 the impact on the Fund finances of the scenario where the conflict in the Ukraine continues coupled with a multi-year recession and permanently lower long term growth. This scenario is described more fully at subsection 9.6.7.

This particularly adverse scenario is highlighted as an example of the difference such shocks can make to the Fund finances and on the potential incremental PRSI requirements.

Impact of adverse scenario due to Multi-Year Recession, Ukrainian conflict continuing, lower growth (versus base case)										
	Base Case					Very adverse scenario				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.0	2.8	1.1%	5.4	12.2	12.9	(0.7)	(0.3)%	2.0
2024	15.4	12.7	2.7	1.1%	8.1	11.1	14.2	(3.1)	(1.6)%	(1.2)
2025	16.0	13.3	2.6	1.0%	10.8	11.8	14.5	(2.7)	(1.3)%	(3.9)
2026	16.4	13.9	2.4	0.9%	13.2	10.4	15.0	(4.6)	(2.3)%	(8.5)
2027	16.8	14.8	2.0	0.7%	15.2	10.7	15.7	(5.0)	(2.5)%	(13.5)
2028	17.1	15.2	1.9	0.7%	17.1	10.9	16.0	(5.0)	(2.5)%	(18.5)
2029	17.5	15.8	1.6	0.6%	18.8	11.1	16.5	(5.3)	(2.6)%	(23.9)
2030	17.8	16.5	1.3	0.5%	20.1	11.4	17.0	(5.6)	(2.7)%	(29.5)
2035	19.6	20.1	(0.5)	(0.1)%	21.4	12.5	20.3	(7.7)	(3.4)%	(63.4)
2040	21.5	24.5	(3.0)	(0.9)%	11.4	13.7	24.7	(11.0)	(4.4)%	(111.8)
2045	23.3	29.5	(6.1)	(1.6)%	(13.2)	14.9	29.7	(14.8)	(5.4)%	(178.4)
2050	25.3	34.9	(9.6)	(2.4)%	(55.1)	16.1	35.1	(19.0)	(6.4)%	(265.7)
2055	27.4	40.4	(13.0)	(3.0)%	(112.4)	17.5	40.6	(23.2)	(7.2)%	(372.1)
2060	29.8	45.3	(15.6)	(3.3)%	(182.5)	19.0	45.6	(26.6)	(7.7)%	(495.5)
2065	32.3	49.8	(17.5)	(3.4)%	(264.6)	20.6	50.1	(29.5)	(7.8)%	(635.5)
2070	34.8	55.0	(20.2)	(3.6)%	(361.1)	22.2	55.5	(33.3)	(8.2)%	(795.2)
2076	38.1	63.0	(24.9)	(4.1)%	(498.5)	24.3	63.6	(39.3)	(8.8)%	(1,015.7)

Table 1.7: Adverse scenario due to multi-year recession, conflict in Ukraine continues, permanently lower growth v base case

Resulting incremental PRSI requirements for various Policy Options – very adverse scenario	
Main benefit considerations for SPC	Phase out of the yearly average approach for calculation. SPC increases in line with the "smoothed earnings" approach to indexation.
Policy Option 1: A modified version of Pensions Commission package 1 with material Class S increases	
Self-employed (Class S)	Increase from 4% to the average of the then Class A employee and employer rate by 2040. Class S increases assumed to commence from 2024+
Class A Employer and employees	1.48 percentage point increase by 2030; 3.41 percentage point increase by 2040.
Policy Option 1(a): As per Policy Option 1 but with Class A rate increases commencing from 2024	
Self-employed (Class S)	Increase from 4% to the average of the then Class A employee and employer rate by 2040. Class S increases assumed to commence from 2024+
Class A Employer and employees	As Policy Option 1 as Class A increases commence earlier in this scenario at any rate
Policy Option 2: PRSI rate increases where Class S increases in sync with the Class A employee rate	
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Class A Employer and employees	1.62 percentage point increase by 2030; 3.51 percentage point increase by 2040.
Policy Option 2(a): As per Policy Option 2 but also reflecting an increase in the age exemption limit to age 70	
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Class A Employer and employees	1.41 percentage point increase by 2030; 3.35 percentage point increase by 2040.
Policy Option 3: As Policy Option 1 but with Class S rate increasing to Class A employer rate by 2040	
Self-employed (Class S)	Increase from 4% to Class A employer rate by 2040
Class A Employer and employees	1.38 percentage point increase by 2030; 3.27 percentage point increase by 2040

Table 1.8 Impact on PRSI under each Policy Option examined –scenario of multi-year recession, conflict in Ukraine continues, permanently lower growth

The PRSI implications for the less severe Ukrainian conflict scenario continuing (in the absence of permanently lower growth) as described more fully at subsection 9.6.1 is shown at Table 1.9.

Resulting incremental PRSI requirements for various Policy Options – Ukrainian conflict continues	
Main benefit considerations for SPC	Phase out of the yearly average approach for calculation SPC increases in line with the "smoothed earnings" approach to indexation.
Policy Option 1: A modified version of Pensions Commission package 1 with material Class S increases	
Self-employed (Class S)	Increase from 4% to the average of the then Class A employee and employer rate by 2040. Class S increases assumed to commence from 2024+
Class A Employer and employees	No increase by 2030; 1.07 percentage point increase by 2040
Policy Option 1(a): As per Policy Option 1 but with Class A rate increases commencing from 2024	
Self-employed (Class S)	Increase from 4% to the average of the then Class A employee and employer rate by 2040. Class S increases assumed to commence from 2024+
Class A Employer and employees	0.22 percentage point increase by 2030; 0.85 percentage point increase by 2040.
Policy Option 2: PRSI rate increases where Class S increases in sync with the Class A employee rate	
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Class A Employer and employees	No increase by 2030; 1.32 percentage point increase by 2040.
Policy Option 2(a): As per Policy Option 2 but also reflecting an increase in the age exemption limit to age 70	
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Class A Employer and employees	No increase by 2030; 1.07 percentage point increase by 2040.
Policy Option 3: As Policy Option 1 but with Class S rate increasing to Class A employer rate by 2040	
Self-employed (Class S)	Increase from 4% to Class A employer rate by 2040
Class A Employer and employees	No increase by 2030; 0.83 percentage point increase by 2040

Table 1.9 Impact on PRSI under each Policy Option examined – scenario of Ukrainian conflict continuing

In tables 1.10 and 1.11 we have summarised the potential impact of shocks on the Fund reflecting a shock against (i) the "base case" i.e. existing legislative basis and (ii) the base case reflecting "agreed changes" recently announced by the Minister and described in Appendix 8 coupled with the "smoothed earnings" approach to indexation. The "smoothed earnings" approach to indexation is anticipated to result in SPC increasing from its current 32% of average earnings (excluding irregular earnings and overtime) to 34% by 2024. The "accumulated deficits" in Table 1.10 is the summation of the opening surplus plus annual surplus / shortfalls each year. It is equivalent to the projected surplus by year end 2022 of €2.7 billion plus the net present value of the future shortfalls at a 0% real discount rate.

		Option		
		No change/As-is	Agreed Changes & "smoothed earnings" indexation approach	Agreed Changes & smoothed earnings approach plus "full projection period" PRSI Rate Increases
Macro-Economic Scenarios	Base Case	(498.5)	(475.5)	0.0
	Base Case plus Ukraine Shock	(536.8)	(513.8)	(48.9)
	Base Case plus multi-year Recession	(526.7)	(503.9)	(29.0)
	Base Case plus Ukraine and Multi-Year Recession	(566.1)	(543.3)	(79.0)
	Base Case plus Ukraine, Multi-Year Recession and lower long term growth	(1,015.7)	(993.0)	(689.6)

Table 1.10: Accumulated deficits (€ billions) at the end of the projection period (2076)

Further detail on the potential impact of shocks on the Fund in terms of accumulated deficits and years in which the Fund is projected to enter deficit is included at 9.6.10.

		Option		
		No change/As-is	Agreed Changes & "smoothed earnings" indexation approach	Agreed Changes & smoothed earnings approach plus "full projection period" PRSI Rate Increases
Macro-Economic Scenarios	Base Case	2043	2032	2077
	Base Case plus Ukraine Shock	2041	2031	2042
	Base Case plus multi-year Recession	2024	2023	2023
	Base Case plus Ukraine and Multi-Year Recession	2024	2023	2023
	Base Case plus Ukraine, Multi-Year Recession and lower long term growth	2024	2023	2023

Table 1.11: First year in which the Fund enters deficit / the surplus is depleted

A wide variety of stress tests and scenarios have been analysed and summarised in Chapter 9 and Appendix 8.

2 Introduction and Scope

This chapter includes:

- Legislative background and scope of the Review
- Contents of the Review
- Explanation of the projected figures in this Review

2.1 Background to this Review

The Social Welfare Consolidation Act, 2005 makes provision for the carrying out of actuarial reviews of the Social Insurance Fund at five yearly intervals.

The first Actuarial Review of the Social Insurance Fund ("Fund") was completed in 2002 (with an effective date of 2000), with the most recent review carried out in 2017 with an effective date of 2015.

Following a public tender process, the Department requested KPMG to prepare the fifth actuarial review ("2020 Review"). It is anticipated that this Review will provide information to the Department to assist short, medium and long-term policy development in relation to the social insurance system generally.

The 2020 Review builds on the findings of the 2000, 2005, 2010 and 2015 Reviews and incorporates all legislated changes expected to impact on the Fund over the course of the projection period (the 55-year period from 2021 to 2076).

The 2015 Review base case reflected legislated for reforms at that time and this approach was taken for consistency with the new EU reporting requirements of Social Security benefits. At this review we were requested to examine the base case reflecting the current legislative environment but also a second scenario reflecting anticipated reforms arising on foot of the outcome of the Pensions Commission report and the subsequent debate arising.

A report is required to be made to the Minister for Social Protection on completion of each Review, and a copy of the report is to be laid before each house of the Oireachtas within 6 months of the completion of the Review.

2.2 Challenges facing the Social Insurance Fund

The challenges facing the Fund and in particular the pension related expenditures are mirrored by many social security programs internationally and have been well documented. The age structure of the Irish population (similar to many countries in the EU) is projected to

dramatically change in the coming decades due to the dynamics of fertility, life expectancy, and migration rates. The pensioner support ratio underpinning the population projections used for the purpose for this Review is expected to reduce from 4.4 at 2020 to 3.6 by 2030 and 2.9 by 2040. The challenge with the increasing number of upcoming pensioners against a backdrop of a smaller cohort of contributors is that the State pension continues to be paid at a level so as to ensure recipients maintain a standard of living, cognisant of "at risk of poverty" thresholds.

Political decisions are being planned, considered and/or made in order to meet these challenges. A Commission on Pensions was established in 2020 which reported in 2021. At this Review we were instructed to provide an update and refinement to a number of sustainability package recommendations made by the Pensions Commission in light of updated 2022 data and reflecting the debate post publication.

2.3 Scope of work

The full scope of work was set out in the Request for Tender ("RFT") document issued by the Department in January 2022. Our Review addresses each of the requirements therein.

The principal output of the Review relates to projections of income and expenditure of the Fund over the short, medium, and long term (up to 2076). The projections were carried out using a principal or "base case" set of assumptions about the future (reflecting current legislative requirements and alternative Pensions Commission scenarios), and also a wide range of alternative assumptions.

Other policy scenarios examined included an extension of illness and other benefits to the self-employed and the costings associated with increasing benefits payments at varying indexation levels.

As with previous reviews, a key component of the exercise involved the calculation and impact of:

- "breakeven contribution rates" (multiples of current PRSI contributions required to balance income and expenditure);
- varying subvention (transfers from the Exchequer) amounts;
- combination of multiples of current PRSI contributions and Exchequer subvention amounts.

In addition to the core income and expenditure projections, the Review examines a range of "value for money" indicators for a number of different contributors to the Fund.

2.4 Guide to this Review

A guide to the remainder of this Review is set out in Table 2.1 below.

Chapter	Title	Description
Chapter 3	**Recent developments in relation to the Fund**	— Outlines effected and proposed changes to the income and benefits paid by the Fund and the timeframe for the introduction of these changes
Chapter 4	**Data used in the Review**	— Main categories and sources of data used in the Review
Chapter 5	**Methodology and Assumptions**	— Introduction to the methodology and assumptions employed in our assessment of the projected income and expenditure of the Fund — Description of how individual contribution and expenditure items were modelled as part of this Review
Chapter 6	**Population and Labour Force Projections**	— Population Projections – information received and analysis — Assumptions underlying the population projections — Labour Force Projections – information received and analysis — Changes to the population projections since 2015 Review — Observations relating to the ageing of the population
Chapter 7	**Base Case Results**	— Projections of the level of income and expenditure up to 2076. We highlight the shortfall that arises in 2022 real terms and as a percentage of GDP, GNI* — Break-even contribution rates needed to meet the total expenditure for a range of future time periods — Comparison over the projection period of overall expenditure of the long and short-term benefits — Discounted value of the sum of the future projected shortfalls of the Fund — Comment on sustainability
Chapter 8	**Comparison with 2015 Review**	— Principal differences between this Review and the 2015 Review in the areas of assumptions, data, and enacted changes to benefit entitlements and PRSI rates.
Chapter 9	**Sensitivity and Scenario analysis**	— Projections on variant demographic assumptions — Projections on variant economic assumptions — Projections on variant labour market assumptions — Impact of various shocks as compared with base case including due to prolonged fall-out from conflict in Ukraine — Summary of accumulated deficits in the Fund and the year in which the Fund enters deficit under a variety of shocks
Chapter 10	**Policy Impacts**	**Pensions Commission analysis** — Pensions Commission package 1 updated and with small modifications (“Policy Option 1”) — Policy Option 2, Policy Option 2(a), Policy Option 3 **Full projection period scenario** — A linear progression of PRSI rates over the full projection period which allows for opening surplus and calculated such that accumulated deficit is zero in 2076

Chapter	Title	Description
		Policy Options for benefit indexation — In line with Consumer prices (CPI) — In line with real earnings growth index — In line with "smoothed earnings" approach — Average earnings with and without irregular earnings **Class S (self-employed) costings / options** — Extension of Illness Benefit to Class S — Extension of Illness and other ancillary benefits to Class S.
Chapter 11	**Value for money analysis**	— VFM differences by age, gender, early / late entrant, income band — Case studies / VFM impact on a variety of contributors
Appendix 1	**How the Social Insurance Fund works**	— Benefits and contributions to the Fund
Appendix 2	**Accounts and short term estimates**	— Accounts of the Fund (2016 - 2020) with Department (further) revised estimates included for 2021 and 2022
Appendix 3	**Summary data received and checks performed**	— Data provided and high-level checks performed
Appendix 4	**Details on Homemaking and Home Caring allowance**	— Review of allowance made for homemaking and Home Caring periods assumptions
Appendix 5	**Detailed projections on base case assumptions**	— Detailed individual expenditure and income projections under the base scenario
Appendix 6	**Choice of discount rate assumption**	— Choice of discount rate for the actuarial review
Appendix 7	**Smoothed earnings approach to indexation**	— DSP paper setting out smoothed earnings approach
Appendix 8	**Additional shocks**	— Shocks against the "alternative base case" reflecting current PRSI rates — Shocks against the "alternative base case" reflecting PRSI rates calculated under the "full projection period" scenario
Appendix 9	**Scope of Services**	— Detailed scope as set out in the RFT
Appendix 10	**Glossary**	— Glossary of Terms used
Appendix 11	**Reliances and Limitations**	— Reliance and Limitations

Table 2.1: Guide to the report

Notes in relation to this Review

The projections are based on a wide range of assumptions about the future which are unlikely to be borne out in reality. We would encourage readers to focus on the trends which emerge over the projection period of the Review and on the relativities between various items of income and expenditure rather than on the results for individual years.

In practice, actual experience is likely to differ from best estimates due to factors such as changes in the economic environment, demographics, regulation, economic, operational, and other factors. It must therefore be recognised that actual results will differ, perhaps materially, from those inherent in the values given.

The assumptions are described in Chapters 5 and 6. Sensitivities to the key assumptions are set out in Chapter 9. Policy impacts are considered in Chapter 10.

All figures are in 2022 real price[9] terms (i.e. net of Consumer Price Index inflation after 2022), except for the 2021 figures which are provisional outturn actual cash amounts.

This Review complies with ASP PA-2[10] version 1.2 effective March 2022 and with ISAP 2[11].

This Review should be read in its entirety, as individual sections, if read in isolation, may be misleading.

Reliances and limitations are set out in Appendix 11.

9 Real price terms rather than real earnings terms were chosen having considered the merits / demerits of the two. Real price terms was used at the previous review and therefore allows a straightforward comparison between reviews. 'Real price' terms is a more commonly adopted measure and more intuitive – it reflects the purchasing power of a given monetary sum in the future.

10 Actuarial standard of practice PA-2, General actuarial practice.

11 International Standard of Actuarial Practice 2 relating to financial analysis of social security programs reflecting conformance changes adopted 1 December 2018.

3 Recent developments in relation to the Fund

This chapter includes:

- Background to the Fund
- Recent changes to Fund expenditure, contributions, and payment rates
- Recent reforms and Government commitments to pension changes

3.1 Background to the Social Insurance Fund

The Fund is a pay-as-you-go (PAYG) social insurance scheme that is financed by contributions from employees, employers, the self-employed, voluntary contributions and by a contribution or "subvention" from the Exchequer when the cost of the benefits exceeds the contribution income.

PRSI contributions are paid into the Fund. This Fund helps to finance the wide range of contributory social insurance benefits, pensions and other payments. The primary long term benefit from the Fund is the SPC, which is payable to persons who reach the State Pension Age (currently age 66) and who satisfy the social insurance contribution conditions.

Legally the Exchequer is the residual financier of the Fund and Exchequer subventions were the norm for over 40 years – for example in 1967 the Exchequer subvention was 38% of Fund expenditure. However, no Exchequer contribution was required between 1997 and 2009 as the Fund was in surplus on foot of contributions from employers, workers and the self-employed in those years. In 2008, the current operating balance of the Fund moved into deficit and the deficit accelerated rapidly in 2009 (€2.5 billion) and 2010 (€2.75 billion) as the recession took hold. This meant that the accumulated surplus built up over 11 years was exhausted in less than 3 years. In the years 2010-2013 inclusive sizeable Exchequer subventions were made (averaging €1.7 billion over the period or just under 20% of expenditure). The subvention fell significantly in 2014 and 2015. The Fund returned to a surplus in 2016.

The Fund remained in surplus from 2016 to 2020 and no exchequer subventions were necessary. However, in 2020 the Fund surplus reduced from €3.9 billion to €0.5 billion in a year when Covid-related expenditure amounted to €3.7 billion. By 2021, the Fund was in deficit again and a subvention of €3.8 billion was made with direct Covid-related expenditure in that year estimated at €3.4 billion. In 2022, it is expected that the Fund will have a material surplus of circa €2.7 billion based on the Revised Estimates for Public Services 2022 and reflecting higher than expected PRSI receipts. The PRSI estimate reflects analysis of fiscal data "Monthly

revenues and expenditures of all subsectors of general government" published by the Department of Finance for each month in 2022 up to and including July. The estimate which is subject to uncertainty given volatility in PRSI receipts month on month anticipates the seasonal increase in PRSI observed in November as in previous years.

The vast majority (circa 65%) of PRSI contributors pay at Class A, with another circa 10% paying at Class S (i.e. the self-employed) and circa 25% paying into the remaining PRSI Classes. At a glance, Table 3.1 provides details of the benefit entitlements available to each of the PRSI Classes.

Benefit Entitlements by PRSI Class

PRSI Classes	A	B	C	D	E	H	J	K	M	P	S	Voluntary Contributions
Adoptive Benefit	✓				✓	✓					✓	
Carer's Benefit	✓	✓	✓	✓	✓	✓						
Guardian's Payment (Contributory)	✓	✓	✓	✓	✓	✓					✓	✓
Health and Safety Benefit	✓				✓	✓						
Illness Benefit	✓				✓	✓				✓*		
Invalidity Pension	✓				✓	✓					✓	
Jobseeker's Benefit	✓					✓				✓*		
Jobseeker's Benefit (Self-Employed)											✓	
Benefit Payment for 65 Year Olds	✓					✓				✓	✓	
Maternity Benefit	✓				✓	✓					✓	
Occupational Injuries Benefit	✓	✓*		✓			✓		✓**			
Parent's Benefit	✓	✓	✓	✓	✓	✓					✓	
Partial Capacity Benefit	✓										✓	
Paternity Benefit	✓				✓	✓					✓	
State Pension (Contributory)	✓				✓	✓					✓	✓***
Treatment Benefit	✓				✓	✓				✓	✓	
Widows', Widowers' and Surviving Civil Partner's (Contributory) Pension	✓	✓	✓	✓	✓	✓					✓	✓

Table 3.1: Benefits available by Class of PRSI Contributor
* Class B and P - limited benefit; ** Class M - limited circumstances; *** Not applicable to former Class B, C and D contributors.

3.2 Key legislative changes impacting since 2015 Review

Establishment of Pensions Commission

The 2020 Programme for Government provided for the establishment of a Commission on Pensions: "to examine sustainability and eligibility issues with State Pensions and the Social Insurance Fund. The Commission will outline options for Government to address issues including qualifying age, contribution rates, total contributions and eligibility requirements."

The Pensions Commission was established in November 2020 and submitted a report on its work, findings, options and recommendations to the Minister in Autumn 2021.

Unwinding of the SPA increase change in Social Welfare Act 2020

The Social Welfare and Pensions Act 2011 provided for the abolition of the State Pension (Transition) at age 65 with effect from 2014. The legislation also provided that the State Pension Age would increase from age 66 to age 67 in 2021 and to age 68 in 2028.

The Social Welfare Act 2020 repealed the legislative provisions increasing the State Pension Age ("SPA"). The increase in the SPA, previously planned to take effect on 1st January 2021, was deferred and remains at 66.

Social Welfare, Pensions, and Civil Registration Act 2018

Section 9 of the Social Welfare, Pensions, and Civil Registration Act 2018 introduced a Total Contributions Approach ("TCA") including new "Home Caring Periods" of up to 20 years in order to address anomalies from the yearly averaging system.

The TCA calculation option with substantial Home Caring Periods is currently available to all people who reach state pension age after 1st September 2012, when the revised rate bands took effect, and the "better of" the TCA and "yearly average" entitlement is paid.

3.3 Further detail on changes to benefit entitlements

New approach for calculating SPC – TCA approach

The intention per the National Pensions Framework published in March 2010 was that a TCA approach which ensures that a person's pension payments reflect more fully and fairly a person's lifetime contributions history, would replace the "yearly average" approach for all new State Pension (Contributory) applicants from around 2020 onwards.

Under the TCA, subject to satisfiying the minimum qualification conditions[12], a person who has accumulated 40 years of paid and credited social insurance contributions will qualify for the maximum rate of SPC with proportionally lower rates payable to people with fewer contributions. Home Caring Periods of up to 20 years (including periods prior to 1994) can be applied for under the TCA. The TCA calculation is based on the totality of a person's paid and credited social insurance contributions history prior to SPA, including the Home Caring Periods. Credited contributions are capped at 520 (10 years) and the aggregate of Home Caring Periods and credited contributions cannot exceed 1,040 (20 years).

[12] Other qualifying conditions for the scheme are unchanged e.g.a person must have commenced paying PRSI before age 56 and for those reaching SPA after 6 April 2012 there remains a requirement to have 520 paid PRSI contributions (10 years' contributions). The requirement to have commenced paying PRSI by no later than age 56 also remains.

The option of applying for a means tested non-contributory pension, which can pay up to 95% of the maximum contributory rate remains in place. Currently, over 70% of all non-contributory pensions are paid at the maximum rate.

"Better of" formula which can apply to all those reaching SPA on / after September 2012

The level of benefits awarded on application for SPC is broadly determined by paid and credited contributions. For the State Pension (Contributory), on application at State Pension Age, applicants satisfying the qualifying conditions are awarded some proportion of the maximum rate of State Pension (Contributory), currently €253.30 per week (2022).

Prior to the introduction of the "better of" formula, a person's pension entitlement on reaching SPA was calculated using a "yearly average" approach (only).

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. 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. Entitlement is then banded with a yearly average of 48 required for a full rate pension. (Separate arrangements apply for those who reach pension age while on a Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension 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.

Table 3.2 shows the relationship between the yearly average number of contributions and pro-rata pensions for applicants after 1 September 2012:

YA rate band	% of Maximum
48 or more	100%
40-47	98%
30-39	90%
20-29	85%
15-19	65%
10 to 14	40%

Table 3.2: Relationship between yearly average contributions and pension rates for post 2012 SPC applicants

The rate of SPC payable is the greater of that person's entitlement under the "yearly average" and their entitlement under the TCA as described above.

Benefit Payment for 65 Year Olds

From 25 January 2021 a benefit payment for 65 Year Olds[13] is available for people between 65 and 66 years who are no longer engaged in employment or self-employment. Eligibility for

[13] gov.ie - Benefit Payment for 65 Year Olds (www.gov.ie)

the payment is determined by a person's PRSI contributions. The rate of payment is €208 per week (the same rate as Jobseeker's Benefit) with an increase for qualified adults/children, if eligible.

Invalidity Pension – extension to Class S

From 1 December 2017 those paying PRSI at Class S have the option of applying for Invalidity Pension on a similar basis to those who are employees. The measure gives the self-employed access to the safety-net of State income supports if they have a serious illness or injury that prevents them from working. To qualify for an Invalidity Pension, a self-employed person or employee must have:

- 260 PRSI paid contributions (Class A, E, H or S) since they started paying social insurance and
- 48 PRSI paid or credited contributions (Class A, E, H or S) in the last complete contribution year or the second last contribution year before the start date of a person's permanent incapacity for work.

Other benefits introduced / extended

A number of other benefits were introduced /extended since the 2015 Review was conducted including Jobseeker's Benefit (Self-Employed), Parent's Benefit and Paternity Benefit. In addition to the introduction of additional benefits, the qualifying criteria for the Treatment Benefit Scheme has been adjusted to encompass more contributors to the Fund.

3.4 Changes to PRSI in recent years

There were a number of changes made to PRSI since the 2015 Review (which reflected the position up to date of signing in 2017).

PRSI changes over Budgets 2018 – 2022 are summarised below:

2018

From 1 January 2018 the National Training Fund Levy (NTFL) increased and as it is collected as part of the employer PRSI contribution, the employer PRSI rates increased as follows:

- 8.5% increased to 8.6%
- 10.75% increased to 10.85%

2019

From 1 January 2019, employer PRSI contribution rates under Class A and Class H increased by 0.1% to fund increases in the NTFL. The employer PRSI rates increased to 8.7% and 10.95% respectively. The Class A employee earnings threshold for charging the 10.95% rate of employer PRSI increased to €386.

2020

From 1 January 2020, a further 0.1% increase in the NTFL increased employers PRSI rates to 8.8% and 11.05%, respectively. From the 1 February 2020, the Class A employee earnings threshold for charging the 11.05% rate of employer PRSI increased to €395.

2021

From 1 January 2021 the Class A employee earnings threshold for charging the 11.05% rate of employer PRSI increased to €398.

2022

From 1 January 2022, the Class A employee earnings threshold for charging the 11.05% rate of employer PRSI increased to €410.

4 Data used in the Review

This chapter sets out the main categories and sources of data used in the Review.

4.1 Overview of data provided to perform Review

The data provided to us for the purposes of performing the Review can be categorised broadly as follows:

— Information on contributions and benefits from the Department's operational computer systems, in particular the central records system.
— Financial data from:
  - The Fund Accounts 2016-2020.
  - Summary data provided in the "Statistical Information on Social Welfare Services Annual report 2020" ("the Statistics Report") and equivalent historic reports for 2016 to 2020;
  - 2022 Revised Estimates and the provisional financial outturn for 2021 supplied by the Department[14].
— Macroeconomic and demographic data:
  - Short term macroeconomic and demographic assumptions up to and including 2025 produced as part of the Stability Programme Update published in April 2022[15];
  - Long term macroeconomic and demographic data used by the European Commission as part of its 2021 Ageing Report[16]
— Benefit and contribution data for each line item in the SIF (discussed further below).

4.2 Utilisation of the data

The data is used in three main areas:

— As the starting point of the projections, the data, comprising population data, benefit expenditure information and PRSI contribution information is summarised further in Sections 4.3 to 4.5.
— To assist in the choice of appropriate assumptions (although allowance is also made for expected future trends which may not yet be reflected in statistics). Assumptions are discussed further in Chapter 5.

[14] 2021 Provisional Financial Outturn and 2022 revised estimates included at this link: https://assets.gov.ie/134267/96a8af61-53f4-4fe1-baa6-4fa84aee14f6.pdf
[15] Assumptions included in the Stability Programme Update April 2022 at this link: https://assets.gov.ie/222651/994836b7-c9a9-4557-9ecc-b66f8b0e23c4.pdf
[16] 2021 Ageing Report: https://ec.europa.eu/info/sites/default/files/economy-finance/ip148_en.pdf

— For comparison with the projections made at the previous Review with a view to reconciling actual versus expected amounts.

4.3 Benefit data

For the SPC & WPC, we received the total number of recipients, claimants and beneficiaries split by age, gender and scheme component type and rate band (where appropriate) for 2020. We received granular data on new entries to SPC in 2018, 2019, and 2020, showing entitlement by age / gender / SPC percentage rate.

For other benefits such as the Invalidity Pension, we received data but for each year from 2016 up to and including 2020. Details on total benefit payments from 2016-2020 were accessed from the Statistics Reports.

For all the significant benefits we received details of recipients at each age and gender and appropriate rate band in 2020 and a 3, 4, or 5-year history. In addition:

— For Jobseeker's Benefit, we received data which was broken down into sub-headings of scheme (e.g. Credits Only), duration, age, gender, and weekly average rate. Included in this dataset was data relating to the Pandemic Unemployment Payment.
— For Illness Benefit, we received the total population of recipients in each year from 2016 to 2020, broken down by age and gender. For the year 2020, there was a further disaggregation provided to reflect those in receipt of the 'Continuous Duration' Illness Benefit (reflecting a closed and declining population) and those receiving Illness Benefit for a maximum of 2 years.

4.4 Population and Labour Force data

4.4.1 Population data

Data for the population projections was taken from the 2019 based population projections produced by Eurostat. These are the population projections which form the basis of the published 2021 Ageing Report.

We assembled the following demographic data provided as part of the projections produced by Eurostat for each individual year from 2019 and split by age and gender:

— Population projections;
— Migration numbers;
— Fertility rates;
— Mortality rates and resulting life expectancies.

It was important to replicate the projections produced by Eurostat from one period to the next in order to allow individual items (e.g. net migration) to be analysed and stress tested in our alternative scenarios covered in Chapter 9.

In the 2015 Review, we overlaid the population data received with the population data from the Census in 2016. As Census 2021 was deferred to 2022 due to Covid-19, in the absence of revised population data from the CSO we have performed no similar overlay for this Review.

As part of the 2015 Review, we also made an adjustment to mortality and population projections reflecting the CSO's most recent projections. After considering the CSO's most recent projections (population and labour force projection study 2017-2051), it was decided to utilise the data reflecting the Eurostat 2019 study only (which forms the basis for the demographic assumptions of the 2021 Ageing Report), given the similarity between the two data sources. Further discussion of mortality and analysis on sensitivity to this assumption is included in Chapters 6 and 9.

4.4.2 Labour Force Data

Data for the labour force projections was taken from the 2019 labour force projections[17] produced by the European Commission for the purposes of the 2021 Ageing Working Group report.

The following demographic data split by age and gender was provided at individual years:

- Labour force numbers;
- Labour force participation rates;
- Employment and unemployment rates and numbers.

Further detail is provided in Chapter 6.

4.5 Contribution Data

Contribution data was provided by the Department. This data came in the following format:

4.5.1 PRSI Contribution Data

- Total PRSI contributions paid, total earnings and weeks of insurable employment in 2016, 2017, 2018, 2019 and 2020. The data was split by PRSI Class in order to allow us visibility

[17] The end of the projection period for the labour force projections was 2070. In order to project to the end of the projection period for the core actuarial review (i.e. 2076) we assumed that the rates in force in 2070 would remain constant thereafter. The population projections on the other hand were available out to 2080 and therefore no assumption or extrapolation was required.

of the breakdown across Class A, Class S, and Other. This data was used as the starting point to project the PRSI contribution base into the future.

— Contribution history of datasets of contributors to the PRSI system reaching SPA in a range of future sample years.

    - Datasets using pseudonymised IDs for those who reached or are expected to reach SPA in each year 2018-2030 including age, gender, PRSI Class, and earnings.

Each dataset of those reaching SPA within a given year included a summary of PRSI history (contributions and credits) for each individual along with the start year of contributions. The data received enabled us to quantify the SPC entitlement using the yearly average ("YA"), the TCA entitlement and also the "better of" the two, as was used for the purposes of the base case calculations and reflected in the modelling.

4.5.2 Home Caring Periods Data

We received datasets for those reaching SPA in each year 2018-2030. These datasets contained a detailed contribution and credit history of individuals by year of contribution with a data point for each year of contribution. Age, gender, number and class of contribution and credits by year, along with an additional indicator for caring period was included in these datasets.

4.6 Verification of the data

A summary of key data received and a high-level description of checks performed is set out in Appendix 3. KPMG performed a variety of reasonableness checks on the data for consistency with other sources. However, KPMG does not accept responsibility for any inaccuracies in the data supplied.

5 Methodology and Assumptions

This chapter looks at the methodology used at this Review for the various line items with a focus on the most material items

5.1 Methodology

The starting point for the expenditure projections was the 2021 and 2022 estimates of income and expenditure based on the data contained in "Further Revised Estimates for Public Services" provided by the Department. The starting point for the income projections was an estimate of overall PRSI for 2022 reflecting information in monthly fiscal data published by the Department of Finance up to and including July 2022.

From 2023 onwards the approach to projecting future income and expenditure was as follows:

- Macroeconomic and demographic assumptions were analysed and agreed with the Department to form the basis of our projections for the population, labour force and macroeconomic variables affecting the Fund (e.g. real earnings growth).
- We gathered the relevant data on the Fund and analysed and cross-checked this data with various sources of information for consistency. (Details of the variety of checks performed on the data are included in Appendix 3).
- We developed a detailed projection model to project the future population structure as well as the future expenditure on benefits (both long term and short term) and contributions to the Fund.
- For each benefit category we separately modelled the expected number of recipients (taking account of our modelled population structure) and associated benefit expenditure.
- We aggregated the results of each benefit by category and compared with projected PRSI contributions in each future year to provide an overall picture of the costs emerging through time

Chapter 6 provides more detail on the population and labour force projection methodology.

5.2 Assumptions

5.2.1 Introduction

A significant number of assumptions were required to project the future development of the Fund over a 55-year period.

The base case macroeconomic assumptions are consistent with the assumptions used by the Department of Finance for current projection purposes and public policy.

For the base case, we have used the 2022 estimates for income and expenditure as described at section 5.1 and 2023 - 2025 short term projections set out by the Department of Finance in the Stability Programme Update ("SPU") of April 2022. The assumptions underpinning the long-term projections (2026+) were based on projections by the European Commission and forming the basis of the 2021 Ageing Report.

Thereafter, the demographic assumptions and macroeconomic assumptions from 2026 onwards are as per those used in the Ageing Report. Further detail on all demographic assumptions is set out in Chapter 6.

We have considered the reasonableness of the assumptions as a whole and consider the base case assumptions to be reasonable for the purposes of the Review.

5.2.2 Assumptions required

The main categories of assumptions used in the Review are as follows:

- Demographic and labour force assumptions
- Macroeconomic assumptions
- Assumptions about the rules and rates prevailing (e.g. ceilings and thresholds for PRSI purposes)
- Scheme specific assumptions e.g. the numbers qualifying for SPC and at varying rate bands for each future year, which in turn requires an assumption about the typical PRSI contribution record at SPA (i.e. a total number of paid and "credited" contributions historically and into the future).

The following sections deal with each of these in turn.

5.2.3 Demographic and Labour Force Assumptions

The demographic assumptions coincide with those used for the purposes of the 2021 Ageing Report with an overlay of employment growth rates for the years 2023 - 2025 as set out in the SPU. Full details are provided in Chapter 6.

5.2.4 Macroeconomic Assumptions

Table 5.1 summaries the main macroeconomic assumptions used in the base case:

Assumption (%)						
Year	Real GDP Growth	Real GNI* Growth	Price Inflation	Real Earnings Growth	Unemployment Rate	Employment Growth
2023	4.4	3.1	3.0	2.3	5.4	2.1
2024	4.0	3.2	2.2	2.2	5.2	1.7
2025	3.8	3.3	2.1	2.1	4.9	1.7
2026-2030	1.7	1.7	2.0	1.3	6.6	0.9
2031-2035	1.8	1.8	2.0	1.2	6.8	0.7
2036-2040	1.8	1.8	2.0	1.5	6.7	0.3
2041-2045	1.7	1.7	2.0	1.5	6.6	0.1
2046-2050	1.6	1.6	2.0	1.5	6.4	0.0
2051-2055	1.6	1.6	2.0	1.5	6.4	0.1
2056-2060	1.7	1.7	2.0	1.5	6.4	0.1
2061-2065	1.6	1.6	2.0	1.5	6.4	0.1
2066-2070	1.5	1.5	2.0	1.5	6.4	0.0
2071-2076	1.5	1.5	2.0	1.5	6.4	0.0

Table 5.1: Assumptions used for the base case reflecting SPU 2022 for short term, 2021 Ageing report thereafter
Notes:
The price inflation assumption shown above 2021-2025 corresponds with the harmonised index of consumer prices (HICP) metric, CPI thereafter.
The figures from 2026 onward are grouped in 5-year age bands (in the main – apart from last band which includes 6 years)
Real earnings growth is assumed to coincide with labour productivity per worker.
Unemployment rate shown for AWG relates to 20–64-year-old.
Employment growth rate refers to the growth in total employment numbers for both SPU and 2021 Ageing report projections.
Source: Department of Finance and European Commission.

5.2.5 Adverse scenarios

The Department of Finance's central scenario set out in the SPU document is calibrated on the assumption that the fallout from the conflict in Ukraine slows, rather than de-rails, the economic recovery triggered by the full-elimination of pandemic-related restrictions. In relation to the latter, a key building block of the projections is the assumption that the pandemic remains in check.

As can be seen from table 5.1, there is a significant step change in the assumptions before and after 2026. This is the point at which the short and medium-term assumptions in the SPU are replaced by the longer-term projections of the Commission forming the basis of the 2021 Ageing Report.

Impact of conflict in Ukraine

The ESRI, in their Spring update of 2022, identified the ongoing crisis in Ukraine as a major concern to the Irish economy.

"The fallout from the recent invasion of Ukraine by Russia will, amongst other issues, further exacerbate inflationary pressures, which have already been evident in the economy. Any rise in inflation will pose significant challenges for households in terms of the cost of living. It also poses major questions concerning the future sources of energy used across Europe."

We have looked at the possible implications of the conflict and the implications of a multi-year recession to the Fund through scenario testing discussed further in Chapter 9.

5.3 Receipts Projections

For the projection of PRSI contribution income, the actual 2020 PRSI database was used in respect of Class A contributions and 2019 PRSI database was reflected in the projections for the Class S. In general, self-assessed tax returns for a given year are due on the 31st of October of the following year and processing of these returns is not fully completed by Revenue until several months later. This meant that self-assessed 2020 data was not fully available at the time of conducting the principal data analysis for this Review. In addition, the Department provided us with the 2021 and 2022 estimates of PRSI receipts. The following steps were performed in order to project future PRSI income:

- A split of PRSI contribution income by Class and gender, age and earnings band was provided.
- New contributors in the future are assumed to join either PRSI Class A (employed) or Class S (self-employed). From the 3.6 million records in the 2020 PRSI database we note the numbers in these two Classes account for 65% (2.4 million) and 10% (>350,000) respectively of the total PRSI contributors.
- We have assumed that for any given age and gender the proportion in Class A and Class S will remain constant.
- PRSI Classes B, C, and D (public servants employed prior to the 6th of April 1995) were grouped together and as there are no new entrants joining this category are expected to decline in number gradually until 2037 (the youngest joining in 1995 were assumed to be 18 reaching retirement age of 60 by 2037). [New hires in the public sector since 1995 are PRSI Class A contributors.]
- A number of financially immaterial social insurance Classes were grouped with PRSI Class A contributors for simplicity.
- In projecting future contributions, average earnings within each band, contribution ceilings and thresholds were increased annually at the assumed earnings growth rate.

The current PRSI contribution rates were assumed to remain constant throughout the projection period in the base case. Projections of income arising from alternative PRSI rates

which the Department requested us to model, reflecting on the recommendations from the Commission on Pensions, are outlined in Chapter 10.

5.4 Benefit Projections

5.4.1 Introduction

For each of the main benefit types the benefit amount and number of claimants were projected separately – there is detailed commentary below for each benefit category. Benefits are projected to increase in line with assumed real earnings growth from a base reflecting the rates in force in 2022.

As instructed, we have analysed alternative indexation options for benefits in Chapter 10.

Our modelling reflects all legislated for policy changes affecting expenditure including the repeal of the 2011 measure intended to increase the SPA from 66 to 67 in 2021 and 68 in 2028.

Figure 5.1 illustrates the proportion of total 2019 SIF expenditure represented by each major expenditure category[18]. We have used the 2019 data to illustrate the following proportions due to the distortions caused by the Pandemic Unemployment Payment ("PUP") in the 2020 and 2021 data.

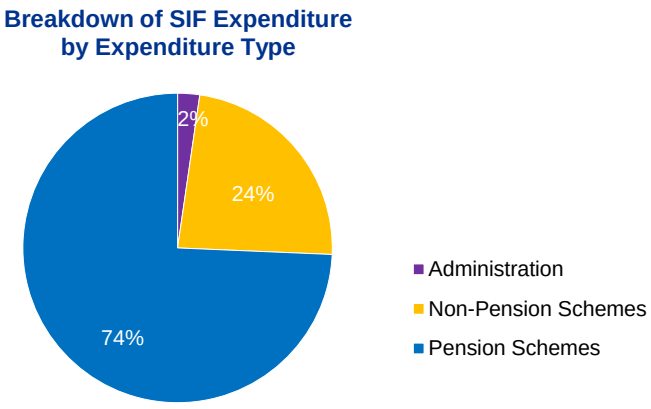

Figure 5.1: Expenditure by type; Source: Social Insurance Fund accounts 2021 and KPMG analysis

[18] "Pension expenditure" for this purpose includes SPC, WPC, Household Benefits Package

In order to contextualise the modelling and the level of detail reflected for some of the bigger expenditure types we have set out in the following table the expenditure items in 2019 in descending order of magnitude.

Largest Fund schemes by type 2019		
Scheme	**Expenditure (€Bns)**	**% of Total SIF Expenditure**
State Pension (Contributory)	5.603	56.0%
Widow(er)'s or Surviving Civil Partner's (Contributory) Pension	1.559	15.6%
Invalidity Pension	0.728	7.3%
Illness Benefit	0.606	6.1%
Jobseeker's Benefit	0.346	3.5%
Household Benefit Package	0.275	2.7%
Maternity Benefit	0.267	2.7%
Administration Expenses	0.230	2.3%
Treatment Benefit	0.101	1.0%
Disablement Benefit	0.073	0.7%
Deserted Wife's Benefit	0.072	0.7%
Carer's Benefit	0.043	0.4%
Other	0.112	1.0%
Total	**10.015**	**100%**

Table 5.2: Largest SIF schemes by type based on 2019 data included in the Fund accounts

5.4.2 Pension Benefits

State Pension (Contributory) (circa 56% of the 2019 Fund expenditure)

Existing 2020 pensioners and expected future new beneficiaries were modelled separately.

Existing Recipients

The Department provided us with the number of recipients of SPC payments during 2020 (across the entire SPC scheme and in respect of new entries). This was split by age and gender and rate band. We were also provided with the number of claimants and the associated total expenditure for each rate band at the end of 2020 which allowed us to calculate the overall weighted average annual pension payment for 2020.

The number of future claimants at each age for each year was projected based on the number of claimants at the end of the previous year and allowing for the probability of survival. Combining the number of claimants and the projected future average annual benefit amounts, allowed us to project the expenditure for existing pensioners for each future year.

New Pensioners

In order to project the cost of future new claimants, we estimated (i) the numbers qualifying for SPC in each future retiring year and (ii) the amount of SPC each new claimant would qualify

for based on PRSI record history. The amount of SPC each new claimant would qualify for was modelled reflecting the "better of" formula.

Numbers qualifying / claiming SPC

To estimate the numbers claiming SPC, we examined our retiring samples at each future year (e.g. for those reaching SPA in 2025 we examined all those with date of birth 1959 in the PRSI database who were due to reach SPA in 2025, aged 66). We then checked to ascertain how many individuals in this sample would have firstly qualified for SPC (at any level) – in the main this involved checking for the numbers with at least 520 "paid" contributions. An adjustment was also made for those who qualify but instead claim from schemes, such as Widow (er's) Contributory Pension, making them ineligible for SPC. Overall, we found that in 2020, 95.4% of males and 90.5% of females qualifying for SPC actually claimed the benefit. We retained the assumption of 95.4% and 90.5% of potential qualifiers actually claiming the benefit for future years.

Reaching SPA in each year	2020	2025	2030	2040[19]
Population male = SPA	23,772	26,418	28,917	34,989
Male Claimants	18,842	21,519	26,503	32,016
Claimants (as % of male population)	**79%**	**81%**	**92%**	**92%**
Population female = SPA	24,342	27,418	30,051	36,266
Female Claimants	14,939	17,979	21,845	26,474
Claimants (as % of female population)	**61%**	**66%**	**73%**	**73%**
Population total = SPA	48,114	53,836	58,968	71,255
Total Claimants (as a % of total population)	**70%**	**73%**	**82%**	**82%**

Table 5.3: Projected SPC claimants (as a % of population) at various spot years. Population of 66 year-olds in a given year is approximated by taking 65 year olds at 1 January of a given year.

Numbers qualifying at varying SPC rate levels

To estimate the numbers in receipt of SPC at varying levels we used the full contribution history provided by the Department for each cohort reaching SPA to estimate the projected total pension entitlements. An assumption was needed about contribution careers (the level of contributions and credits which individuals would likely make between the Review date and State Pension Age) and here we assumed that individuals would continue to contribute/receive credits in line with the average rate of contributions they had made over their career to date. This allowed the calculation of a projection of the total contributions and yearly average

19 In Table 5.3, the number of male claimants from 2040+ is assumed to remain constant at 92% of the 66 year old male population which reflects the number of *potential* qualifiers times the 95.4% rate of claim. Similarly for females, the number of female claimants from 2040+ is assumed to remain constant at 82% of the 66 year old female population which reflects the number of *potential* qualifiers times the 90.5% rate of claim.

contributions in respect of each member which then allowed us to calculate the corresponding rate of SPC entitlement.

The pension entitlement of each sample member for a given retiring year was then used to estimate the weighted average pension entitlement for the entire retiring sample for each (spot) year split by gender. We calculated rates of pension for each retiring individual for each of the first 10 years of the projection period (2021-2030) and thereafter at 10 year spot years interpolating between years.

For each future year, we looked at the new claimants reaching pensionable age in that year. In the first year of pension payment, the cost of benefits is the number of projected claimants at pensionable age in that year (see Table 5.3) multiplied by the weighted average pension payment. Allowance has been made for those on Invalidity Pension on the day before reaching SPA to transfer across to SPC at the 100% level.

The number of these claimants in receipt of this pension in each future year reflects the probability of survival from one year to the next. Average pension payments are increased in line with real earnings growth which when multiplied by the number of projected claimants gives the total expenditure for each future year.

Homemaking data and associated assumptions made

Given the introduction of the TCA formula for calculating SPC entitlements since the 2015 Review, Home Caring periods now form an important part of the entitlement for some. A full description of the approach to assumptions made for Home Caring periods is set out in Appendix 4.

Increase for qualified adult ("IQA")

We have maintained the same methodology as the 2015 Review for this increase and reflect declining proportions expected to qualify for IQA in the future. This reflects the expectation that as increasing numbers of individuals qualify for SPC in their own right given improving records fewer will have a need for the means tested IQA. The rate of assumed decline in the increase for a qualified adult is equal to the inverse of the improvement seen in the proportion of females qualifying for SPC. Updated data following a control survey by the Department was received for this variable which showed the IQA was lower than indicated at the 2015 Review.

Widow(er)'s and Surviving Civil Partner's (Contributory) Pension

We were provided with the number of recipients of this pension split by age and gender for 2020. This was used to calculate distribution rates of those in receipt of Widow(er)'s pension at each age, i.e. the number of people receiving the pension at each age and gender, divided by the total population level for that gender in 2020. These distribution rates were assumed to

be constant for each future year and were applied to projected population levels giving the number of claimants in each year by age and gender.

An estimate of the number of recipients at each rate group was also provided. This was given for personal rate claimants and qualified children. An estimate of the number of qualified children and the average rate for a qualified child was also provided. From this we derived the weighted average personal pension amount.

For each future year, we combined the future claimant numbers with the average personal rate for each age and gender to calculate the total projected expenditure.

5.4.3 Working Age - Employment Supports

Detailed analysis was performed given the number of changes in the working age income support expenditure of the Fund in recent years primarily driven by the reduced number of Jobseeker's as compared with the 2015 Review.

Jobseeker's Benefit (Circa 4% of the total expenditure of the Fund in 2019)

To calculate the expenditure for each year we modelled the number of claimants and the amount of this benefit over the projection period.

We were provided with the number of recipients of this benefit split by age and gender and also duration for 2021 and the preceding six years. This was used to calculate incidence rates of those in receipt of Jobseeker's Benefit at each age, i.e. the number of people receiving the benefit at each age and gender, divided by the total unemployment numbers for that age and gender.

For each future year, we combined the future claimant numbers with the average personal benefit for each age and gender to calculate the total projected expenditure.

Deserted Wife's Benefit (<1% of the total expenditure of the Fund in 2019)

This benefit is no longer available to new claimants, so it is expected that the total costs for this benefit will decline over time. The number of future claimants at each age for each year was projected based on the number of claimants at the end of the previous year and allowing for the probability of survival.

Maternity Benefit (Circa 3% of the total expenditure of the Fund in 2019)

Future recipients were projected by reference to the expected number of births to female labour force participants based on 2020 incidence rates. The average benefit payable was estimated from the 2020 data and projected through time in line with real earnings growth assumption.

Illness, Disability and Carers Benefits

Illness Benefit (Circa 6% of the total expenditure of the Fund in 2019)

We were provided with projected Illness Benefit amounts by the Department from 2016-2020 and were given statistics on the number of claimants who were in receipt of the benefit for more than 2 years. For those in receipt of Illness Benefit for longer than 2 years we assumed that this was a closed population, declining over time. We therefore projected the number of recipients allowing for the probability of survival of this group of claimants.

For the individuals with claims of less than 2 years duration we were provided with the number of recipients of this benefit split by age and gender for 2016-2020. The average number of claimants by year over the years 2017-2020 was used to calculate incidence rates (as a proportion of the labour force reflecting the qualification requirements) of those in receipt of Illness Benefit at each age, i.e. the number of people receiving the benefit at each age and gender, divided by the total labour force for that gender in 2020. The average incidence rate was used to offset any slight variations or distortions in a normalised rate of expenditure due to the Covid-19 pandemic. These incidence rates were assumed to be constant for each future year and were applied to projected labour force levels giving the number of claimants in each year by age and gender.

Invalidity Pension (Circa 7% of the total expenditure of the Fund in 2019)

The number of recipients of Invalidity Pension by age and gender was projected to increase each year in line with labour force population changes (given the qualification conditions) times real earnings growth rates.

We separately considered the remaining Illness Benefit beneficiaries with greater than 2-year duration i.e. those that had been on Illness Benefit pre 2014. On balance we decided not to include them as additional entries to Invalidity Pension in future years as we expect that most of them will transition into SPC and would have already transferred to Invalidity Pension where this was a viable alternative.

Other smaller benefits

Other smaller benefits were generally projected in line with labour force growth rates times real earnings growth.

5.5 Administration Costs

Administration Costs (2% of the total expenditure of the Fund in 2019)

As administration costs are a relatively small proportion of the total expenditure we have assumed as a practical expedient that they will increase in line with real earnings growth.

6 Population and Labour Force Projections

This chapter:

- describes population projections - information received and analysis
- outlines the assumptions underlying the population projections
- describes the labour force information received and analysis
- provides commentary on a range of matters associated with the ageing of the population

6.1 Population Projections

6.1.1 Assumptions

The principal assumptions we used for the base case and for developing population projections are those adopted in in the 2021 Ageing Report prepared by the Ageing Working Group ("AWG"), a Report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (EPC). The AWG report reflects economic and budgetary projections for the EU Member states (2019-2070). The latest Eurostat population projections (EUROPOP 2019) underpin the assumptions feeding into the AWG. Key inputs into the population projections are fertility rates, mortality assumptions, migration assumptions and we comment on each in turn.

In the 2015 Review the population projections were overlaid with the results of the Census 2016. However, the 2021 census was deferred to 2022 due to the COVID-19 pandemic and therefore no such population overlay will be employed at this Review due to lack of availability of updated data. In some of the tables that follow figures are provided to 2070 rather than 2076 being the end of the projection period reflecting the source data in the 2021 Ageing Report.

6.1.2 Analysis of the Population Projections

Based on these assumptions, we present in Table 6.1 some summary details of the projected population and its structure out to 2076. Note that the projection from 2020 to 2070 is based on the 2021 Ageing Report ("AWG") projections and the projection from 2070 to 2076 is taken from the base case projections. The overall population is forecast to rise from 5 million in 2020 to 6.57 million in 2076, an increase of 31% over 2020 levels.

Age Group	2020	2030	2040	2050	2060	2070	2076
0 - 19	1,331	1,305	1,316	1,367	1,356	1,339	1,348
20 - 65	2,990	3,300	3,424	3,389	3,437	3,449	3,433
66 +	680	922	1,183	1,469	1,613	1,712	1,793
Total	5,001	5,527	5,923	6,225	6,406	6,500	6,574
0 - 19	27%	24%	22%	22%	21%	21%	21%
20 - 65	60%	60%	58%	54%	54%	53%	52%
66 +	14%	17%	20%	24%	25%	26%	27%
Pensioner Support Ratio	**4.4**	**3.6**	**2.9**	**2.3**	**2.1**	**2.0**	**1.9**
Total Support Ratio	1.5	1.5	1.4	1.2	1.2	1.1	1.1

Table 6.1: Population Structure 2020 to 2076 (000s); base case assumptions. Note the population projection for 2020-2070 are taken from 2021 AWG projections and the projection from 2070 to 2076 are taken from base case projections

6.1.3 Changing population structure

The age-structure of the population is projected to dramatically change in the coming decades. The population is projected to be much larger than it is now, it is also expected to be much older.

The proportion of the population aged 66 and over is projected to rise from 14% in 2020 to 24% in 2050. In 2020 there were circa 4.4 workers for every individual over age 66 and this reduces to circa 2.3 workers for every individual over age 66 by 2050, further declining to 1.9 workers by 2076.

The pensioner support ratio is a key measure of the ability of the Fund to meet its obligations in the future as contributions by and on behalf of the working population plus general taxation are necessary to finance the benefits paid to those over SPA in the absence of any material level of prior funding.

$$Pensioner\ Support\ ratio = \frac{Number\ of\ people\ of\ working\ age}{Number\ of\ people\ over\ pension\ age}$$

Figure 6.1 gives a more detailed breakdown of the actual 2020 and 2050 projected populations by gender and age category. A population “bulge” at the age groups 35-50 can be clearly seen in the 2020 chart and explains the dramatic reduction in the projected pensioner support ratio between now and 2050, thereafter expected to decline more gradually.

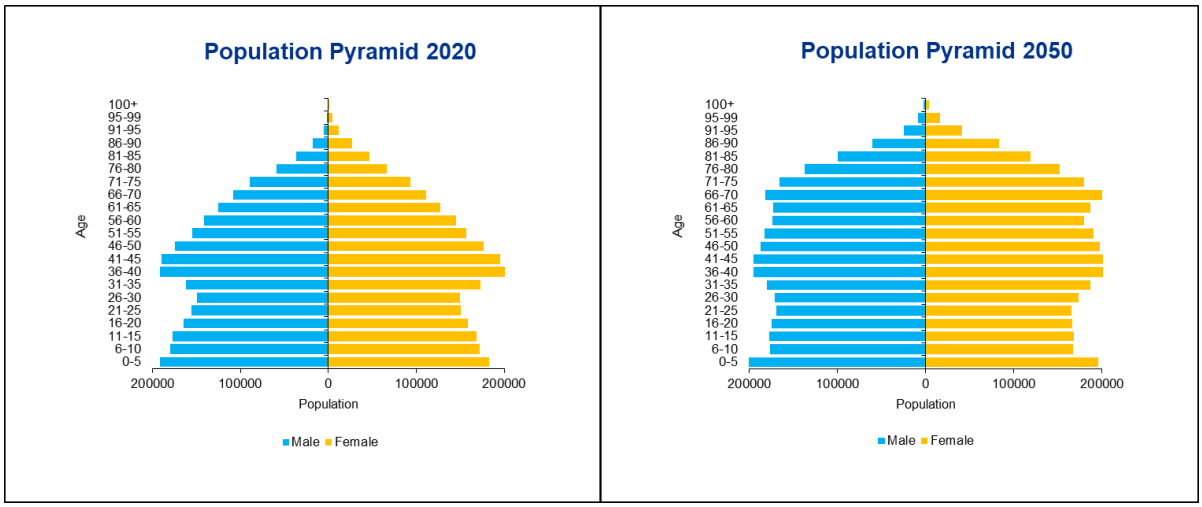

Figure 6.1: Comparison of the 2020 and 2050 population by gender and age category

6.1.4 Support ratios and dependency ratios

A chart of the progression of the pensioner support ratio can be seen in Figure 6.2. A steep decline is observed between 2020 and 2050 thereafter reducing more gradually.

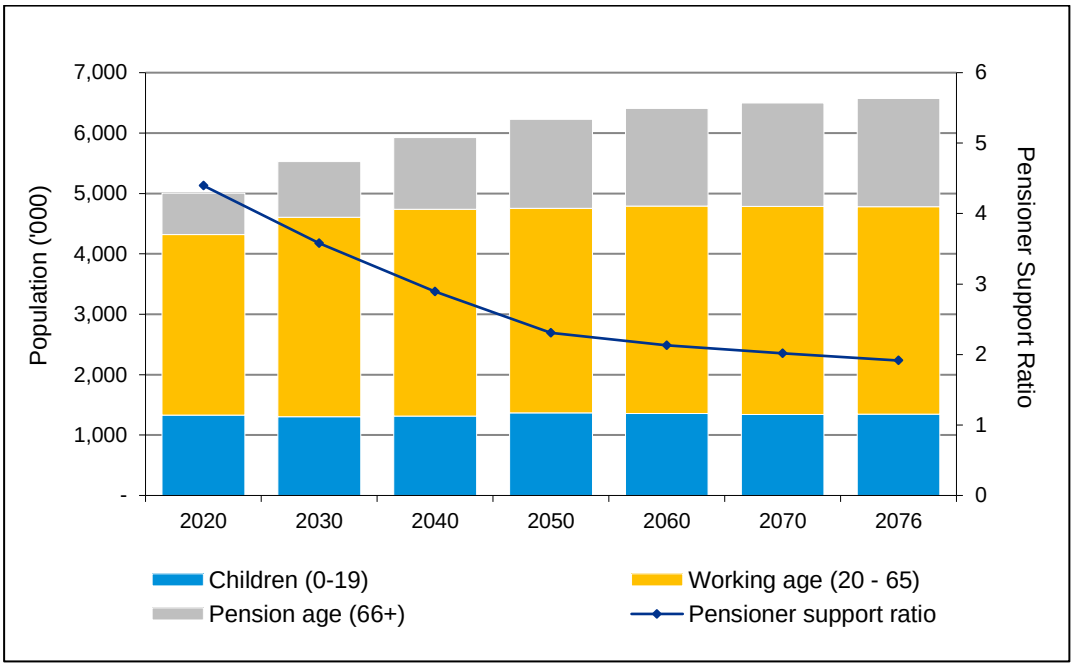

Figure 6.2: Projected age structure of the population and pensioner support ratio (2020-2076)

6.2 Mortality Rates and associated Life Expectancy Assumptions

The projected changes in life expectancy at birth and at the age of 65 for males and females underlying the 2019-based population projections used by AWG and quoted in the 2021 Ageing Report are shown in the tables that follow. The projections assume that increases in life expectancy at birth are sustained during the projection period.

Life expectancy rates implied by the mortality rates used in the 2020 Review

Irish life expectancy rates at birth in the projection:

Projection of life expectancy at birth (2019-2070)[20]								
AWG 2021	Males				Females			
	2019	2050	2070	change 2019-70	2019	2050	2070	change 2019-70
	81.1	84.6	86.8	5.7	84.8	88.3	90.4	5.6

Table 6.2: Life expectancy 2019 to 2070; Source: 2021 Ageing Report

Irish life expectancy rates at 65 in the projection:

Projection of life expectancy at 65 (2019-2070)								
AWG 2021	Males				Females			
	2019	2050	2070	change 2019-70	2019	2050	2070	change 2019-70
	19.6	22.1	23.8	4.2	22.1	24.9	26.7	4.6

Table 6.3: Life expectancy at age 65 - 2019 to 2070; Source: 2021 Ageing Report

In Ireland, life expectancy at birth for males is expected to increase by 5.7 years over the projection period, from 81.1 in 2019 to 86.8 in 2070. Female life expectancy at birth would rise by 5.6 years, from 84.8 in 2019 to 90.4 in 2070, leading to a further convergence between genders.

When looking at the remaining life expectancy at the age of 65, average increases of 4.2 and 4.6 years are expected respectively for males and females in Ireland over the projection period, implying a more modest narrowing of the gender gap than for the life expectancy at birth.

There is no consensus among demographers on very long-term trends, e.g., whether there is a natural biological limit to longevity, the impact of future medical breakthroughs, and the long-term effect of public health programmes and societal behaviour such as the reduction of smoking rates or a higher prevalence of obesity. Past population projections have, however, generally underestimated the gains in life expectancy at birth as the reduction of mortality was not assumed to continue at the same pace in the long run.

Most official demographic projections by international and national statistical institutes nevertheless still assume that gains in life expectancy at birth will slow down compared with

20 Analysis in these tables is to the year 2070 rather than 2076 reflecting analysis performed for the 2021 Ageing Report

historical trends. This is because mortality rates at younger ages are already very low and future gains in life expectancy would require improvements in mortality rates at older ages, which statistically have a smaller impact on life expectancy at birth.

6.3 Fertility Rate Assumptions

Eurostat in their 2019 based population projection also produce assumptions of the future fertility rates of the population.

Irish fertility rates in the projection:

Projection of total Irish fertility rates (2019-2076)						
AWG 2021	**2019**	**2030**	**2050**	**2076**	**change 2019-2076**	**average 2019-2076**
	1.78	1.80	1.80	1.81	0.03	1.8

Table 6.4: Fertility rates 2019 to 2076

As can be seen from Table 6.4, the total fertility rate in Ireland is projected to be broadly unchanged throughout the period, gradually rising from 1.78 in 2019 to 1.81 by 2076.

Fertility rates in Ireland are projected to remain below the natural replacement rate (2.1 births) over the period to 2076.

Past Trends

Irish fertility rates in the past are in Table 6.5 below. From a rate of 3.78 in 1960, the number of births per woman declined steadily in Ireland to 3.21 children on average in 1980. In 2000, fertility rates were 1.89, further decreasing to 1.75 by 2018.

Irish fertility rates past trends:

Past trends in total Irish fertility rates (1960-2018)						
	1960	**1980**	**2000**	**2018**	**1960-2018**	**2000-2018**
AWG 2021	3.78	3.21	1.89	1.75	-2.0	-0.1

Table 6.5: Historic fertility rates 1960 to 2018; Source: 2021 Ageing Report

6.4 Migration

Because of high historical volatility over time and between countries, assumptions on migration are methodologically the most difficult when preparing demographic projections.

Irish net migration assumed in the projection is as follows:

Projection of net migration flows (2019-2070)									
	Net migration ('000)				Net migration (% of population)				
	2019	2030	2050	2070	2019	2030	2050	2070	cum. change 2019-76 (%2019)
AWG 2021	33	19	14	10	0.7	0.3	0.2	0.2	18

Table 6.6: Migration numbers (000s) 2019 to 2070; 2021 Ageing Report

The table above presents the net migration flows for Ireland in the EUROPOP2019 projections. The methodology underlying the net migration projections is summarised below.

For Ireland, annual net flows are expected to decrease from 33,000 people in 2019 to around 19,000 in 2030. By 2070 the net migration is expected to be 10,000 people or 0.2% of the population.

Methodology for the migration assumptions in the EUROPOP 2019 projections

The models used by Eurostat to produce immigration and emigration projections, which combine into net migration, take account of past migration trends, the most recent data, underlying demographic factors as well as assumptions about future developments in migration flows. The models reflect a long-term convergence module.

6.5 Labour Force

6.5.1 Information received and extrapolated

Assumptions on labour force participation rates and employed, unemployed numbers for the purposes of this Review are as per those used in the 2021 Ageing Report with an overlay of short-term employment growth rates and unemployment rates as set out in the SPU.

The base position reflects the current fundamentals as summarised in the CSO's Labour Force Survey Quarter 2 2022 and the sharp improvement in the labour market post the pandemic:

- 2.674 million in the Labour Force of which 2.55 million (aged 15-89) are employed
- The labour market participation of people of working age (20-64) was 81.8% as of Q2 2022, an increase from the pre-pandemic rate of 79% in Q4 2019.
- An unemployment rate of 4.5% (amongst those aged 15-74).

For the early years of the projection, we allow for growth in employed numbers as set out in the SPU (i.e. 2.1% in 2023, 1.7% in 2024, 1.7% in 2025), thereafter allowing for growth rates in line with the 2021 Ageing Report.

6.5.2 Projection of labour force

The projection of the labour force involves multiplying labour force participation rates (by age and gender) at each future year by the projected population. Similar to the population projections, age and gender-specific labour force participation rates for each year to 2076 were adopted.

The projections reveal an upward shift in the age profile of both male and female participation rates. For female participation, there is a general upward shift. These broad trends reflect the combined effect of pension reforms and the rising attachment of younger generations of women to the labour market.

Total labour supply in Ireland is expected to increase substantially over the projection horizon The average annual increase in the labour force over the projection period is an average annual increase of 0.4%.

6.5.3 Employment Projections

The 2021 Ageing Report methodology calculates employment as a residual variable. It is determined on the basis of the population projections from Eurostat, future participation rates and the unemployment rate assumptions.

Mainly as a result of the ageing process, the age structure of the working population will undergo a number of significant changes. The share of older workers (aged 55 to 64) in employment in Ireland is projected to rise. The share of the older workers rises generally more for women than men.

6.5.4 Assumptions on Unemployment

The unemployment rate assumptions used in the projection are summarised in Table 6.4 and reflect the unemployment rate per the SPU in the short term, reverting to a longer term average set out in the 2021 Ageing Report thereafter.

Unemployment rate assumptions (20-64 year olds)					
	2022 (Q1)	**2030**	**2040**	**2050**	**2076**
SPU in early years, thereafter AWG 2021	4.7	6.8	6.7	6.4	6.4

Table 6.8: Unemployment numbers used in the projection

6.6 Mortality – consideration of CSO's most recent study

We have updated the assumptions used for the 2015 Review to reflect revised mortality base tables and mortality improvement rates as per the latest Eurostat population projections (EUROPOP 2019) underpinning the assumptions feeding into the 2021 Ageing report.

In forming a judgement on which assumptions to use at the outset, we considered whether to apply further updates for projected improvements in life expectancy in line with Irish specific mortality rates as set out in the CSOs' most recent study, "CSO Population and Labour Force Projections 2017 – 2051", published June 2018.

Having compared the resulting life expectancies from the CSO with those resulting from the EUROPOP 2019 study we decided to allow for the EUROPOP study only (which forms the basis for the demographic assumptions of the Ageing Report 2021), given the similarity between the two resulting life expectancies. For example in 2051 the difference between the CSO and the AWG male life exectapncies is 0.9 years and for females it is (0.1 years).

Life Expectancies from birth at spot years – Males (CSO, 2021 Ageing Report comparison)							
	2021	**2026**	**2031**	**2036**	**2041**	**2046**	**2051**[21]
CSO study	80.8	81.8	82.7	83.6	84.3	84.9	85.6
AWG 2021	80.9	81.6	82.2	82.9	83.5	84.1	84.7
Difference	0.1	-0.2	-0.5	-0.7	-0.8	-0.8	-0.9

Table 6.15: Male life expectancies CSO study compared with those used in base case of the 2020 Review

Life Expectancies from birth at spot years - Females (CSO, 2021 Ageing Report comparison)							
	2021	**2026**	**2031**	**2036**	**2041**	**2046**	**2051**
CSO study	84.3	85.1	85.9	86.5	87.1	87.7	88.3
AWG 2021	84.6	85.3	85.9	86.6	87.2	87.8	88.4
Difference	0.3	0.2	0	0.1	0.1	0.1	0.1

Table 6.16: Female life expectancies CSO study compared with those used in base case of the 2020 Rev

[21] 2051 is the final year used in the comparison at tables 6.15 and 6.16 given that this is the end point of the CSO projections in their publication "Population and Labour Force Projections 2017 – 2051".

7 Base Case Results

This chapter provides an overview of the core results from the Review as follows:

- Projections of the level of income and expenditure up to 2076. We highlight the annual surplus / shortfall arising in real (2022 price) terms and as a percentage of GNI*[22]
- The break-even contribution rates needed to meet the total expenditure
- Comparison of pension and non-pension related expenditure over the projection period
- The discounted present value of future expected shortfalls

7.1 Income and Expenditure Projections – base case

Reflecting the methodology described in Chapters 5 and 6, we have projected the future income and expenditure of the Fund for the projection term to 2076. Each of the tables in this chapter show results under the base case scenario.

Table 7.1 shows the projected income and expenditure for each year up to 2035 and for spot years thereafter, up to 2076. All figures shown are in 2022 real price terms. The receipts and expenditure are both exclusive of the National Training Fund Levy[23].

Base Case						
Year end	**Receipts**	**Expenditure**	**Surplus / (Shortfall)[24]**	**Net as a % of GDP**	**Net as a % of GNI***	**Projected Balance of Fund^^^**
2020	10.6	14.1	(3.5)	(0.9)%	(1.7)%	0.5
2021^	11.8	14.9	(3.1)	(0.7)%	(1.3)%	0.0
2022^^	14.2	11.5	2.7	0.6%	1.1%	2.7
2023	14.8	12.0	2.8	0.6%	1.1%	5.4
2024	15.4	12.7	2.7	0.5%	1.1%	8.1
2025	16.0	13.3	2.6	0.5%	1.0%	10.8
2026	16.4	13.9	2.4	0.5%	0.9%	13.2
2027	16.8	14.8	2.0	0.4%	0.7%	15.2
2028	17.1	15.2	1.9	0.4%	0.7%	17.1
2029	17.5	15.8	1.6	0.3%	0.6%	18.8
2030	17.8	16.5	1.3	0.2%	0.5%	20.1
2031	18.2	17.2	1.0	0.2%	0.3%	21.1

22 New Irish-specific measures of activity – most notably 'modified Gross National Income' otherwise known as GNI*– attempt to control for (part of) the impact of globalisation on Irish macro-economic statistics. We have used this metric as it is commonly used for official estimates by the Department of Finance.

23 The National training fund levy currently comprises 1% of employer's contribution for Classes A and H. This levy on employers is used to fund the development and raising of skills amongst those in or seeking employment. The figure for the national training fund levy is estimated at c. €850m in 2022.

24 The surplus / shortfall amounts may differ slightly to the differences in receipts and expenditure due to rounding. For example, in 2025 receipts are projected at €15.97bn, expenditure at €13.32bn giving a shortfall of €2.65bn where €2.6bn is shown (being €15.9bn less €13.3bn).

Base Case						
2032	18.5	18.1	0.4	0.1%	0.1%	21.5
2033	18.9	18.6	0.3	0.1%	0.1%	21.9
2034	19.3	19.3	(0.0)	(0.0)%	(0.0)%	21.8
2035	19.6	20.1	(0.5)	(0.1)%	(0.1)%	21.4
2040	21.5	24.5	(3.0)	(0.4)%	(0.9)%	11.4
2045	23.3	29.5	(6.1)	(0.8)%	(1.6)%	(13.2)
2050	25.3	34.9	(9.6)	(1.2)%	(2.4)%	(55.1)
2055	27.4	40.4	(13.0)	(1.5)%	(3.0)%	(112.4)
2060	29.8	45.3	(15.6)	(1.7)%	(3.3)%	(182.5)
2065	32.3	49.8	(17.5)	(1.7)%	(3.4)%	(264.6)
2070	34.8	55.0	(20.2)	(1.9)%	(3.6)%	(361.1)
2076	38.1	63.0	(24.9)	(2.1)%	(4.1)%	(498.5)

Table 7.1: Progression of total income and expenditure (€ billions) and deficit as percentage of GDP and GNI*
^2021 figures are provisional outturn from the Department of Social Protection
^^2022 figures reflect official provisional estimates for expenditure and estimates for PRSI contributions based on Department of Finance fiscal data to end July 2022.
^^^The Projected Balance of Fund figures are in 2022 real price terms. In performing the projection we have implicitly assumed that any returns earned will be broadly in line with the assumed inflation rate in the base case.

A number of observations in relation to the projections:

- There is an opening deficit effective 31 December 2020, which is largely due to Covid-related payments, with a projected surplus in 2022, the start of the projection period.
- Small annual surpluses are projected to continue to materialise up to 2033, after which the Fund is projected to experience a small annual shortfall, increasing thereafter.
- In the absence of any changes to PRSI rates or subventions from the State, annual projected expenditure in excess of income is anticipated to reach €0.5 billion by 2035 and €3.0 billion by 2040 in real 2022 price terms, increasing markedly thereafter.
- We anticipate that the annual shortfall will continue to grow to 2.4% of GNI* by 2050 and to 3.3% of GNI* in 2060 thereafter increasing to 4.1% by 2076.
- Note that despite annual shortfalls materialising from 2034 / 2035 onward the accumulated Fund at year end 2035 is projected to be of the order of €21.4 billion.[25] The first year the Fund is projected to enter into deficit is 2034 at which point State subventions would be anticipated to materialise such that the projected balance in the Fund would be broadly nil in practice (save for any small surplus needed for cashflow purposes).

We would point out that the base case differs as follows, compared with the 2015 Review:

- The assumptions adopted have been updated to reflect the current economic outlook.

25 In projecting the Fund we have implicitly assumed that any returns earned will be broadly in line with the assumed inflation rate in the base case.

— Anticipated expenditure includes a projected/ assumed continuation of the Christmas bonus at 100% of one week's payment on the long-term schemes for each year into the future.
— The short-term projections and the anticipated surpluses arising reflect the markedly higher 2022 PRSI base as compared with the previous Review.
— The State Pension Age is assumed to remain at 66 as compared with an assumption of an increase to age 67 in 2021 and to age 68 in 2028 in the 2015 Review.
— Over the long term the overall expenditure projections continue to be driven by the ageing of the population and the steep progression in expected pensioner numbers.

A range of expenditure projections reflecting a variety of different policy scenarios is included in Chapter 10. An analysis of the reasons for the differences in income and expenditure between this Review and the 2015 Review is described in Chapter 8. Detailed projections of income and expenditure by line item are included in Appendix 5.

7.2 Break-Even Contribution Rates

We have calculated the break-even rates needed to meet the expenditure levels over a range of future time periods. These rates are expressed as a multiple of the projected contribution income in each future time period i.e. the increase of revenue in that period needed to meet the shortfall. We calculate these rates over a range of time periods.

Table 7.2 shows the calculated break-even rates for the base case on the basis of no Exchequer subventions. Table 7.3 shows the calculated break-even rate on the basis of:

— No Exchequer subvention;
— With an annual Exchequer subvention of 10%, 25% or 33% of the expenditure.

Equalised contribution rates (base case)		
Year	**SPC Expenditure only**	**All Expenditure**
2020	55%	133%
2021	52%	126%
2022	45%	81%
2023	46%	81%
2024	47%	82%
2025	48%	83%
2026	50%	85%
2027	53%	88%
2028	53%	89%
2029	55%	91%
2030	57%	92%
2035	66%	102%
2040	76%	114%
2045	87%	126%
2050	98%	138%

Equalised contribution rates (base case)		
2055	106%	148%
2060	110%	152%
2065	112%	154%
2070	115%	158%
2076	122%	165%

Table 7.2: Contribution rate required to equalise the deficit, as a % of base.

The individual years equalised contribution rates commence at 81% in 2022 (reflecting the surplus) and increase to circa 165% in 2076. More immediately, the above figures show that by 2040 the PRSI yield would need to be 14% higher, and if this was carried through to PRSI rates as currently structured then rates would need to increase by 14% also (for example Class A employee rate would need to increase from 4% to 4% x 1.14 = 4.56%) in order to balance income and expenditure (where no Exchequer subventions are made).

Equalised Contribution Rates over 5, 10, 20 years and whole projection period

Equalised contribution rates to fund SIF expenditure – base case				
	No Subvention	**10% Subvention**	**25% Subvention**	**33% Subvention**
Equalised Contributions for 5-year period				
2023	83%	74%	62%	55%
Equalised Contributions for 10-year period				
2023	87%	78%	65%	58%
2033	107%	96%	80%	71%
2043	131%	118%	98%	87%
2053	147%	132%	110%	99%
2063	156%	140%	117%	104%
Equalised Contributions for 20-year period				
2023	98%	88%	73%	66%
2043	140%	126%	105%	93%
2063	158%	143%	119%	106%
Equalised Contributions for period to 2076				
2023	136%	122%	102%	91%

Table 7.3: Equalised Contribution Rates required to fund all Fund related expenditure

Referring to Table 7.3, where only five or indeed ten years' worth of Fund-related expenditure is considered, there is a surplus in income over the period.

However, in the longer term, more significant step changes in income would be required – the corresponding increase for the ten-year period 2033 - 2043 is 7% as highlighted.

By way of explanation, the 126% highlighted for the 20-year period in Table 7.3 indicates that PRSI receipts of 26% higher than is currently projected based on current rates in force, coupled with state subventions of 10% of expenditure each year would be necessary to keep the Fund in balance for the 20-year period commencing in 2043.

Over the entire projection period, an increase of 36% of PRSI rates or significant reductions in expenditure or substantial Exchequer subventions (or a combination of approaches) will be required to balance income and expenditure.

In summary the table demonstrates that either substantial state subventions, increased PRSI receipts, reduced expenditure or a combination will be needed to keep the Fund in balance in the long term.

Equalised contribution rates to fund SPC expenditure – base case				
Year	**No Subvention**	**10% Subvention**	**25% Subvention**	**33% Subvention**
Equalised Contributions for 5-year period				
2023	47%	43%	36%	32%
Equalised Contributions for 10-year period				
2023	52%	46%	39%	35%
2033	69%	62%	52%	46%
2043	91%	82%	68%	61%
2053	106%	95%	79%	71%
2063	113%	102%	85%	76%
Equalised Contributions for 20-year period				
2023	61%	55%	46%	41%
2043	99%	89%	74%	66%
2063	115%	104%	87%	77%
Equalised Contributions for period to 2076				
2023	95%	86%	71%	64%

Table 7.4: Equalised Contribution Rates for SPC expenditure only

Table 7.4 above shows the contribution rates to hypothetically be assigned to SPC expenditure in order to balance the income and expenditure for SPC expenditure ***only***. Early on in the projection period the required PRSI rate is a multiple less than 100% reflecting the fact that the Fund is in surplus and the SPC expenditure is materially less than overall PRSI receipts. However later on in the projection period the higher SPC expenditure than total projected PRSI income results in a requirement for PRSI increases to fund the SPC on its own e.g. in 2053 the equalised rates to cover the 10 year period 2053 would be 6% higher than currently resulting in a class A rate of 4% x 1.06% or 4.2%.

7.3 Comparison of Pension and Non-Pension Benefits

Table 7.5 shows the projected expenditure of the Fund split by pension and non-pension benefits for each year to 2030 and at spot years thereafter.

Projections of pension and non-pension related expenditure (base case)						
					Pension expenditure as a % of	
Year end	Receipts	Pension Expenditure[26]	Other expenditure	Total Expenditure	Total expenditure	Receipts
2020	10.6	7.7	6.4	14.1	55%	73%
2021	11.8	8.1	6.8	14.9	54%	68%
2022	14.2	8.4	3.1	11.5	73%	59%
2023	14.8	8.9	3.1	12.0	74%	60%
2024	15.4	9.5	3.2	12.7	75%	62%
2025	16.0	10.0	3.3	13.3	75%	63%
2026	16.4	10.6	3.4	13.9	76%	64%
2027	16.8	11.3	3.5	14.8	76%	67%
2028	17.1	11.6	3.5	15.2	77%	68%
2029	17.5	12.2	3.6	15.8	77%	70%
2030	17.8	12.8	3.7	16.5	78%	72%
2031	18.2	13.4	3.8	17.2	78%	74%
2032	18.5	14.3	3.8	18.1	79%	77%
2033	18.9	14.7	3.9	18.6	79%	78%
2034	19.3	15.3	4.0	19.3	79%	79%
2035	19.6	16.0	4.1	20.1	80%	81%
2040	21.5	19.9	4.6	24.5	81%	93%
2045	23.3	24.5	5.0	29.5	83%	105%
2050	25.3	29.6	5.3	34.9	85%	117%
2055	27.4	34.6	5.8	40.4	86%	127%
2060	29.8	39.0	6.3	45.3	86%	131%
2065	32.3	42.9	6.9	49.8	86%	133%
2070	34.8	47.7	7.3	55.0	87%	137%
2076	38.1	55.1	7.9	63.0	87%	145%

Table 7.5: Pension and non-pension related expenditure (€ billions) under base case assumptions

We have compared the SPC and other benefits as a percentage of both contribution income and benefit outgo.

The results indicate that pension expenditure as a proportion of total social insurance expenditure would rise from roughly 73% in 2022 to 80% by 2035 and 85% by 2050.

26 'Pension expenditure' for this purpose includes SPC, WPC, Household Benefit Package / Fuel Allowance.

Similarly, although contributions have not been explicitly hypothecated to different benefits, pension related expenditure as a proportion of total PRSI receipts is projected to rise from 59% in 2022 to 81% by 2035 and 117% by 2050.

7.4 Discounted value of future shortfalls in the Fund

Table 7.6 shows the discounted value at the date of this Review of the accumulated Fund shortfalls. It is €271 billion using a real discount rate of 1.5% p.a. €335 billion was the assessed value (also reflecting a real discount rate of 1.5% p.a.) at the 2015 Review based on 2015 data and the macro-economic and demographic outlook at that point.

This is defined as the present value of the Fund shortfalls (i.e. the difference between projected contribution income and expenditure) over the 55 year period in question. It reflects the current legislative basis for calculating benefits and PRSI rates in force.

It is important to realise that the discounted value of the future shortfalls is a hypothetical figure reflecting the "pay as you go" nature of the system. It is however a useful measure (expressed in 2022 real price terms) of the shortfalls expected to build up in the Fund, all else being equal.

Discount rate used in the calculation of the present value of future shortfalls

A "real" discount rate is required for the calculation of the present value of future shortfalls.

There are a number of approaches which could be used in setting the discount rate to value the shortfalls. These are described further in Appendix 6.

Ultimately, we have chosen a 1.5% p.a. "real" discount rate in the long term for the calculation of the shortfalls at the effective date of the Review. Based on analysis a real discount rate of between 1.5% p.a. and 2.5% p.a. would represent a best estimate at date of signing. While a number of approaches are valid we have chosen a "smoothed" discount rate which could otherwise be plausibly used for funding purposes of a typical pension scheme at the effective date of the Review, reflecting market-implied measures of inflation and long term government bond yields.

The results are very sensitive to the real discount rate chosen as can be seen from Table 7.6.

If, for example, a real discount rate of 2% p.a. was chosen, the €271 billion would reduce to €221 billion. If a real discount rate of 3% p.a. was used the figure would reduce further to €148 billion. The (€501.1 billion) number at a real discount rate of 0% less the opening (estimated) surplus of €2.7 billion at year end 2022 equates to the accumulated Fund balance in 2076 of (€498.5 billon) as per Table 7.1.[27]

27 Differences relate to rounding.

Discounted value of future surplus / (shortfalls) - Base Case					
Period	**"Real" discount rate assumptions (p.a.)**				
	0%	**1.2%**	**1.5%**	**2%**	**3%**
5 years to 2028	12.5	12.1	12.0	11.9	11.5
10 years to 2033	18.9	17.9	17.7	17.3	16.6
20 years to 2043	1.0	3.5	4.0	4.8	6.1
30 years to 2053	(78.8)	(54.9)	(50.1)	(42.8)	(30.8)
Full period to 2076	**(501.1)**	**(305.6)**	**(270.5)**	**(221.0)**	**(148.2)**

Table 7.6: Discounted value of future surplus / (shortfalls) (€ billions)

7.5 Balance sheet (high level)

The split out of the above-mentioned shortfalls across present value of future income and present value of future expenditure is shown at Table 7.7. This represents a high level "balance sheet" of the Fund.

Balance sheet (discounted income and expenditure) – Base Case					
Period	**"Real" discount rate assumptions (p.a.)**				
	0%	**1.2%**	**1.5%**	**2%**	**3%**
Full period to 2076					
Income	1,387.5	968.8	890.8	778.6	606.2
Expenditure	1,888.6	1,274.3	1,161.3	999.6	754.4
Surplus / (Shortfall)	**(501.1)**	**(305.6)**	**(270.5)**	**(221.0)**	**(148.2)**

Table 7.7: Distribution of Income and Expenditure over the entire projection period (€ billions) from 2023 to 2076

Sustainability or fiscal gap

The present value of future shortfalls is an important and relevant figure arising from the 2020 Review in terms of any attempt to ascertain the sustainability of the Fund.

It is only possible to draw conclusions about the sustainability of a social insurance scheme by comparing pension and indeed other social insurance obligations with the respective assets (in the case of the Irish system the present value of future PRSI receipts). The resulting residual amount of obligations and assets represents the sustainability or fiscal gap. It represents the stock which has to be set aside today to sustain the present social insurance expenditure system (in its legal status quo) into the long term.

The present value of the shortfalls represents the present value of the amounts which will need to be paid by way of Exchequer subvention to sustain the social insurance expenditure system over the 55-year projection period. The €271 billion is the present value of the balances projected to be required from future Exchequer subventions and is circa 1.1 times estimated GNI* for 2022.

8 Comparison with 2015 Review

This chapter sets out the principal differences between this Review and the 2015 Review. These differences include:

- Comparison of Results between Reviews - Overview
- Actual versus Expected experience between Reviews
- Revised outlook for projections
- The effect of assumptions changes (macro-economic)
- Walk of shortfalls between 2015 Review and 2020 Review

8.1 Comparison of results between Reviews - Overview

We have compared the results of the 2015 and 2020 Reviews in this chapter.

We start with a comparison of actual to expected, in terms of overall income, expenditure, and shortfall, followed by a review of actual versus expected expenditure split into pension and non-pension components. In comparing actuals to expected we allowed for the impact of CPI between 2017 and the relevant reporting year on expected numbers in order to give a like for like comparison.

To convert projected numbers at the 2015 Review to 2022 real price terms we allowed for the impact of CPI over the five year period June 2017 to June 2022 i.e. 11.98%. The 11.98% is similar to the CPI emerging if we took annual CPI reported for each year 2018 – 2021 and made an assumption about average CPI for 2022 reflecting CPI data reported to July 2022.

We then analysed the change in the projections of income, expenditure, and shortfall and the main components feeding into these elements.

At a high level the main changes between Reviews were as follows with a further attribution included in the walk illustrated at Figure 8.3:

- The repeal of the planned SPA change from 66 to 67 and 68
- Impact of CPI over the preceding 5 years and therefore all cashflows re-expressed in 2022 real price terms
- Notwithstanding the Covid-19 pandemic, materially higher PRSI receipts than expected at the 2015 Review.

	Actual[28]			Expected at 2015 Review (unadjusted for CPI)			Expected at 2015 Review (adjusted for CPI[29])		
Year	**Income**	**Expenditure**	**Excess / (Shortfall)**	**Income**	**Expenditure**	**Net**	**Income**	**Expenditure**	**Net**
2016	9.22	8.76	0.45	9.22	8.76	0.45	9.22	8.76	0.45
2017	9.82	9.09	0.73	9.60	9.13	0.47	9.60	9.13	0.47
2018	10.63	9.49	1.14	9.75	9.51	0.24	9.80	9.56	0.24
2019	11.58	10.02	1.57	9.93	9.89	0.05	10.07	10.02	0.05
2020	10.64	14.11	-3.46	10.05	10.29	-0.24	10.16	10.40	-0.24

Table 8.1: Actual cash-flows (€ billions) during inter-review period versus expected at 2015 Review (adjusted for CPI)

The 2015 Review was carried out in 2017. Since then, there has been a significant variance in what was expected at the time of the Review versus the actual outcomes reflecting the onset of the coronavirus pandemic and the subsequent strong and unanticipated labour market recovery.

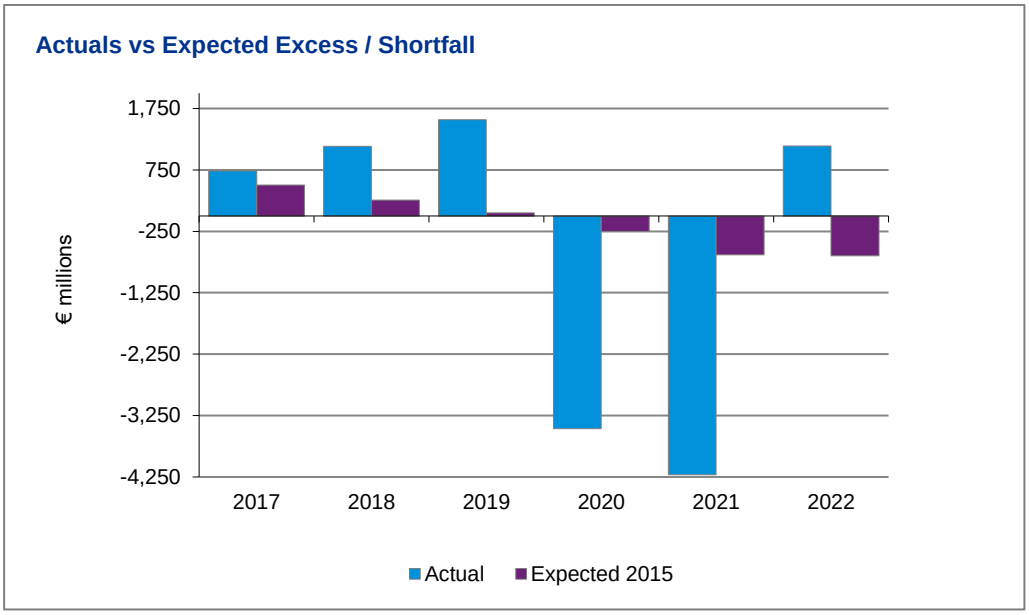

Figure 8.1: Chart of actual excess / shortfall (€ millions) of income over expenditure versus expected (after allowance for CPI)

As can be seen in Figure 8.1, the shortfall in 2020 and 2021 was significantly above what had been expected in the 2015 Review. This was mainly due to higher expenditure as a result of Covid-19 and in particular due to the Pandemic Unemployment Payment which amounted to €3.7bn in 2020 and €3.3bn in 2021.

28 Actuals reflect figures appearing in the Fund accounts for the years 2016 - 2020 inclusive.

29 To adjust expected cashflows from 2017 real price terms to 2022 real price terms we used annual average CPI from 2018+. For example, 2019 expected cashflows adjusted for CPI reflect the cumulative impact of annual average CPI in 2018 (0.5%) and annul average CPI in 2019 (0.9%) or 1.4%.

8.2 Actual versus Expected expenditure (2016 to 2020)

Table 8.2 compares the actual expenditure by type over the period since the 2015 Review (2016 to 2020 inclusive) with projected expenditure.

	Actual			Expected at 2015 Review (unadjusted for CPI)			Expected at 2015 Review (adjusted for CPI)		
Year	**Pension**	**Other**	**Total Expenditure**	**Pension related**	**Other**	**Total Expenditure**	**Pension related**	**Other**	**Total Expenditure**
2016	6.33	2.44	8.76	6.33	2.44	8.76	6.33	2.44	8.76
2017	6.61	2.48	9.09	6.52	2.61	9.13	6.52	2.61	9.13
2018	6.97	2.52	9.49	6.84	2.67	9.51	6.87	2.69	9.56
2019	7.44	2.58	10.02	7.15	2.73	9.89	7.25	2.77	10.02
2020	7.73	6.38	14.11	7.46	2.82	10.29	7.54	2.85	10.40

Table 8.2: Actual expenditure (€ billions) by type (pension and non-pension) during inter-review period versus expected at 2015 Review

8.2.1 Pension benefits expenditure

Overall, the projected pension related expenditure in 2020 was €7.54 billion as adjusted for CPI, whereas €7.73 billion materialised.

8.2.2 Non-pensions benefits expenditure

Projected 2020 non-pension benefits expenditure was €2.85 billion compared with the actual €6.38 billion that materialised in that year. 2020 (and indeed 2021) were exceptional years for non-pension benefit related expenditure given the impact of the Covid 19 pandemic and outlays due to the Pandemic Unemployment Payment.

8.3 Revised outlook for Cash-flow Projections

Table 8.3 sets out a comparison of selected results from the 2015 Review and the 2020 Review.

Comparison of surplus / (shortfalls) (€ bn) at 2015 and 2020 Reviews - spot years							
Shortfall	**2022**	**2025**	**2030**	**2040**	**2050**	**2060**	**2070**
2015 Review	-0.61	-1.71	-3.28	-8.44	-14.44	-19.31	-21.84
2015 Review (CPI adjusted)[30]	-0.68	-1.91	-3.67	-9.45	-16.17	-21.62	-24.46
2020 Review	2.66	2.64	1.35	-2.98	-9.62	-15.56	-20.22

Table 8.3: Projected cash-flows (€ billions) expected at 2015 and 2020 Reviews

30 Cumulative CPI over the period June 2017 to June 2022 was 11.98%. We compared the 11.98% figure the with cumulative impact of annual average CPI for 2018-2021 with an estimate for 2022 based on data to August 2022 and arrived at a similar figure for the 5-year period. Expected cashflows from the 2017 review were re-expressed in 2022 real price terms in the above tables for comparability with the 2022 figures.

The annual shortfall in 2070 is expected to be smaller at this Review - a shortfall of €20.2 billion versus a CPI adjusted projected shortfall of €24.5 billion at the previous Review.

Comparison of PRSI (€ bn) at 2015 and 2020 Reviews - various spot years							
Shortfall	**2022**	**2025**	**2030**	**2040**	**2050**	**2060**	**2070**
2015 Review	10.25	10.72	11.33	13.04	15.47	18.48	22.11
2015 Review (CPI adjusted)	11.48	12.00	12.69	14.60	17.32	20.69	24.76
2020 Review	14.17	15.97	17.83	21.50	25.26	29.75	34.80

Table 8.4: Projected PRSI (€ billions) expected at 2015 and 2020 Reviews

Projected PRSI income starts out materially ahead of expectations at the 2020 Review. PRSI income in 2022 is 23% ahead of the expected amount at the last review.

It continues ahead of expectations for the entire projection period up to 2070. By 2070 the projected PRSI income is c 40% higher than projected at the previous Review.

Comparison of expenditure (€ bn) at 2015 and 2020 Reviews - various spot years							
Shortfall	**2022**	**2025**	**2030**	**2040**	**2050**	**2060**	**2070**
2015 Review	10.86	12.43	14.61	21.48	29.91	37.79	43.95
2015 Review (CPI adjusted)	12.16	13.92	16.36	24.05	33.49	42.32	49.22
2020 Review	11.51	13.33	16.48	24.49	34.88	45.31	55.01

Table 8.5: Projected expenditure (€ billions) expected at 2015 and 2020 Reviews

In terms of overall expenditure projections, the cash flows are slightly below expectation at 2022 compared with the 2015 Review. In 2022, the expenditure is approximately 5% below the expectation at the last review.

However, by 2025 the overall expenditure is ahead of expectation and remains above for the rest of the projection period to 2070. By 2070 the expenditure is 20% above expectation.

Comparison of SPC expenditure (€ bn) at 2015 and 2020 Reviews - spot years							
Shortfall	**2022**	**2025**	**2030**	**2040**	**2050**	**2060**	**2070**
2015 Review	5.69	6.7	7.94	12.91	19.85	26.04	29.69
2015 Review (CPI adjusted)	6.37	7.50	8.89	14.46	22.23	29.16	33.25
2020 Review	6.38	7.74	10.11	16.28	24.68	32.77	40.10

Table 8.6: Projected State Pension (Contributory) expenditure (€ billions) expected at 2015 and 2020 Reviews

SPC is one of the main components of total expenditure. In the 2020 Review the projected expenditure on the SPC payment is broadly similar to that projected at the 2015 Review. However at the 2015 Review the SPA had been anticipated to increase to 67 in 2021.

SPC expenditure continues ahead of expectations for the projection period up to 2070. By 2070 the projected expenditure is 21% higher than at the 2015 Review. This is in part due to the fact that the 2015 Review had assumed the SPA to additionally increase to 68 in 2028, where the current review assumes the SPA to remain at 66 for the entire projection period.

8.4 Assumptions changes between Reviews

8.4.1 Macroeconomic Assumptions

Figure 8.2 below compares the differences between assumptions used in the 2020 and 2015 Reviews.

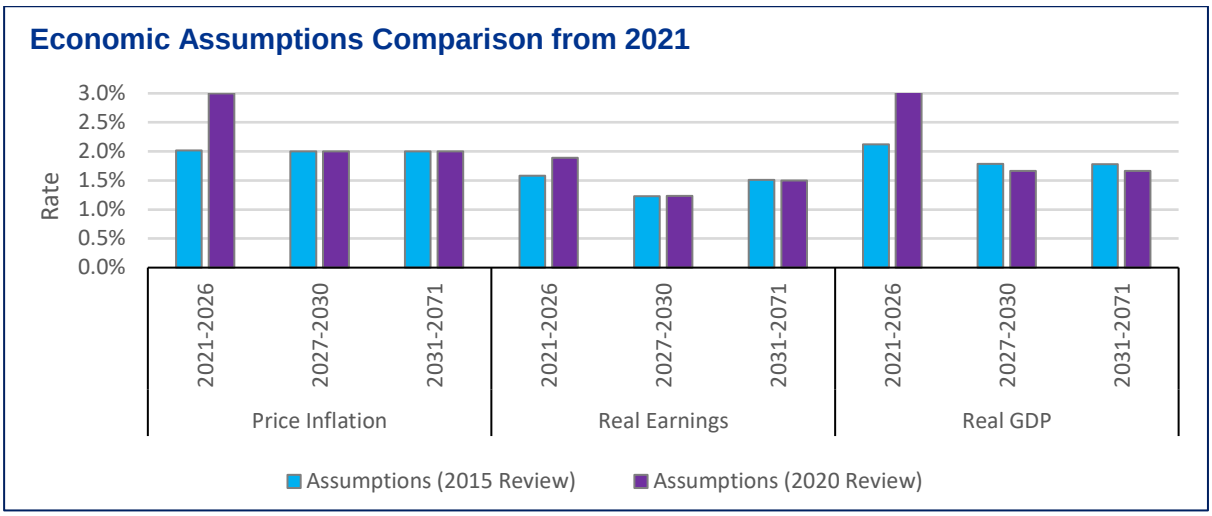

Figure 8.2: Differences in key economic assumptions 2015 and 2020 reviews from year 2021

Observations as follows:

- The price inflation is broadly in line with the assumption from the 2015 Review apart from the first 5 years (2021 - 2026) when it is expected to be ahead at this Review reflecting short term estimates made in the SPU 2022.
- Real earnings are higher at this Review in the short term (2021 - 2026) at 1.9% versus 1.6% per annum previously. Over the longer-term assumptions (from 2031+) at both Reviews also coincide at 1.5% per annum.
- Real GDP growth is expected to be higher in the short term as compared with the last Review. However, in the medium and longer term it is expected to be slightly lower than the 2015 Review (1.8% vs 1.7% in the medium term and longer term).

8.4.2 Demographic Assumptions

Differences at various spot years into the future as compared with 2015 Review are set out below. The revised life expectancies adopted for the 2020 Review are not materially different to those adopted for the 2015 Review and result in a circa 0.3 year addition to life expectancies for males and a 0.1 year addition for females

Life expectancies from age 65 at interval years - Males								
	2025	**2030**	**2035**	**2040**	**2045**	**2050**	**2055**	**2060**[31]
AWG 2018	19.4	19.9	20.4	20.9	21.3	21.8	22.3	22.7
AWG 2021	19.8	20.3	20.7	21.2	21.7	22.1	22.6	23.0
Difference	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.3

Table 8.6 (a): Life expectancies from age 65 at interval years - Males

Life expectancies from age 65 at interval years - Females								
	2025	**2030**	**2035**	**2040**	**2045**	**2050**	**2055**	**2060**
AWG 2018	22.2	22.7	23.2	23.8	24.3	24.8	25.2	25.7
AWG 2021	22.4	22.9	23.4	23.9	24.4	24.9	25.4	25.8
Difference	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1

Table 8.6 (b): Life expectancies from age 65 at interval years - Females

8.5 Legislative changes impacting results

The modelling reflects a number of recent legislative changes impacting results, most notably the repeal of the 2011 measure to increase the State pension age to 67 in 2021 and to 68 in 2028. To a lesser extent the introduction of the "better of" formula in 2018 for calculating SPC for new claimants from that point onward.

State pension age remaining at 66

The Social Welfare and Pensions Act 2011 provided for the standardisation of State pension to age 66 with effect from 2014. The legislation also provided that State Pension Age would further increase to age 67 in 2021 and to age 68 in 2028.

We unwound the effect of this 2011 legislative measure and found that overall, the €335bn (the net present value of future shortfalls) identified in the 2015 Review would increase to €377bn. Further detail of the impact on year-by-year expenditure and on the projected future shortfalls at various spot years is shown at Table 8.7.

31 Data to 2060 was readily available from the 2018 Ageing Report and we therefore used this as final year in the comparison.

	SIF 2015 Base Case				Scenario– SPA 66 throughout			
€ Bns	Total Receipts	Total Expenditure	Net	Shortfall % of GDP	Total Receipts	Total Expenditure	Surplus / Shortfall	Shortfall % of GDP
2015	8.5	8.6	-0.1	N/A	8.5	8.6	-0.1	N/A
2016	9.2	8.8	0.5	-0.2%	9.2	8.8	0.5	-0.2%
2017	9.6	9.1	0.5	-0.2%	9.6	9.1	0.5	-0.2%
2018	9.8	9.5	0.2	-0.1%	9.8	9.5	0.2	-0.1%
2019	9.9	9.9	0	0.0%	9.9	9.9	0	0.0%
2020	10	10.3	-0.2	0.1%	10	10.3	-0.2	0.1%
2025	10.7	12.4	-1.7	0.5%	10.7	12.8	-2.1	0.6%
2030	11.3	14.6	-3.3	0.9%	11.3	15.5	-4.2	1.1%
2035	12.1	17.8	-5.6	1.4%	12.0	18.8	-6.8	1.7%
2045	14.2	25.6	-11.4	2.4%	14.1	27.1	-13.0	2.7%
2055	16.9	34.2	-17.3	3.1%	16.8	35.8	-19.0	3.4%
2071	22.5	44.7	-22.2	2.9%	22.4	46.6	-24.2	3.2%

Table 8.7: Impact of repeal of the planned change to the SPA from 67, 68 in 2021 and 2028 to 66

Table 8.7 shows that by 2071 overall expenditure would increase from €44.7bn to €46.6bn which is driven by an increase of €2.7bn in SPC (from €30.1bn to €32.8bn) but a reduction of circa €0.8bn in Jobseekers, Illness and Invalidity expenditure. There is a small downward effect on incoming PRSI given the low numbers of contributors at ages 66+ in any event.

8.6 Bridging chart between 2015 Review and 2020 Review

Figure 8.3 shows a walk between the net present value ("NPV") of the shortfalls at the 2015 Review (€335.4 bn at a 1.5% real discount rate) and the 2020 Review (€271 bn at a 1.5% real discount rate).

The chart shows that the main items contributing to the changed position include:

- The unwinding of the 2011 legislative measure to increase the SPA = +€42 bn
- The impact of CPI over the period (12% cumulative five years to June 2022) which contribute to revised shortfalls expressed in 2022 real price terms = + €45 bn
- A reduction due to the PRSI base materially ahead of expectations = (€169 bn)
- The introduction of new benefits/ extensions to various benefits[32] = + €15 bn.

32 Benefits extended included Jobseeker's Benefit for the self-employed and Invalidity Pension extended to Class S. The treatment scheme was extensively extended, and other payments were introduced including Paternity Benefit, Parents Benefit, and the Benefit payment for 65 year olds.

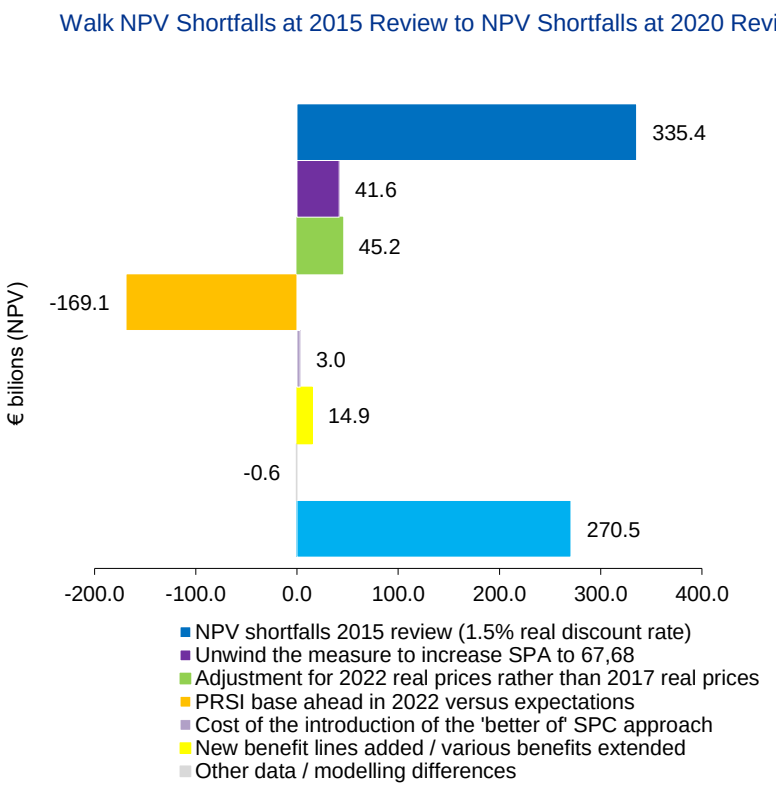

Figure 8.3: Walk of the NPV of the shortfalls in € Billions at 2015 Review to NPV of the shortfalls at 2020 Review.

9 Sensitivity and Scenario analysis

This chapter looks at sensitivities of the base case results to a range of alternative macroeconomic and demographic scenarios and key modelling assumptions as follows:

- Fertility changes
- Longevity changes and in particular the risk of continuing unforeseen improvements
- Migration changes
- Labour market changes
- Changes to real earnings growth rates
- Adverse scenarios and shocks

9.1 Introduction

Given the uncertainty surrounding assumptions underpinning long-run projections, a number of sensitivity tests were carried out in addition to the base case, so as to quantify the responsiveness of projection results to changes in key underlying assumptions.

The scenarios analysed are intended to allow an informed reader to understand the impact on the Fund of various alternative scenarios as compared with the base case.

9.2 Alternative stresses

The alternative stress tests can be categorised across variant demographic, labour force, macroeconomic and finally a short-term shock scenario.

9.3 Variant demographic stresses and impacts

9.3.1 Fertility rates

- Higher fertility: A total fertility rate ("TFR") which is 20% higher than the baseline over the entire projection period;
- Lower fertility: A total fertility rate ("TFR") which is 20% lower than the baseline over the entire projection period.

Shortfall / (surplus) in € millions under variant Fertility scenarios			
Year	**Base case**	**Fertility up**	**Fertility down**
2020	3,462	3,462	3,462
2030	-1,347	-1,255	-1,428
2040	2,984	3,019	2,960
2050	9,616	8,822	10,299
2060	15,555	13,438	17,297
2070	20,216	16,031	23,447
2076	24,892	19,047	29,567

Table 9.1: Shortfall / (surplus) in € millions under base case and variant fertility scenarios; 2022 real price terms

Higher fertility rates impact on Fund finances in terms of higher PRSI income reflecting increased numbers in the labour force starting in circa 20 years' time and increasing with time thereafter. Whilst higher fertility rates also impact Fund expenditure (with a lag as individuals are generally net contributors earlier on in their careers) the overall net impact of higher fertility rates is positive. The impact by 2076 is a revised shortfall of €19 billion rather than the €24.9 billion assumed in the base case.

9.3.2 Life expectancy

— Higher life expectancy: Increase in life expectancy at birth by 1 year by 2076 compared with baseline

— Lower life expectancy: Reduction in life expectancy at birth by 2 years by 2076 compared with baseline

Life expectancy at 65						
	2020	**2030**	**2040**	**2050**	**2060**	**2076**
Base Case	19.0	19.9	20.8	21.7	22.6	23.4
Life expectancy up	19.9	20.8	21.7	22.6	23.4	24.2
Life expectancy down	18.1	19.0	20.0	20.9	21.8	22.6

Table 9.2: Male life expectancy at 65 base case and alternative scenarios

Life expectancy at 65						
	2020	**2030**	**2040**	**2050**	**2060**	**2076**
Base Case	21.5	22.5	23.5	24.5	25.3	26.2
Life expectancy up	22.5	23.6	24.5	25.4	26.2	27.0
Life expectancy down	20.5	21.6	22.6	23.5	24.5	25.3

Table 9.3: Female life expectancy at 65 base case and alternative scenario

Shortfall / (surplus) in € millions under variant life expectancy scenarios			
Year	**Base case**	**Higher LE**	**Lower LE**
2020	3,462	3,462	3,462
2030	-1,347	-1,094	-1,213
2040	2,984	3,591	2,952
2050	9,616	10,558	9,321
2060	15,555	16,813	14,924
2070	20,216	21,497	19,289
2076	24,892	27,024	22,800

Table 9.4: Shortfall / (surplus) in € millions under variant mortality scenarios; 2022 real price terms

The different life expectancy scenarios examined are projected to have a reasonably material impact on shortfalls in later years of the projection period with the shortfall in 2076 anticipated to increase from €24.89 billion to €27.02 billion under a scenario whereby life expectancy at birth is assumed to be 2 years greater (by the end of the projection period) compared with the baseline. This is because life expectancy impacts on the length of time for which the SPC payments (the most material benefits of the SIF) are expected to be paid.

For the lower life expectancy scenario the shortfall in 2076 anticipated to reduce from €24.89 billion to €22.80 billion whereby life expectancy at birth is assumed to be 1 year less (by the end of the projection period) compared with the baseline.

9.3.3 Migration

— Rebase to 2019 levels (this baseline does not include any distorting effects due to the pandemic), scaled for population changes through time up to the end of the projection period;

— Higher migration: 50% higher than base case;

— Lower migration: 50% lower than base case;

Shortfall / (surplus) (€ millions) under variant Migration scenarios			
Year	**Base case**	**Migration up**	**Migration down**
2020	3,462	3,462	3,462
2030	-1,347	-2,054	-1,027
2040	2,984	479	3,405
2050	9,616	5,040	10,230
2060	15,555	8,624	15,679
2070	20,216	13,873	20,219
2076	24,892	19,888	28,280

Table 9.5: Shortfall / (surplus) in € millions under base case and variant migration scenarios; 2022 real price terms

Migration impacts both income and expenditure in the same direction albeit impacts on expenditure with a lag as typically individuals are net contributors to the Fund during their working lives before becoming net beneficiaries. The higher migration scenario (50% higher than the rebased scenario) has a larger impact with the shortfall being €19.9 billion versus the

€24.9 billion shortfall in the base case. In the lower migration scenario, the shortfall is projected to be €28.3 billion by 2076.

9.4 Variant labour force stress and impact

Higher employment rate (all ages): A scenario with the employment rate being 2 percentage points higher compared with the baseline projection for the age group 20-64. The increase is introduced linearly over a 10 year period and remains 2 percentage points higher thereafter. The higher employment rate is assumed to be achieved by lowering the structural unemployment rate.

Higher employment rate (older ages): Employment rate being 10 percentage points higher compared with the baseline projection at older ages (55-74). The 10% higher rate is phased in linearly over a 10 year period and remains 10 percentage points higher thereafter.

Lower employment rate (all ages): A scenario with the employment rate being 2 percentage points lower compared with the baseline projection for the age group 20-64. The increase is introduced linearly over a 10-year period and remains 2 percentage points lower thereafter. The lower employment rate is assumed to be achieved by increasing the structural unemployment rate.

Shortfall / (surplus) in € millions under variant employment scenarios				
Year	**Base case**	**Lower employment rate**	**Higher employment rate**	**Higher ER (older workers)**
2020	3,462	3,462	3,462	3,462
2030	-1,347	-737	-1,957	-1,860
2040	2,984	3,722	2,245	2,111
2050	9,616	10,456	8,776	8,615
2060	15,555	16,515	14,596	14,406
2070	20,216	21,149	19,284	18,997
2076	24,892	25,764	24,020	23,669

Table 9.6: Shortfall / (surplus) in € millions under base case and variant employment scenarios; 2022 real price terms

With regard to the labour force stresses the corollary also holds true. Higher employment leads to lower shortfalls as indicated above whereas a similar and opposite effect would be observed for lower employment / higher unemployment scenarios. Higher employment feeds through to higher PRSI receipts and results in lower expenditure on working age supports such as Jobseeker's Benefit and Jobseeker's Benefit (Self-Employed).

9.5 Variant macro-economic stresses and impact

9.5.1 Real earnings growth sensitivities

Whereas the base case assumes that real earnings growth increase to 1.5% per annum in the long term (from 2036 onward) we examine the following scenarios:

— Lower earnings growth scenario: 0.5% lower per annum throughout;

— Higher earnings growth scenario: 0.5% higher per annum throughout.

Shortfall / (surplus) (€ millions) under lower real earnings growth scenario				
	Base case		Lower earnings growth	
Year	Base case	As % of GNI*	Lower earnings Growth	As % of GNI*
2020	3,462	1.7%	3,462	1.7%
2030	-1,347	-0.5%	-1,253	-0.5%
2040	2,984	0.9%	2,721	0.9%
2050	9,616	2.4%	8,294	2.4%
2060	15,555	3.3%	12,757	3.3%
2070	20,216	3.6%	15,778	3.6%
2076	24,892	4.1%	18,854	4.1%

Table 9.7 (a): Shortfall / (surplus) in € millions under base case and lower real earnings growth; 2022 real price terms

Shortfall / (surplus) (€ millions) under higher real earnings growth scenario				
	Base case		Higher earnings growth	
Year	Base case	As % of GNI*	Higher earnings Growth	As % of GNI*
2020	3,462	1.7%	3,462	1.7%
2030	-1,347	-0.5%	-1,358	-0.5%
2040	2,984	0.9%	3,248	0.9%
2050	9,616	2.4%	10,928	2.4%
2060	15,555	3.3%	18,549	3.3%
2070	20,216	3.6%	25,315	3.6%
2076	24,892	4.1%	32,092	4.1%

Table 9.7 (b): Shortfall / (surplus) in € millions under base case and higher real earnings growth; 2022 real price terms

The varying real earnings growth scenarios have the biggest impact on the Fund finances (in 2022 real price terms), with the scenario reflecting a 0.5% higher real growth rate giving rise to a shortfall of €32.1 billion as compared with the base case of €24.9 billion.

Real earnings growth impacts on the increase in projected benefit expenditure as well as PRSI receipts (reflecting the policy that the SPC will be maintained in line with Average Earnings). Given the projected increase in the number of projected pension beneficiaries in the future, a year-on-year cumulative increase / decrease in this variable has a significant knock-on impact in terms of the overall pension expenditure by the end of the projection period and the related shortfall arising.

However, whilst the real earnings growth scenarios have the biggest absolute impact the impact relative to the size of the overall economy is unchanged as growth in GDP and GNI* commensurately increase/decrease in line with labour force productivity / real earnings growth. This can be observed in Tables 9.7 (a) and (b). While the absolute shortfall amounts change in 2022 real price terms, there is no projected change to the deficit as a percentage of GNI*.

9.6 Adverse scenarios / shocks

9.6.1 Impact of conflict in Ukraine on Fund finances

The Stability Programme Update 2022 published by the Department of Finance discusses the uncertainty surrounding the central scenario contained within that update.

The Department of Finance's central scenario is calibrated on the assumption that the fallout from the conflict in Ukraine slows, rather than de-rails, the economic recovery triggered by the full-elimination of pandemic-related restrictions. In relation to the latter, a key building block of the projections is the assumption that the pandemic remains in check.

That department conducted a scenario whereby consumer price inflation is higher in the short term due to wholesale energy price increases. That department observes that the impact of higher oil and gas prices would not only affect inflation, but would also have broader macroeconomic implications, for instance consumption and production would be expected to be lower. The economic impact of an increase in world oil prices consistent with the above scenario resulting in a circa 2 percentage points increase in inflation in the year of the shock (i.e. year T) was calibrated and lower growth in GDP was forecast.

This energy price shock transmits throughout the economy via the real income shock to households, with consumer spending and production lower. Because of this, the demand for labour falls, and this is reflected in a higher level of unemployment (0.2 percentage points higher in the year following the shock). The results outlined above could be considered a minimum rather than a maximum, with several reasons to suspect the impact could be more severe. This is because of other channels that are not directly accounted for in this simulation: these include a decrease in world demand for Irish exports (decreasing output in Ireland's traded sector in the near-term) and higher prices for other energy intensive inputs (such as fertiliser) which would indirectly impact on production.

Impact on variables due to energy price shock following shock year T						
Year	**T**	**T+1**	**T+2**	**T+3**	**T+4**	**T+5**
Inflation / CPI	1.9	0.7	0.7	0.6	0.6	0.5
Unemployment	0.1	0.2	0.3	0.4	0.5	0.5
GDP growth	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5

Table 9.8: SPU 2022 adverse scenario initiated by energy price shock

Impact of adverse scenario due to Ukrainian conflict (as compared with base case)										
	Base Case					Adverse scenario due to Ukrainian conflict				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.5)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.0	2.8	1.1%	5.4	14.7	12.0	2.7	1.1%	5.3
2024	15.4	12.7	2.7	1.1%	8.1	15.2	12.7	2.5	1.0%	7.9
2025	16.0	13.3	2.6	1.0%	10.8	15.7	13.3	2.4	0.9%	10.2
2026	16.4	13.9	2.4	0.9%	13.2	16.0	13.9	2.1	0.8%	12.3
2027	16.8	14.8	2.0	0.7%	15.2	16.4	14.8	1.6	0.6%	14.0
2028	17.1	15.2	1.9	0.7%	17.1	16.8	15.2	1.6	0.6%	15.5
2029	17.5	15.8	1.6	0.6%	18.8	17.1	15.9	1.2	0.4%	16.7
2030	17.8	16.5	1.3	0.5%	20.1	17.4	16.6	0.9	0.3%	17.6
2035	19.6	20.1	(0.5)	(0.1)%	21.4	19.2	20.2	(1.0)	(0.3)%	16.4
2040	21.5	24.5	(3.0)	(0.9)%	11.4	21.0	24.6	(3.6)	(1.1)%	3.7
2045	23.3	29.5	(6.1)	(1.6)%	(13.2)	22.8	29.6	(6.8)	(1.8)%	(23.9)
2050	25.3	34.9	(9.6)	(2.4)%	(55.1)	24.7	35.0	(10.3)	(2.6)%	(69.2)
2055	27.4	40.4	(13.0)	(3.0)%	(112.4)	26.8	40.5	(13.7)	(3.2)%	(130.0)
2060	29.8	45.3	(15.6)	(3.3)%	(182.5)	29.1	45.4	(16.3)	(3.5)%	(203.8)
2065	32.3	49.8	(17.5)	(3.4)%	(264.6)	31.6	50.0	(18.4)	(3.6)%	(290.1)
2070	34.8	55.0	(20.2)	(3.6)%	(361.1)	34.0	55.4	(21.3)	(3.9)%	(391.6)
2076	38.1	63.0	(24.9)	(4.1)%	(498.5)	37.2	63.5	(26.3)	(4.4)%	(536.8)

Table 9.9: Impact of adverse scenario due to Ukrainian conflict as compared with base case. Figures shown in € billions.

The impact of this scenario on the Fund finances is muted for the following reasons:

— Higher inflation doesn't impact as it is assumed to impact both income and receipts equally and in any event the amounts shown are discounted back to 2022 real price terms;
— Higher unemployment has some impact on the finances as it affects PRSI receipts and Jobseeker's expenditure, but it does not have a direct impact on other more material expenditure items including pension related expenditure;
— Lower GDP and GNI* growth for a few years at outset mean that the projected deficits are expressed as a % of lower GNI* (circa 2% cumulative impact) in future years.

9.6.2 Impact of conflict in Ukraine on incremental PRSI requirements

We explain in Chapter 10 what each of Policy Option 1, 1(a), 2, 2(a), 3 and the "full projection period" scenario represent. We calculate the incremental PRSI required to eliminate the projected actuarial shortfall by 2040 under each of these options reflecting base case assumptions and present the results in Chapter 10. In this subsection we have calculated the incremental PRSI required under each of these options reflecting the Ukrainian conflict scenario as described at subsection 9.6.1.

Expenditure under the policy options in this subsection differs from that in Table 9.9 as it reflects the phase out of the yearly average approach over the ten year period commencing in

2024+ and indeed other changes impacting SPC including the “smoothed earnings” approach to indexation outlined in Appendix 7 with further analysis of its impact at 10.3.4.

Figures reflecting Policy Option 1 – Ukrainian conflict scenario

PRSI rate increases coupled with better of SPC formula phase out; “Policy Option 1” – Ukrainian conflict scenario	
Main Benefit considerations for SPC	SPC increases in line with the “smoothed earnings” approach to indexation Phase out of “yearly average” approach for calculating SPC from 2024+
Self-employed (Class S)	Increase from 4% to average of Class A employee and employer rate by 2040
Employer and employees each (Class A)	No increase by 2030; 1.07 percentage point increase by 2040

Table 9.10: Headline impacts on PRSI by class and employer / employee of Policy Option 1 under Ukrainian conflict scenario

Impact of Pensions Commission modified package 1 “Policy Option 1” - Ukrainian conflict scenario						
Ukrainian conflict scenario - existing legislative basis				Ukrainian conflict scenario - Policy Option 1		
Year	Receipts	Expenditure	Net[33]	Receipts	Expenditure	Net
2020	10.6	14.1	(3.5)	10.6	14.1	(3.5)
2021	11.8	14.9	(3.1)	11.8	14.9	(3.1)
2022	14.2	11.5	2.7	14.2	11.5	2.7
2023	14.7	12.0	2.7	14.7	12.4	2.3
2024	15.2	12.7	2.5	15.3	13.5	1.8
2025	15.7	13.3	2.4	15.8	14.1	1.6
2026	16.0	13.9	2.1	16.2	14.8	1.4
2027	16.4	14.8	1.6	16.6	15.6	0.9
2028	16.8	15.2	1.6	17.0	16.1	0.9
2029	17.1	15.9	1.2	17.4	16.8	0.6
2030	17.4	16.6	0.9	17.8	17.4	0.4
2035	19.2	20.2	(1.0)	21.2	20.9	0.3
2040	21.0	24.6	(3.6)	25.1	25.1	0.0

Table 9.11: Income and expenditure - Ukrainian conflict scenario on the existing legislative basis and Policy Option 1

Impact by PRSI Class of Pensions Commission modified package 1 " Policy Option 1" - Ukrainian conflict scenario						
Class A employee			Class A employer		Class S	
Year	Base Case	Policy Option 1 & Ukrainian conflict	Base Case	Policy Option 1 & Ukrainian conflict	Base Case	Policy Option 1 & Ukrainian conflict
2020	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2021	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2030	4.00%	4.00%	10.05%	10.05%	4.00%	5.69%
2031	4.00%	4.11%	10.05%	10.16%	4.00%	5.93%
2032	4.00%	4.21%	10.05%	10.26%	4.00%	6.17%
2033	4.00%	4.32%	10.05%	10.37%	4.00%	6.41%

33 As mentioned in chapter 7, the surplus / shortfall amounts in base case may differ to the shown differences in receipts and expenditure due to rounding.

Impact by PRSI Class of Pensions Commission modified package 1 " Policy Option 1" - Ukrainian conflict scenario						
2034	4.00%	4.43%	10.05%	10.48%	4.00%	6.65%
2035	4.00%	4.54%	10.05%	10.59%	4.00%	6.89%
2036	4.00%	4.64%	10.05%	10.69%	4.00%	7.14%
2037	4.00%	4.75%	10.05%	10.80%	4.00%	7.38%
2038	4.00%	4.86%	10.05%	10.91%	4.00%	7.62%
2039	4.00%	4.97%	10.05%	11.02%	4.00%	7.86%
2040	4.00%	5.07%	10.05%	11.12%	4.00%	8.10%

Table 9.12: PRSI rate by Class reflecting Policy Option 1 – Ukrainian conflict scenario

Figures reflecting Policy Option 1(a) - Ukrainian conflict scenario

"Policy Option 1(a)": As per Policy Option 1 but with both Class A and S increases commencing in 2024	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase from 4% to average of Class A employee and employer rate by 2040
Employer and employees each (Class A)	0.22 percentage point increase by 2030; 0.85 percentage point increase by 2040

Table 9.13: Headline impacts on PRSI by class and employer / employee of Policy Option 1(a) – Ukrainian conflict scenario

Impact on PRSI Class of "Policy Option 1(a)" – Class A and S increases commencing in 2024						
Class A employee			Class A employer		Class S	
Year	Base Case	Policy Option 1a & Ukrainian conflict	Base Case	Policy Option 1a & Ukrainian conflict	Base Case	Policy Option 1a & Ukrainian conflict
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.03%	10.05%	10.08%	4.00%	4.24%
2025	4.00%	4.06%	10.05%	10.11%	4.00%	4.48%
2026	4.00%	4.09%	10.05%	10.14%	4.00%	4.72%
2027	4.00%	4.13%	10.05%	10.18%	4.00%	4.96%
2028	4.00%	4.16%	10.05%	10.21%	4.00%	5.21%
2029	4.00%	4.19%	10.05%	10.24%	4.00%	5.45%
2030	4.00%	4.22%	10.05%	10.27%	4.00%	5.69%
2031	4.00%	4.31%	10.05%	10.36%	4.00%	5.93%
2032	4.00%	4.39%	10.05%	10.44%	4.00%	6.17%
2033	4.00%	4.48%	10.05%	10.53%	4.00%	6.41%
2034	4.00%	4.56%	10.05%	10.61%	4.00%	6.65%
2035	4.00%	4.65%	10.05%	10.70%	4.00%	6.89%
2036	4.00%	4.73%	10.05%	10.78%	4.00%	7.14%
2037	4.00%	4.82%	10.05%	10.87%	4.00%	7.38%
2038	4.00%	4.90%	10.05%	10.95%	4.00%	7.62%
2039	4.00%	4.99%	10.05%	11.04%	4.00%	7.86%
2040	4.00%	5.07%	10.05%	11.12%	4.00%	8.10%

Table 9.14: PRSI rate by Class reflecting Policy Option 1(a) – Ukrainian conflict scenario

The increase in the Class A rate commences earlier in Policy Option 1(a) as compared with Policy Option 1 – i.e. rate increases commence in 2024 rather than in 2031. Smaller incremental increases are required but over a longer period – a 0.22 percentage point increase by 2030 followed by a 0.85 percentage point increase by 2040. The incremental increase in Class S to 2040 is unchanged from that under Policy Option 1.

Figures reflecting Policy Option 2 - Ukrainian conflict scenario

Policy Option 2: PRSI rate increases (Class S in sync with Class A employee rate)	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Employer and employees each (Class A)	No increase by 2030; 1.32 percentage point increase by 2040

Table 9.15: Headline impacts on PRSI by class and employer / employee of Policy Option 2 – Ukrainian conflict scenario

Impact on PRSI Class of "Policy Option 2" – Class S increases in line with Class A employee rate						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 2 & Ukrainian conflict	Base Case	Policy Option 2 & Ukrainian conflict	Base Case	Policy Option 2 & Ukrainian conflict
2020	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2021	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2030	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2031	4.00%	4.13%	10.05%	10.18%	4.00%	4.13%
2032	4.00%	4.26%	10.05%	10.31%	4.00%	4.26%
2033	4.00%	4.39%	10.05%	10.44%	4.00%	4.39%
2034	4.00%	4.53%	10.05%	10.58%	4.00%	4.53%
2035	4.00%	4.66%	10.05%	10.71%	4.00%	4.66%
2036	4.00%	4.79%	10.05%	10.84%	4.00%	4.79%
2037	4.00%	4.92%	10.05%	10.97%	4.00%	4.92%
2038	4.00%	5.05%	10.05%	11.10%	4.00%	5.05%
2039	4.00%	5.18%	10.05%	11.23%	4.00%	5.18%
2040	4.00%	5.32%	10.05%	11.37%	4.00%	5.32%

Table 9.16: PRSI rate by Class reflecting Policy Option 2 – Ukrainian conflict scenario

As Class S does not increase by as much as Policy Option 1 throughout the period, there is an overall increase required of 1.32 percentage points on Class A employee contributions by 2040, compared to 1.07 percentage points in Policy Option 1. The required PRSI rate at an individual level for Class S is much lower than was observed in Policy Option 1. There is an overall increase of 1.32 percentage points on Class S employee contributions by 2040 required to offset the then shortfall (same as Class A by design), compared to 4.10 percentage points in Policy Option 1.

Figures reflecting Policy Option 2(a) – Ukrainian conflict scenario

Policy Option 2(a): As per Policy Option 2 but with a lifting of the PRSI age exemption limit from 66 to 70	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Employer and employees each (Class A)	No increase by 2030; 1.07 percentage point increase by 2040

Table 9.17: Headline impacts on PRSI by class and employer / employee of Policy Option 2(a) – Ukrainian conflict scenario

The impact of the lifting of the age exemption limit from age 66 to age 70 and the larger PRSI base (which includes those in the 66 – 69 year old age range) reduces the required incremental PRSI rate increases projected to eliminate shortfalls.

Impact on PRSI Class of "Policy Option 2(a)" – As per Policy Option 2 and a lifting of the age exemption limit						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 2a & Ukrainian conflict	Base Case	Policy Option 2a & Ukrainian conflict	Base Case	Policy Option 2a & Ukrainian conflict
2020	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2021	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2030	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2031	4.00%	4.11%	10.05%	10.16%	4.00%	4.11%
2032	4.00%	4.21%	10.05%	10.26%	4.00%	4.21%
2033	4.00%	4.32%	10.05%	10.37%	4.00%	4.32%
2034	4.00%	4.43%	10.05%	10.48%	4.00%	4.43%
2035	4.00%	4.53%	10.05%	10.58%	4.00%	4.53%
2036	4.00%	4.64%	10.05%	10.69%	4.00%	4.64%
2037	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%
2038	4.00%	4.85%	10.05%	10.90%	4.00%	4.85%
2039	4.00%	4.96%	10.05%	11.01%	4.00%	4.96%
2040	4.00%	5.07%	10.05%	11.12%	4.00%	5.07%

Table 9.18: PRSI rate by Class reflecting Policy Option 2(a) – Ukrainian conflict scenario

Figures reflecting Policy Option 3 – Ukrainian conflict scenario

Policy Option 3	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase from 4% to Class A employer rate by 2040
Employer and employees each (Class A)	No increase by 2030; 0.83 percentage point increase by 2040

Table 9.19: Headline impacts on PRSI by class and employer / employee of Policy Option 3 – Ukrainian conflict scenario

The impact on PRSI rates of the Ukrainian conflict and Policy Option 3 on a year by year basis is shown in Table 9.20. The impact is similar to Policy Option 1 except the class A rate increases by 0.83 percentage point increases by 2040 rather than 1.07 percentage point

increases under Policy Option 1. Class S increases significantly more materially under Policy Option 3 from 4% to 10.88% as compared with an increase to 8.1% under Policy Option 1.

Impact on PRSI Class of Policy Option 3						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 3 & Ukrainian conflict	Base Case	Policy Option 3 & Ukrainian conflict	Base Case	Policy Option 3 & Ukrainian conflict
2020	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2021	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2030	4.00%	4.00%	10.05%	10.05%	4.00%	6.83%
2031	4.00%	4.08%	10.05%	10.13%	4.00%	7.24%
2032	4.00%	4.17%	10.05%	10.22%	4.00%	7.64%
2033	4.00%	4.25%	10.05%	10.30%	4.00%	8.05%
2034	4.00%	4.33%	10.05%	10.38%	4.00%	8.45%
2035	4.00%	4.42%	10.05%	10.47%	4.00%	8.86%
2036	4.00%	4.50%	10.05%	10.55%	4.00%	9.26%
2037	4.00%	4.58%	10.05%	10.63%	4.00%	9.67%
2038	4.00%	4.67%	10.05%	10.72%	4.00%	10.07%
2039	4.00%	4.75%	10.05%	10.80%	4.00%	10.48%
2040	4.00%	4.83%	10.05%	10.88%	4.00%	10.88%

Table 9.20: PRSI rate by Class reflecting Policy Option 3 – Ukrainian conflict scenario

9.6.3 Impact of a multi-year recession

Shock to PRSI receipts and GDP / GNI* growth, higher Jobseeker's Benefit payments similar to 2009 - 2013, yet benefit inflation continues. The shock assumed to occur in 2023 – 2027 as highlighted in Table 9.21.

- Stunted economic growth over a number of years leading to lower GDP/GNI* growth;
- Lower demand for goods and services which in turn mean lower employment rates and higher unemployment;
- Contraction in PRSI similar to that seen in 2009-2013 occurring hypothetically in 2023-2027 with the subsequent recovery that also took place thereafter due to measures taken (implicitly assuming similar measures would be taken again);
- Assume that benefit inflationary pressure continue in the face of high sustained inflation/ cost of living pressures. We have assumed for the purposes of this scenario that benefit inflation is such that the SPC increases by 9% above base case in 2023 and stays at that level for the duration of the shock to 2027 thereafter reducing gradually over 5 years, other benefits increase in tandem.

Impact of adverse scenario due to multi-year recession (as compared with base case)										
	Base Case					Adverse scenario due to multi-year recession				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.0	2.8	1.1%	5.4	12.3	12.9	(0.6)	(0.3)%	2.1
2024	15.4	12.7	2.7	1.1%	8.1	11.3	14.3	(3.0)	(1.5)%	(0.9)
2025	16.0	13.3	2.6	1.0%	10.8	12.2	14.6	(2.3)	(1.1)%	(3.2)
2026	16.4	13.9	2.4	0.9%	13.2	11.0	15.0	(4.0)	(2.0)%	(7.2)
2027	16.8	14.8	2.0	0.7%	15.2	11.6	15.6	(4.0)	(2.0)%	(11.3)

Table 9.21: Impact of adverse scenario due to multi-year recession as compared with base case. Figures shown in € billions.

The shock is short and sharp with a reduction in projected receipts by year 5 of the shock of 30% compared with the base case projection. The multi-year recession coupled with benefit inflationary pressure results in higher expenditure across all benefit types including SPC and Jobseeker's Benefit, Jobseeker's (Self-Employed) Benefit. The net position is a shortfall, and the shortfall is expressed as a % of the then projected lower GNI* due to the contraction.

9.6.4 Impact of multi-year recession on incremental PRSI requirements

We have assumed that PRSI receipts, the economy and expenditure will recover post the multi-year recession. The incremental PRSI rates calculated under this scenario (which are designed to eliminate the actuarial shortfall by 2040) are no different than under the base case scenario described in Chapter 10, given the assumed recovery after this shock.

9.6.5 Impact of a multi-year recession and conflict in Ukraine continues

As per the multi-year recession scenario as described at 9.6.3 plus incrementally adverse growth in GNI* and incrementally higher unemployment / lower employment growth due to ongoing Ukrainian conflict as per scenario summarised in subsection 9.6.1.

Impact of adverse scenario due to Multi-Year Recession and Ukrainian conflict continuing (as compared with base case)										
	Base Case					Adverse scenario (recession & Ukrainian conflict)				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.0	2.8	1.1%	5.4	12.2	12.9	(0.7)	(0.3)%	2.0
2024	15.4	12.7	2.7	1.1%	8.1	11.1	14.2	(3.1)	(1.6)%	(1.2)
2025	16.0	13.3	2.6	1.0%	10.8	11.8	14.5	(2.7)	(1.3)%	(3.9)
2026	16.4	13.9	2.4	0.9%	13.2	10.4	15.0	(4.6)	(2.3)%	(8.5)
2027	16.8	14.8	2.0	0.7%	15.2	10.7	15.7	(5.0)	(2.5)%	(13.5)

Table 9.22: Impact of adverse scenario due to multi-year recession, conflict in Ukraine continues as compared with base case. Cashflows in € billions

9.6.6 Incremental PRSI requirements in the scenario of a multi-year recession and conflict in Ukraine continuing

The incremental PRSI in this scenario is as shown at 9.6.2 reflecting the effect of the conflict in the Ukraine continuing. There is no further incremental PRSI required in respect of the multi-year recession between 2023 – 2027 as the economy is assumed to recover from the shock shortly thereafter and otherwise continue the trajectory as per the Ukrainian conflict scenario described at 9.6.1.

9.6.7 Impact of a multi-year recession, conflict in Ukraine continues, lower long term growth

— Lower permanent growth in employment due to stagflation. Shock as per 9.6.5 but thereafter reflecting permanently lower growth;
— This scenario assumes that benefit inflationary pressure continue in the face of high sustained inflation/ cost of living pressures. We have assumed that benefit inflation is such that the SPC increases by 9% above base case in 2023 and stays at that level for the duration of the shock to 2027 thereafter reducing gradually over 5 years, other benefits increase in tandem;
— Deficits are larger in both absolute terms and expressed as a proportion of GNI* given that in this scenario the economy does not recover from the shock of 2023 - 2027.

Impact of adverse scenario due to Multi-Year Recession, Ukrainian conflict continuing, lower growth (versus base case)										
	Base Case					Very adverse scenario				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.0	2.8	1.1%	5.4	12.2	12.9	(0.7)	(0.3)%	2.0
2024	15.4	12.7	2.7	1.1%	8.1	11.1	14.2	(3.1)	(1.6)%	(1.2)
2025	16.0	13.3	2.6	1.0%	10.8	11.8	14.5	(2.7)	(1.3)%	(3.9)
2026	16.4	13.9	2.4	0.9%	13.2	10.4	15.0	(4.6)	(2.3)%	(8.5)
2027	16.8	14.8	2.0	0.7%	15.2	10.7	15.7	(5.0)	(2.5)%	(13.5)
2028	17.1	15.2	1.9	0.7%	17.1	10.9	16.0	(5.0)	(2.5)%	(18.5)
2029	17.5	15.8	1.6	0.6%	18.8	11.1	16.5	(5.3)	(2.6)%	(23.9)
2030	17.8	16.5	1.3	0.5%	20.1	11.4	17.0	(5.6)	(2.7)%	(29.5)
2035	19.6	20.1	(0.5)	(0.1)%	21.4	12.5	20.3	(7.7)	(3.4)%	(63.4)
2040	21.5	24.5	(3.0)	(0.9)%	11.4	13.7	24.7	(11.0)	(4.4)%	(111.8)
2045	23.3	29.5	(6.1)	(1.6)%	(13.2)	14.9	29.7	(14.8)	(5.4)%	(178.4)
2050	25.3	34.9	(9.6)	(2.4)%	(55.1)	16.1	35.1	(19.0)	(6.4)%	(265.7)
2055	27.4	40.4	(13.0)	(3.0)%	(112.4)	17.5	40.6	(23.2)	(7.2)%	(372.1)
2060	29.8	45.3	(15.6)	(3.3)%	(182.5)	19.0	45.6	(26.6)	(7.7)%	(495.5)
2065	32.3	49.8	(17.5)	(3.4)%	(264.6)	20.6	50.1	(29.5)	(7.8)%	(635.5)
2070	34.8	55.0	(20.2)	(3.6)%	(361.1)	22.2	55.5	(33.3)	(8.2)%	(795.2)
2076	38.1	63.0	(24.9)	(4.1)%	(498.5)	24.3	63.6	(39.3)	(8.8)%	(1,015.7)

Table 9.23: Adverse scenario due to multi-year recession, conflict in Ukraine continues, permanently lower growth v base case

9.6.8 Impact of multi-year recession, conflict in Ukraine continues, lower long term growth on incremental PRSI requirements

In this subsection we have calculated the incremental PRSI required under each of Policy Options 1, 1(a), 2, 2(a), 3 and the "full projection period" scenario (further described in Chapter 10), reflecting the very adverse scenario of a multi-year recession, ongoing conflict in Ukraine and lower long-term growth prospects for the economy.

Figures reflecting Policy Option 1 – multi-year recession, conflict in Ukraine continues, lower long term growth scenario

PRSI rate increases coupled with better of SPC formula phase out; "Policy Option 1" – very adverse scenario	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase from 4% to average of Class A employee and employer rate by 2040
Employer and employees each (Class A)	1.48 percentage point increase by 2030; 3.41 percentage point increase by 2040

Table 9.24: Headline impacts on PRSI by class of Policy Option 1 – multi-year recession, conflict in Ukraine continues and lower long term growth scenario

Impact of Pensions Commission modified package 1 "Policy Option 1" - very adverse scenario						
Very adverse scenario - existing legislative basis				Very adverse scenario - Policy Option 1		
Year	Receipts	Expenditure	Net[34]	Receipts	Expenditure	Net
2020	10.6	14.1	(3.5)	10.6	14.1	(3.5)
2021	11.8	14.9	(3.1)	11.8	14.9	(3.1)
2022	14.2	11.5	2.7	14.2	11.5	2.7
2023	12.2	12.9	(0.7)	12.2	13.3	(1.1)
2024	11.1	14.2	(3.1)	13.3	15.1	(1.9)
2025	11.8	14.5	(2.7)	16.1	15.4	0.6
2026	10.4	15.0	(4.6)	13.7	15.9	(2.2)
2027	10.7	15.7	(5.0)	16.6	16.6	0.0
2028	10.9	16.0	(5.0)	16.9	16.9	0.0
2029	11.1	16.5	(5.3)	17.3	17.4	(0.0)
2030	11.4	17.0	(5.6)	17.9	17.9	0.0
2035	12.5	20.3	(7.7)	21.5	21.0	0.5
2040	13.7	24.7	(11.0)	25.1	25.1	0.0

Table 9.25: Income and expenditure as per scenario of multi-year recession, conflict in Ukraine continues and lower long term growth scenario - existing legislative basis and Policy Option 1

34 As mentioned in chapter 7, the surplus / shortfall amounts in base case may differ to the shown differences in receipts and expenditure due to rounding.

Impact by PRSI Class of Pensions Commission modified package 1 " Policy Option 1" - very adverse scenario						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 1 & very adverse scenario	Base Case	Policy Option 1 & very adverse scenario	Base Case	Policy Option 1 & very adverse scenario
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.21%	10.05%	10.26%	4.00%	4.47%
2025	4.00%	4.42%	10.05%	10.47%	4.00%	4.93%
2026	4.00%	4.63%	10.05%	10.68%	4.00%	5.40%
2027	4.00%	4.84%	10.05%	10.89%	4.00%	5.86%
2028	4.00%	5.06%	10.05%	11.11%	4.00%	6.33%
2029	4.00%	5.27%	10.05%	11.32%	4.00%	6.79%
2030	4.00%	5.48%	10.05%	11.53%	4.00%	7.26%
2031	4.00%	5.82%	10.05%	11.87%	4.00%	7.73%
2032	4.00%	6.16%	10.05%	12.21%	4.00%	8.19%
2033	4.00%	6.50%	10.05%	12.55%	4.00%	8.66%
2034	4.00%	6.84%	10.05%	12.89%	4.00%	9.12%
2035	4.00%	7.18%	10.05%	13.23%	4.00%	9.59%
2036	4.00%	7.53%	10.05%	13.58%	4.00%	10.05%
2037	4.00%	7.87%	10.05%	13.92%	4.00%	10.52%
2038	4.00%	8.21%	10.05%	14.26%	4.00%	10.98%
2039	4.00%	8.55%	10.05%	14.60%	4.00%	11.45%
2040	4.00%	8.89%	10.05%	14.94%	4.00%	11.92%

Table 9.26: PRSI rate by Class reflecting Policy Option 1 – multi-year recession, conflict in Ukraine continues and lower long term growth scenario

Figures reflecting Policy Option 1(a) – multi-year recession, conflict in Ukraine continues, lower long term growth scenario

In the very adverse scenario described in this subsection the incremental PRSI required under Policy Option 1(a) is the same as under Policy Option 1. Incremental PRSI for class A commences from year 2024 under both options.

Figures reflecting Policy Option 2 – multi-year recession, conflict in Ukraine continues, lower long term growth scenario

Policy Option 2: PRSI rate increases (Class S in sync with Class A employee rate)	
Main Benefit considerations for SPC	SPC increases in line with the “smoothed earnings” approach to indexation Phase out of “yearly average” approach for calculating SPC from 2024+
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Employer and employees each (Class A)	1.62 percentage point increase by 2030; 3.51 percentage point increase by 2040

Table 9.27: Headline impacts on PRSI of Policy Option 2 – multi-year recession, conflict in Ukraine continues and lower long term growth scenario

Impact on PRSI Class of "Policy Option 2" – Class S increases in line with Class A employee rate						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 2 & very adverse scenario	Base Case	Policy Option 2 & very adverse scenario	Base Case	Policy Option 2 & very adverse scenario
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.23%	10.05%	10.28%	4.00%	4.23%
2025	4.00%	4.46%	10.05%	10.51%	4.00%	4.46%
2026	4.00%	4.69%	10.05%	10.74%	4.00%	4.69%
2027	4.00%	4.92%	10.05%	10.97%	4.00%	4.92%
2028	4.00%	5.16%	10.05%	11.21%	4.00%	5.16%
2029	4.00%	5.39%	10.05%	11.44%	4.00%	5.39%
2030	4.00%	5.62%	10.05%	11.67%	4.00%	5.62%
2031	4.00%	5.97%	10.05%	12.02%	4.00%	5.97%
2032	4.00%	6.32%	10.05%	12.37%	4.00%	6.32%
2033	4.00%	6.67%	10.05%	12.72%	4.00%	6.67%
2034	4.00%	7.02%	10.05%	13.07%	4.00%	7.02%
2035	4.00%	7.37%	10.05%	13.42%	4.00%	7.37%
2036	4.00%	7.73%	10.05%	13.78%	4.00%	7.73%
2037	4.00%	8.08%	10.05%	14.13%	4.00%	8.08%
2038	4.00%	8.43%	10.05%	14.48%	4.00%	8.43%
2039	4.00%	8.78%	10.05%	14.83%	4.00%	8.78%
2040	4.00%	9.13%	10.05%	15.18%	4.00%	9.13%

Table 9.28: PRSI rate by Class reflecting Policy Option 2 – multi-year recession, conflict in Ukraine continues and lower long term growth scenario

As Class S does not increase by as much as Policy Option 1 throughout the period, there is an overall increase required of 5.13 percentage points on Class A employee contributions by 2040, compared to 4.89 percentage points in Policy Option 1. The required PRSI rate at an individual level for Class S is much lower than was observed in Policy Option 1. There is an overall increase of 5.13 percentage points on Class S employee contributions by 2040 required to offset the then shortfall (same as Class A by design), compared to 7.92 percentage points in Policy Option 1.

Figures reflecting Policy Option 2(a) – multi-year recession, conflict in Ukraine continues, lower long term growth scenario

Policy Option 2(a): As per Policy Option 2 but with a lifting of the PRSI age exemption limit from 66 to 70	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Class A – Employer and employees	1.41 percentage point increase by 2030; 3.35 percentage point increase by 2040

Table 9.29: Headline impacts on PRSI of Policy Option 2(a) – multi-year recession, conflict in Ukraine continues and lower long term growth scenario

The impact of the lifting of the age exemption limit from age 66 to age 70 and the larger PRSI base (which includes those in the 66 – 69 year old age range) reduces the required incremental PRSI rate increases projected to eliminate shortfalls.

Impact on PRSI Class of "Policy Option 2(a)" – As per Policy Option 2 and a lifting of the age exemption limit						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 2a & very adverse scenario	Base Case	Policy Option 2a & very adverse scenario	Base Case	Policy Option 2a & very adverse scenario
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.20%	10.05%	10.25%	4.00%	4.20%
2025	4.00%	4.40%	10.05%	10.45%	4.00%	4.40%
2026	4.00%	4.60%	10.05%	10.65%	4.00%	4.60%
2027	4.00%	4.81%	10.05%	10.86%	4.00%	4.81%
2028	4.00%	5.01%	10.05%	11.06%	4.00%	5.01%
2029	4.00%	5.21%	10.05%	11.26%	4.00%	5.21%
2030	4.00%	5.41%	10.05%	11.46%	4.00%	5.41%
2031	4.00%	5.75%	10.05%	11.80%	4.00%	5.75%
2032	4.00%	6.08%	10.05%	12.13%	4.00%	6.08%
2033	4.00%	6.42%	10.05%	12.47%	4.00%	6.42%
2034	4.00%	6.75%	10.05%	12.80%	4.00%	6.75%
2035	4.00%	7.09%	10.05%	13.14%	4.00%	7.09%
2036	4.00%	7.42%	10.05%	13.47%	4.00%	7.42%
2037	4.00%	7.76%	10.05%	13.81%	4.00%	7.76%
2038	4.00%	8.09%	10.05%	14.14%	4.00%	8.09%
2039	4.00%	8.43%	10.05%	14.48%	4.00%	8.43%
2040	4.00%	8.77%	10.05%	14.82%	4.00%	8.77%

Table 9.30: PRSI rate by Class reflecting Policy Option 2(a) – multi-year recession, conflict in Ukraine continues and lower long term growth scenario

Figures reflecting Policy Option 3 – multi-year recession, conflict in Ukraine continues, lower long term growth scenario

Policy Option 3	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase from 4% to Class A employer rate by 2040
Class A – Employer and employees	1.38 percentage point increase by 2030; 3.27 percentage point increase by 2040

Table 9.31: Headline impacts on PRSI of Policy Option 3 – multi-year recession, conflict in Ukraine continues and lower long term growth scenario

Policy Option 3 is similar to Policy Option 1 other than the Class S rate increases more steeply such that it is projected to reach 8.41% by 2030 and 14.70% by 2040 as compared with 7.26% by 2030 and 11.92% by 2040 under Policy Option 1. The corollary is that Class A rates for employees and employers are lower under Policy Option 3 than Policy Option 1. For example, the Class A employee rate will increase from 4.00% to 8.65% by 2040 under Policy Option 3 whereas it will increase to 8.89% by 2040 under Policy Option 1.

Impact on PRSI Class of Policy Option 3						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 3 & very adverse scenario	Base Case	Policy Option 3 & very adverse scenario	Base Case	Policy Option 3 & very adverse scenario
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.20%	10.05%	10.25%	4.00%	4.63%
2025	4.00%	4.40%	10.05%	10.45%	4.00%	5.26%
2026	4.00%	4.59%	10.05%	10.64%	4.00%	5.89%
2027	4.00%	4.79%	10.05%	10.84%	4.00%	6.52%
2028	4.00%	4.99%	10.05%	11.04%	4.00%	7.15%
2029	4.00%	5.19%	10.05%	11.24%	4.00%	7.78%
2030	4.00%	5.38%	10.05%	11.43%	4.00%	8.41%
2031	4.00%	5.71%	10.05%	11.76%	4.00%	9.04%
2032	4.00%	6.04%	10.05%	12.09%	4.00%	9.67%
2033	4.00%	6.36%	10.05%	12.41%	4.00%	10.29%
2034	4.00%	6.69%	10.05%	12.74%	4.00%	10.92%
2035	4.00%	7.02%	10.05%	13.07%	4.00%	11.55%
2036	4.00%	7.34%	10.05%	13.39%	4.00%	12.18%
2037	4.00%	7.67%	10.05%	13.72%	4.00%	12.81%
2038	4.00%	8.00%	10.05%	14.05%	4.00%	13.44%
2039	4.00%	8.32%	10.05%	14.37%	4.00%	14.07%
2040	4.00%	8.65%	10.05%	14.70%	4.00%	14.70%

Table 9.32: PRSI rate by Class reflecting Policy Opton 3 – multi-year recession, conflict in Ukraine continues and lower long term growth scenario

9.6.9 Shocks against base case and additional shocks against the base case plus agreed changes

In sections 9.6.1 to 9.6.8 we examined the impact of the various shocks against the base case i.e. the existing legislative basis. In Appendix 8, we analyse the impact of these shocks against the alternative base case i.e. the existing legislative basis and reflecting recently agreed changes as announced by the Minister for Social Protection in September 2022. The detail of the announced changes is also reflected in Appendix 8.

9.6.10 Summarised impact of shocks on the Fund

In the tables that follow we have summarised the potential impact of shocks on the Fund reflecting a shock against (i) the “base case” i.e. existing legislative basis and (ii) the base case incorporating recently announced changes by the Minister. The “accumulated deficits” shown in Table 9.33 is the summation of the opening surplus plus annual surplus / shortfalls each year. It is equivalent to the projected surplus by year end 2022 of €2.7 billion plus the net present value of the future shortfalls at a 0% real discount rate. Interest on the Fund is implicitly assumed to accrue in line with the inflation assumption i.e. at a 0% “real” interest rate.

		Option		
		(a)	(b)	(c)
		No change/As-is	Agreed Changes & smoothed earnings indexation	Agreed Changes & smoothed earnings approach plus "full projection period" PRSI Rate Increases
Macro-Economic Scenarios	Base Case	(498.5)	(475.5)	0.0
	Base Case plus Ukraine Shock	(536.8)	(513.8)	(48.9)
	Base Case plus multi-year Recession	(526.7)	(503.9)	(29.0)
	Base Case plus Ukraine and Multi-Year Recession	(566.1)	(543.3)	(79.0)
	Base Case plus Ukraine and Multi-Year Recession and lower long term growth	(1,015.7)	(993.0)	(689.6)

Table 9.33: Accumulated deficits (€ billions) at the end of the projection period (2076); equivalent to NPV of opening surplus and future surplus / shortfalls at a 0% "real" discount rate

As can be seen from Table 9.33, the accumulated deficit under the base case is €498.5 billion which allows for the projected surplus of €2.7 billion at the end of 2022 plus the summation of the projected annual surpluses / shortfalls over the projection period. Moving down the table and as the severity of the shocks increase the accumulated deficits increase, materially so in the adverse scenario.

The figures in column (a) illustrate the impact on the accumulated deficit of a variety of shock scenarios as compared with base case. Column (b) represents the revised figures reflecting the "agreed changes" announced by the Minister in September 2022 (see Appendix 8), plus the addition of the "smoothed earnings" approach to indexation. The "smoothed earnings" approach to indexation is anticipated to result in SPC increasing from its current 32% of average earnings (excluding irregular earnings and overtime) level to 34% by 2024 and remain at the higher level throughout the projection period. The slight difference in overall accumulated deficits between columns (a) and (b) arises due to the lower projected SPC expenditure in the later years of the projection when the phasing out the "yearly average" underpin has an impact.

The figures in column (c) reflect expenditure as per column (b) but reflecting the higher PRSI rates as calculated under the "full projection period" scenario. The PRSI rates under the "full projection period" scenario involve a material increase from current levels. For a Class A employee the PRSI rate increase required is from 4% to 4.54% by 2030, 5.32% by 2040, 6.09% by 2050 and 8.11% by 2076.

		Option		
		(a)	(b)	(c)
		No change/As-is	Agreed Changes & smoothed earnings indexation	Agreed Changes & smoothed earnings approach plus "full projection period" PRSI Rate Increases
Macro-Economic Scenarios	Base Case	2043	2032	2077
	Base Case plus Ukraine Shock	2041	2031	2042
	Base Case plus multi-year Recession	2024	2023	2023
	Base Case plus Ukraine and Multi-Year Recession	2024	2023	2023
	Base Case plus Ukraine and Multi-Year Recession and lower long term growth	2024	2023	2023

Table 9.34: First year in which the Fund enters deficit

As observed in Chapter 7, the first year the Fund is projected to enter deficit in the base case scenario is 2043. This would be accelerated to 2032 on implementation of the smoothed earnings approach to indexation coupled with the various agreed changes approach coupled with the changes announced by the Minister in September 2022. By design the first year the Fund is projected to enter deficit under the "full projection period" scenario is 2077 i.e. the year after the end of the projection period.

The impact of the shocks in terms of acceleration of the year in which the Fund enters deficit can be seen in Table 9.34. The short term multi-year recessionary shock will push the Fund into deficit by 2023 under any of the options. However the Fund is projected to recover more quickly in the "agreed changes plus PRSI rate increases" scenarios and for example in the multi-year recessionary scenario the Fund is projected to return to surplus before re-entering deficit in 2053.

9.6.11 Ongoing Fund exposure to shocks

In the past number of years there have been shocks due to the financial crisis of 2008, the Covid-19 pandemic in 2020-2021 and the conflict in the Ukraine in 2022. It is likely that the Fund will continue to experience shocks into the future.

10 Policy Impacts

This chapter addresses a variety of different proposed policy measures.

The first section addresses proposed changes to PRSI and benefit packages to address fiscal sustainability as requested by the Department having reflected on the Pensions Commission report and recommendations and the debate arising post publication.

The second section addresses:

— a variety of different indexation approaches and impact on expenditure and shortfalls as compared with the base case

— costings associated with extending additional benefits to Class S

10.1 Pensions Commission Package 1 modified and updated

The Department requested us to provide figures reflecting the Report of the Commission on Pensions published in Autumn 2021 updated for the position at this Review.

The projections broadly reflected an update of the Pensions Commission's Package 1 figures to allow for the most up to date data at this Review, coupled with SPC expenditure reflecting the "better of" formula for the calculations being tapered off over 10 years commencing in 2024 described further in Box 10.1.

In addition to the phase out of the "better of" formula the SPC is assumed to increase in line with a smoothed earnings approach as described in Appendix 7 to this Review. The impact of the latter is discussed at 10.3.4. For each policy option analysed the indexation on SPC payments is also assumed to apply to IQA payments and WPC payments, which are linked to the same maximum rate, and this effect has been captured in the above projections.

The calculations produced under each of the policy options reflect PRSI increases across Class A and Class S required to meet the assessed actuarial shortfalls by 2040. The Class S increases are assumed to commence from 2024+. Class A increases commence from 2031+.

Optionality and flexibility impacts

In terms of SPC expenditure there would be an option to defer uptake of the State pension beyond SPA of 66 to one of age 67 through 70 on actuarially neutral terms. Whilst the

overall values are expected to be the same this option will defer some of the cashflows compared with otherwise.

We have reflected the Pensions Commission recommendation with respect to Carers, discussed further in Box 10.2.

In terms of modelling of SPC cashflows, we assume the deferment option will be actuarially equivalent (in broad terms). We have therefore not explicitly allowed for the impact given the immaterial effect on cash flows as observed at the 2015 Review (tables 12.18 and 12.19 of that report). We are cognisant that there will be some deferment of cash flow due to this option. Working in the opposite direction is the impact of the Carers recommendation which will increase expenditure (estimated to be marginal reflecting analysis performed for the Pensions Commission).

Proposed Policy Options 1, 1(a), 2, 2(a), 3

For each proposed policy options the objective is to remove the actuarial shortfall as assessed at this Review by 2040. The proposed benefit changes are the same in each case and are described above. The only difference between policy option 1, 1(a), 2, 2(a) and 3 is in terms of which population the increased PRSI requirement is to be levied on.

Policy Option 1

As outlined in terms of benefits e.g. the phase out of the yearly average approach from 2024+. The Class S rate is assumed to increase linearly from its current rate starting in 2024 such that it reaches the average of the then Class A employee and employer rate by 2040[35]. The remaining actuarial shortfall (having reflected benefit changes as described earlier) is assumed to be removed by the incremental Class A rate increases which are calculated to be required between 2031 and 2040.

Policy Option 1(a)

Policy Option 1(a) is as per Policy Option 1 but with the Class A rate increases commencing from 2024 to coincide with the commencement of the increases on Class S.

Policy Option 2

As outlined in terms of benefits e.g. the phase out of the yearly average approach from 2024+. Policy Option 2 is as per Policy Option 1 except in this scenario Class S increases

35 The Pensions Commission recommendation with respect to Class S was that the rate would increase from its current level to 10% initially by 2030 and thereafter to the higher Class A employer rate.

in sync with the Class A employee rate commencing in 2024+. The level of incremental PRSI is calculated such that the actuarial shortfall is removed by 2040.

Policy Option 2(a)

Policy Option 2(a) is as per Policy Option 2 but reflecting enhanced yield for Class A and S given the possibility of lifting the PRSI exemption for those aged 66 and older to age 70 and older. This exemption increase will not apply to social welfare payments and all recognised types of pension income.

Policy Option 3

Policy Option 3 is as per Policy Option 1 but the Class S rate is assumed to increase linearly from its current rate starting in 2024 such that it reaches the Class A employer rate by 2040.

Phase out over a 10 year period of "better of" formula for calculating SPC

Better of TCA, YA to be tapered off over 10 years commencing 2024										
2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033+**
100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%

Note: Where YA is better than TCA this is the % of the difference taken in a given year.

Illustrative calculations

Year	Yearly average	TCA	Resulting SPC	Formula used
2023	€253.30	€190	€253.30	100% x (YA - TCA) + TCA
2024	€253.30	€190	€246.97	90% x (YA - TCA) + TCA
2025	€253.30	€190	€240.64	80% x (YA - TCA) + TCA
2026	€253.30	€190	€234.31	70% x (YA - TCA) + TCA
2027	€253.30	€190	€227.98	60% x (YA - TCA) + TCA
2028	€253.30	€190	€221.65	50% x (YA - TCA) + TCA
2029	€253.30	€190	€215.32	40% x (YA - TCA) + TCA
2030	€253.30	€190	€208.99	30% x (YA - TCA) + TCA
2031	€253.30	€190	€202.66	20% x (YA - TCA) + TCA
2032	€253.30	€190	€196.33	10% x (YA - TCA) + TCA
2033	€253.30	€190	€190.00	100% TCA

Box 10.1: Phase out of the "better of formula" on a year by year basis commencing in 2024

10.1.1 Alternative approach reflecting a "full projection period" scenario

An alternative approach reflecting changes to SPC and other optionality and flexibility impacts as described earlier plus a linear progression of PRSI rate increases over the full projection period commencing in 2024. The rates are calculated such that the

accumulated deficit is zero at the end of the projection period taking account of the opening surplus. Rate increases are such that equal percentage point increases are applied to Class S, Class A employee and employer rates.

10.2 Impact on finances and PRSI payable for Policy Options

In this section 10.2 we have illustrated the impact on the Fund finances of a variety of different policy options. To provide context to the options we have firstly reworked table 7.1 reflecting no change to PRSI rates to illustrating the impact of the agreed policy changes described at section 10.1 and includes the impact of moving to the smoothed earnings approach to indexation.

Agreed Policy changes on expenditure, no impact on PRSI						
Year end	**Receipts**	**Expenditure**	**Surplus / (Shortfall)**	**Net as a % of GDP**	**Net as a % of GNI***	**Projected Balance of Fund^^^**
2020	10.6	14.1	(3.5)	(0.9)%	(1.7)%	0.5
2021^	11.8	14.9	(3.1)	(0.7)%	(1.3)%	0.7
2022^^	14.2	11.5	2.7	0.6%	1.1%	2.7
2023	14.8	12.3	2.5	0.5%	1.0%	5.2
2024	15.4	13.2	2.1	0.4%	0.8%	7.3
2025	16.0	13.9	2.0	0.4%	0.8%	9.3
2026	16.4	14.6	1.8	0.3%	0.7%	11.2
2027	16.8	15.4	1.3	0.3%	0.5%	12.5
2028	17.1	15.8	1.3	0.2%	0.5%	13.8
2029	17.5	16.4	1.0	0.2%	0.4%	14.8
2030	17.8	17.1	0.7	0.1%	0.3%	15.6
2031	18.2	17.7	0.4	0.1%	0.1%	16.0
2032	18.5	18.7	(0.1)	(0.0)%	(0.0)%	15.9
2033	18.9	19.1	(0.2)	(0.0)%	(0.1)%	15.7
2034	19.3	19.8	(0.5)	(0.1)%	(0.2)%	15.2
2035	19.6	20.5	(0.9)	(0.1)%	(0.3)%	14.3
2040	21.5	24.6	(3.1)	(0.5)%	(0.9)%	3.3
2045	23.3	29.3	(5.9)	(0.8)%	(1.6)%	(20.9)
2050	25.3	34.3	(9.1)	(1.1)%	(2.2)%	(60.7)
2055	27.4	39.6	(12.2)	(1.4)%	(2.8)%	(114.4)
2060	29.8	44.3	(14.5)	(1.6)%	(3.0)%	(179.8)
2065	32.3	48.6	(16.4)	(1.6)%	(3.2)%	(256.3)
2070	34.8	53.7	(18.9)	(1.7)%	(3.4)%	(346.6)
2076	38.1	61.5	(23.4)	(2.0)%	(3.8)%	(475.5)

Table 10.1: Progression of total income and expenditure (€ billions) and deficit as percentage of GDP and GNI*
^2021 figures are provisional outturn from the Department of Social Protection
^^2022 figures reflect official provisional estimates for expenditure and estimates for PRSI contributions based on Department of Finance fiscal data to end July 2022.
^^^The Projected Balance of Fund figures are in 2022 real price terms. In performing the projection we have implicitly assumed that any returns earned will be broadly in line with the assumed inflation rate in the base case.

Comparing tables 10.1 and 7.1 it can be seen that expenditure under the agreed changes incorporating the smoothed earnings approach is higher than under the base case for years out to 2041. The higher expenditure in these years arises due to the impact of indexation under the smoothed earnings approach increasing SPC to 34% of average earnings (excluding irregular and overtime) where SPC is assumed to remain at 32% of average earnings (excluding irregular and overtime) under the base case. For years 2042 and after the projected expenditure under the agreed changes approach is less than under the base case expenditure reflecting the impact of the phase out of the "better of" approach.

The change in formula for calculating SPC rates (to slowly phase out the "better of" method) has a relatively small impact in the early years of the projection period as the scheme would not be fully phased out to new claimants until 2033. In any event most of the expenditure on SPC relates to the existing claimants who are unaffected by the proposed changes.

Under the agreed benefit policy changes scenario above, the equalised contribution rate where there is no additional subvention to fund SIF expenditure over the projection period is 134%. In other words, over the entire projection period, an increase of 34% in PRSI rates or significant reductions in expenditure or substantial Exchequer subventions (or a combination of approaches) will be required to balance income and expenditure. The 134% compares with the 136% calculated for the purposes of Table 7.3 for the base case.

Impacts on PRSI for Class S and Class A of Policy Option 1

Package 1 modified - PRSI rate increases coupled with better of SPC formula phase out; "Policy Option 1"	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase from 4% to average of Class A employee and employer rate by 2040
Employer and employees each (Class A)	No increase by 2030; 0.75 percentage point increase by 2040

Table 10.2: Headline impacts on PRSI by class and employer / employee of Policy Option 1

Impact of Pensions Commission modified package 1 "Policy Option 1"								
Base case – existing legislative basis					**Policy Option 1**			
Year	**Receipts**	**Expenditure**	**Net**[36]	**Projected Fund Balance**	**Receipts**	**Expenditure**	**Net**	**Projected Fund Balance**
2020	10.6	14.1	(3.5)	0.5	10.6	14.1	(3.5)	0.5
2021	11.8	14.9	(3.1)	0.0	11.8	14.9	(3.1)	0.0
2022	14.2	11.5	2.7	2.7	14.2	11.5	2.7	2.7

36 As mentioned in chapter 7, the surplus / shortfall amounts in base case may differ to the shown differences in receipts and expenditure due to rounding.

Impact of Pensions Commission modified package 1 "Policy Option 1"								
2023	14.8	12.0	2.8	5.4	14.8	12.3	2.5	5.2
2024	15.4	12.7	2.7	8.1	15.4	13.2	2.2	7.3
2025	16.0	13.3	2.6	10.8	16.1	13.9	2.1	9.5
2026	16.4	13.9	2.4	13.2	16.5	14.6	1.9	11.4
2027	16.8	14.8	2.0	15.2	16.9	15.4	1.5	12.9
2028	17.1	15.2	1.9	17.1	17.3	15.8	1.5	14.5
2029	17.5	15.8	1.6	18.8	17.7	16.4	1.3	15.7
2030	17.8	16.5	1.3	20.1	18.2	17.1	1.1	16.8
2035	19.6	20.1	(0.5)	21.4	21.2	20.5	0.7	20.9
2040	21.5	24.5	(3.0)	11.4	24.6	24.6	0.0	22.1
2045	23.3	29.5	(6.1)	(13.2)	26.7	29.3	(2.6)	14.2
2050	25.3	34.9	(9.6)	(55.1)	28.9	34.3	(5.4)	(8.0)
2055	27.4	40.4	(13.0)	(112.4)	31.3	39.6	(8.3)	(42.6)
2060	29.8	45.3	(15.6)	(182.5)	34.0	44.3	(10.2)	(87.2)
2065	32.3	49.8	(17.5)	(264.6)	36.9	48.6	(11.7)	(141.3)
2070	34.8	55.0	(20.2)	(361.1)	39.8	53.7	(13.9)	(207.2)
2076	38.1	63.0	(24.9)	(498.5)	43.6	61.5	(17.9)	(304.4)

Table 10.3: Income and expenditure, Projected Fund Balance as per base case and in Policy Option 1 projected to year 2076.

Policy Option 1 is designed to eliminate the shortfall by 2040 reflecting a combination of reduced expenditure and calculated PRSI increases.

Under Policy Option 1, there is an increase in expenditure of €0.6 billion in 2030 and €0.1 billion in 2040 compared to the base case due to the change in basis for calculating SPC indexation i.e. the smoothed earnings approach coupled with the phase out of the "better of" approach. Overall, there is a requirement for an increase in receipts as projected under the base case of €3.1 billion to offset the shortfall in 2040 reflecting revised expenditure.

Impacts on PRSI for Class S and Class A of Policy Option 1

In all scenarios, the headline Class A employer rate is assumed to increase in line with the Class A employee rate, that is every 1 percentage point increase in the employee's contribution rate also results in a 1 percentage point increase in the employer's contribution rate. The increases between 2031 and 2040 are assumed to be phased in linearly over the period.

Impact by PRSI Class of Pensions Commission modified package 1 " Policy Option 1"						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 1	Base Case	Policy Option 1	Base Case	Policy Option 1
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.00%	10.05%	10.05%	4.00%	4.22%
2025	4.00%	4.00%	10.05%	10.05%	4.00%	4.44%
2026	4.00%	4.00%	10.05%	10.05%	4.00%	4.67%
2027	4.00%	4.00%	10.05%	10.05%	4.00%	4.89%
2028	4.00%	4.00%	10.05%	10.05%	4.00%	5.11%
2029	4.00%	4.00%	10.05%	10.05%	4.00%	5.33%
2030	4.00%	4.00%	10.05%	10.05%	4.00%	5.56%
2031	4.00%	4.08%	10.05%	10.13%	4.00%	5.78%
2032	4.00%	4.15%	10.05%	10.20%	4.00%	6.00%
2033	4.00%	4.23%	10.05%	10.28%	4.00%	6.22%
2034	4.00%	4.30%	10.05%	10.35%	4.00%	6.44%
2035	4.00%	4.38%	10.05%	10.43%	4.00%	6.67%
2036	4.00%	4.45%	10.05%	10.50%	4.00%	6.89%
2037	4.00%	4.53%	10.05%	10.58%	4.00%	7.11%
2038	4.00%	4.60%	10.05%	10.65%	4.00%	7.33%
2039	4.00%	4.68%	10.05%	10.73%	4.00%	7.56%
2040	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%
2050	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%
2060	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%
2070	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%
2076	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%

Table 10.4: PRSI rate by Class required to eliminate the projected shortfall in 2040 reflecting Policy Option 1

Although the headline rates for employer and employees increase by the same amount, there is a slight difference in effective rate due to the lower income entry level for the payment of employer PRSI and the existence of a PRSI credit for low-income individuals.

In Policy Option 1 the Class S rate increases by 1.56 percentage points by 2030, while no increase is levied on Class A over the same period. Under Policy Options 2 and 2(a) the Class S rate is assumed to increase in line with the Class A employee rate.

Figures reflecting Policy Option 1(a)

"Policy Option 1(a)": As per Policy Option 1 but with both Class A and S increases commencing in 2024	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase from 4% to average of Class A employee and employer rate by 2040
Employer and employees each (Class A)	0.15 percentage point increase by 2030; 0.60 percentage point increase by 2040

Table 10.5: Headline impacts on PRSI by class and employer / employee of Policy Option 1(a)

Impact on PRSI Class of "Policy Option 1(a)" – Class A and S increases commencing in 2024						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 1a	Base Case	Policy Option 1a	Base Case	Policy Option 1a
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.02%	10.05%	10.07%	4.00%	4.22%
2025	4.00%	4.04%	10.05%	10.09%	4.00%	4.44%
2026	4.00%	4.06%	10.05%	10.11%	4.00%	4.67%
2027	4.00%	4.09%	10.05%	10.14%	4.00%	4.89%
2028	4.00%	4.11%	10.05%	10.16%	4.00%	5.11%
2029	4.00%	4.13%	10.05%	10.18%	4.00%	5.33%
2030	4.00%	4.15%	10.05%	10.20%	4.00%	5.56%
2031	4.00%	4.21%	10.05%	10.26%	4.00%	5.78%
2032	4.00%	4.27%	10.05%	10.32%	4.00%	6.00%
2033	4.00%	4.33%	10.05%	10.38%	4.00%	6.22%
2034	4.00%	4.39%	10.05%	10.44%	4.00%	6.44%
2035	4.00%	4.45%	10.05%	10.50%	4.00%	6.67%
2036	4.00%	4.51%	10.05%	10.56%	4.00%	6.89%
2037	4.00%	4.57%	10.05%	10.62%	4.00%	7.11%
2038	4.00%	4.63%	10.05%	10.68%	4.00%	7.33%
2039	4.00%	4.69%	10.05%	10.74%	4.00%	7.56%
2040	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%
2050	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%
2060	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%
2070	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%
2076	4.00%	4.75%	10.05%	10.80%	4.00%	7.78%

Table 10.6: PRSI rate by Class required to eliminate the projected shortfall in 2040 reflecting Policy Option 1(a)

The increase in the Class A rate commences earlier in Policy Option 1(a) as compared with Policy Option 1 – i.e. rate increases commence in 2024 rather than in 2031. Smaller

incremental increases are required but over a longer period – a 0.15 percentage point increase by 2030 followed by a 0.60 percentage point increase by 2040. The incremental increase in Class S to 2040 is unchanged from that under Policy Option 1.

Figures reflecting Policy Option 2

Policy Option 2: PRSI rate increases (Class S in sync with Class A employee rate)	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Employer and employees each (Class A)	No increase by 2030; 0.99 percentage point increase by 2040

Table 10.7: Headline impacts on PRSI by class and employer / employee of Policy Option 2

Impact on PRSI Class of "Policy Option 2" – Class S increases in line with Class A employee rate						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 2	Base Case	Policy Option 2	Base Case	Policy Option 2
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2025	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2030	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2031	4.00%	4.10%	10.05%	10.15%	4.00%	4.10%
2032	4.00%	4.20%	10.05%	10.25%	4.00%	4.20%
2033	4.00%	4.30%	10.05%	10.35%	4.00%	4.30%
2034	4.00%	4.40%	10.05%	10.45%	4.00%	4.40%
2035	4.00%	4.50%	10.05%	10.55%	4.00%	4.50%
2036	4.00%	4.60%	10.05%	10.65%	4.00%	4.60%
2037	4.00%	4.70%	10.05%	10.75%	4.00%	4.70%
2038	4.00%	4.79%	10.05%	10.84%	4.00%	4.79%
2039	4.00%	4.89%	10.05%	10.94%	4.00%	4.89%
2040	4.00%	4.99%	10.05%	11.04%	4.00%	4.99%
2050	4.00%	4.99%	10.05%	11.04%	4.00%	4.99%
2060	4.00%	4.99%	10.05%	11.04%	4.00%	4.99%
2070	4.00%	4.99%	10.05%	11.04%	4.00%	4.99%
2076	4.00%	4.99%	10.05%	11.04%	4.00%	4.99%

Table 10.8: PRSI rate by Class required to eliminate the projected shortfall in 2040 reflecting Policy Option 2

As Class S does not increase by as much as Policy Option 1 throughout the period, there is an overall increase required of 0.99 percentage points on Class A employee contributions by 2040, compared to 0.75 percentage points in Policy Option 1. The required PRSI rate at an individual level for Class S is much lower than was observed in Policy Option 1. There is an overall increase of 0.99 percentage points on Class S

employee contributions by 2040 required to offset the then shortfall (same as Class A by design), compared to 3.78 percentage points in Policy Option 1.

Figures reflecting Policy Option 2(a)

Policy Option 2(a): As per Policy Option 2 but with a lifting of the PRSI age exemption limit from 66 to 70	
Main Benefit considerations for SPC	SPC increases in line with the "smoothed earnings" approach to indexation Phase out of "yearly average" approach for calculating SPC from 2024+
Self-employed (Class S)	Increase in line with Class A Employee contribution rate
Employer and employees each (Class A)	No increase by 2030; 0.75 percentage point increase by 2040

Table 10.9: Headline impacts on PRSI by class and employer / employee of Policy Option 2(a)

The impact of the lifting of the age exemption limit from age 66 to age 70 and the larger PRSI base (which includes those in the 66 – 69 year old age range) reduces the required incremental PRSI rate increases projected to eliminate shortfalls.

Impact on PRSI Class of "Policy Option 2(a)" – As per Policy Option 2 and a lifting of the age exemption limit						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 2a	Base Case	Policy Option 2a	Base Case	Policy Option 2a
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2025	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2030	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2031	4.00%	4.07%	10.05%	10.12%	4.00%	4.07%
2032	4.00%	4.15%	10.05%	10.20%	4.00%	4.15%
2033	4.00%	4.22%	10.05%	10.27%	4.00%	4.22%
2034	4.00%	4.30%	10.05%	10.35%	4.00%	4.30%
2035	4.00%	4.37%	10.05%	10.42%	4.00%	4.37%
2036	4.00%	4.45%	10.05%	10.50%	4.00%	4.45%
2037	4.00%	4.52%	10.05%	10.57%	4.00%	4.52%
2038	4.00%	4.60%	10.05%	10.65%	4.00%	4.60%
2039	4.00%	4.67%	10.05%	10.72%	4.00%	4.67%
2040	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%
2045	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%
2050	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%
2055	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%
2060	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%
2065	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%
2070	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%
2076	4.00%	4.75%	10.05%	10.80%	4.00%	4.75%

Table 10.10: PRSI rate by Class required to eliminate the projected shortfall in 2040 reflecting Policy Option 2(a)

Figures reflecting Policy Option 3

Impacts on PRSI for Class S and Class A of Policy Option 3

Policy Option 3 - as Policy Option 1 but with Class S rate increasing to Class A employer rate by 2040	
Main Benefit considerations for SPC	As Policy Option 1
Self-employed (Class S)	Increase from 4% to Class A employer rate by 2040
Employer and employees each (Class A)	No increase by 2030; 0.51 percentage point increase by 2040

Table 10.11: Headline impacts on PRSI by class and employer / employee of Policy Option 3

Policy Option 3 is per Policy Option 1 but Class S rates increase from 4% to 6.70% by 2030 and to 10.56% by 2040 as compared with 5.56% by 2030 and 7.78% by 2040 under Policy Option 1. However the Class A employee rate increases from 4% to 4.51% by 2040 under Policy Option 3 whereas the equivalent increase under Policy Option 1 was 4% to 4.75%.

Impact by PRSI Class of Policy Option 3						
	Class A employee		Class A employer		Class S	
Year	Base Case	Policy Option 3	Base Case	Policy Option 3	Base Case	Policy Option 3
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.00%	10.05%	10.05%	4.00%	4.39%
2025	4.00%	4.00%	10.05%	10.05%	4.00%	4.77%
2026	4.00%	4.00%	10.05%	10.05%	4.00%	5.16%
2027	4.00%	4.00%	10.05%	10.05%	4.00%	5.54%
2028	4.00%	4.00%	10.05%	10.05%	4.00%	5.93%
2029	4.00%	4.00%	10.05%	10.05%	4.00%	6.32%
2030	4.00%	4.00%	10.05%	10.05%	4.00%	6.70%
2031	4.00%	4.05%	10.05%	10.10%	4.00%	7.09%
2032	4.00%	4.10%	10.05%	10.15%	4.00%	7.47%
2033	4.00%	4.15%	10.05%	10.20%	4.00%	7.86%
2034	4.00%	4.21%	10.05%	10.26%	4.00%	8.25%
2035	4.00%	4.26%	10.05%	10.31%	4.00%	8.63%
2036	4.00%	4.31%	10.05%	10.36%	4.00%	9.02%
2037	4.00%	4.36%	10.05%	10.41%	4.00%	9.40%
2038	4.00%	4.41%	10.05%	10.46%	4.00%	9.79%
2039	4.00%	4.46%	10.05%	10.51%	4.00%	10.18%
2040	4.00%	4.51%	10.05%	10.56%	4.00%	10.56%
2060	4.00%	4.51%	10.05%	10.56%	4.00%	10.56%
2076	4.00%	4.51%	10.05%	10.56%	4.00%	10.56%

Table 10.12: PRSI rate by Class required to eliminate the projected shortfall in 2040 reflecting Policy Option 3

Figures reflecting "Full projection period" scenario

Impacts on PRSI for Class S and Class A of "Full projection period" scenario

Full projection period scenario	
Main Benefit considerations for SPC	As per Policy Option 1
Self-employed (Class S)	Class S in sync with Class A employee rate
Employer and employees each (Class A)	A linear 0.0775 percentage point increase per annum

Table 10.13: Headline impacts on PRSI by class and employer / employee of "Full projection period" scenario

Under the full projection period scenario where no allowance was made for the opening surplus then a linear 0.0798 percentage point increase per annum would be required which compares with the 0.0775 percentage point increase per annum in Table 10.13.

Impact of "Full Projection Period" scenario								
Base case – existing legislative basis					Full projection period scenario			
Year	Receipts	Expenditure	Net[37]	Projected Fund Balance	Receipts	Expenditure	Net	Projected Fund Balance
2020	10.6	14.1	(3.5)	0.5	10.6	14.1	(3.5)	0.5
2021	11.8	14.9	(3.1)	0.0	11.8	14.9	(3.1)	0.0
2022	14.2	11.5	2.7	2.7	14.2	11.5	2.7	2.7
2023	14.8	12.0	2.8	5.4	14.8	12.3	2.5	5.2
2024	15.4	12.7	2.7	8.1	15.6	13.2	2.3	7.5
2025	16.0	13.3	2.6	10.8	16.3	13.9	2.4	9.9
2026	16.4	13.9	2.4	13.2	16.9	14.6	2.4	12.2
2027	16.8	14.8	2.0	15.2	17.5	15.4	2.1	14.3
2028	17.1	15.2	1.9	17.1	18.1	15.8	2.3	16.6
2029	17.5	15.8	1.6	18.8	18.6	16.4	2.2	18.8
2030	17.8	16.5	1.3	20.1	19.2	17.1	2.1	20.9
2035	19.6	20.1	(0.5)	21.4	22.3	20.5	1.8	30.4
2040	21.5	24.5	(3.0)	11.4	25.6	24.6	1.0	36.8
2050	25.3	34.9	(9.6)	(55.1)	32.9	34.3	(1.4)	32.7
2060	29.8	45.3	(15.6)	(182.5)	42.1	44.3	(2.2)	15.0
2070	34.8	55.0	(20.2)	(361.1)	53.2	53.7	(0.6)	3.8
2076	38.1	63.0	(24.9)	(498.5)	60.8	61.5	(0.7)	Nil

Table 10.14: Income and expenditure, Projected Fund Balance as per base case and in "Full Projection period" scenario projected to year 2076

37 As mentioned in chapter 7, the surplus / shortfall amounts in base case may differ to the shown differences in receipts and expenditure due to rounding.

Impact by PRSI Class of "Full projection period" scenario						
	Class A employee		Class A employer		Class S	
Year	Base Case	Full projection period	Base Case	Full projection period	Base Case	Full projection period
2020	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2021	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2022	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2023	4.00%	4.00%	10.05%	10.05%	4.00%	4.00%
2024	4.00%	4.08%	10.05%	10.13%	4.00%	4.08%
2025	4.00%	4.16%	10.05%	10.21%	4.00%	4.16%
2026	4.00%	4.23%	10.05%	10.28%	4.00%	4.23%
2027	4.00%	4.31%	10.05%	10.36%	4.00%	4.31%
2028	4.00%	4.39%	10.05%	10.44%	4.00%	4.39%
2029	4.00%	4.47%	10.05%	10.52%	4.00%	4.47%
2030	4.00%	4.54%	10.05%	10.59%	4.00%	4.54%
2031	4.00%	4.62%	10.05%	10.67%	4.00%	4.62%
2032	4.00%	4.70%	10.05%	10.75%	4.00%	4.70%
2033	4.00%	4.78%	10.05%	10.83%	4.00%	4.78%
2034	4.00%	4.85%	10.05%	10.90%	4.00%	4.85%
2035	4.00%	4.93%	10.05%	10.98%	4.00%	4.93%
2036	4.00%	5.01%	10.05%	11.06%	4.00%	5.01%
2037	4.00%	5.09%	10.05%	11.14%	4.00%	5.09%
2038	4.00%	5.16%	10.05%	11.21%	4.00%	5.16%
2039	4.00%	5.24%	10.05%	11.29%	4.00%	5.24%
2040	4.00%	5.32%	10.05%	11.37%	4.00%	5.32%
2045	4.00%	5.71%	10.05%	11.76%	4.00%	5.71%
2050	4.00%	6.09%	10.05%	12.14%	4.00%	6.09%
2055	4.00%	6.48%	10.05%	12.53%	4.00%	6.48%
2060	4.00%	6.87%	10.05%	12.92%	4.00%	6.87%
2065	4.00%	7.26%	10.05%	13.31%	4.00%	7.26%
2070	4.00%	7.64%	10.05%	13.69%	4.00%	7.64%
2076	4.00%	8.11%	10.05%	14.16%	4.00%	8.11%

Table 10.15: PRSI rate by Class reflecting the "Full projection period" scenario

PRSI rate increases reflecting the "full projection period" scenario are materially higher for Class A employees and employers than Policy Options 1 - 3. For example, the Class A employee rates increase from 4.0% to 4.54% by 2030 and 5.32% by 2040 as compared with no change by 2030 and 4.75% by 2040 under Policy Option 1.

Pensions Commission recommendation with respect to Carers

The recommendations by the Pensions Commission with respect to Carers are as follows:

— The Commission recommends that long-term carers (defined as caring for more than 20 years) should be given access to the State Pension (Contributory) by having retrospective contributions paid for them by the Exchequer when approaching pension age for any gaps in their contribution history arising from caring.

— Contributions would be exclusively for State Pension (Contributory) purposes and would be recognised as paid contributions both for the purposes of qualifying for the State Pension (Contributory) and for the calculating of pension rate entitlement under the Total Contributions Approach.

Analysis performed for the Pensions Commission indicated that costs would arise from the Commission's recommendation in relation to those:

1. Gaining entitlement to the State Pension (reaching the 10 years paid contributions condition)

2. Gaining entitlement to a higher rate of payment beyond the existing 20 year cap on Home Caring periods and credited contributions.

Workings for the Pensions Commission suggested that costs in respect of item 1 would indicatively be of the order of €2.5 million in a full year increasing to €25 million over time as the recipient numbers are projected to increase over the coming decades. The costs involved for item 2 are expected to be circumscribed for the reasons outlined in the Commission's report.

Box 10.2: Pensions Commission recommendation with respect to Carers

As requested by the Department we considered the Pensions Commission's recommendation with respect to Carers as set out at Section 9.8 of the Pensions Commission report. We have not performed further analysis at this Review other than to note the analysis performed by the Pensions Commission and perform similar high level analysis. We observed that the incremental costs as a proportion of overall SPC expenditure are likely to be relatively immaterial for the purpose of long-term SPC expenditure projections.

10 Section 2: Other policy impacts examined

10.3 Multiple Indexation Approach

As per the RFT, to allow for comparison between approaches to indexing benefits, the Review must include projections indexed based on the following:

i) Consumer Price Index and HICP

ii) Real Earnings Growth Index

iii) Index calculated to retain 34% of National Average Earnings at retirement (both including and excluding irregular earnings and overtime).

The Review should include an optimum weighted average approach to indexing benefits.

10.3.1 KPMG Approach to review of indexation approach

As a first step we reviewed the literature relating to State pension indexation.

Differing approaches have been taken over time to increases in the level of State pensions, reflecting budgetary conditions as well as differing views as to whether increases should be linked for instance to inflation or to salary increases. The National Pensions Policy Initiative (May 1998) report recommended that the State pension should be increased from its then level of 28.5% of average industrial earnings to 34% of national average industrial earnings.

This 34% target was reiterated in the National Pensions Review (October 2005).

The National Pensions Framework published in 2010 stated the following "...In order to maintain this aim of preventing poverty for older people, the Government will seek to sustain the value of the State pension at 35 per cent of average weekly earnings and will support this through the PRSI contribution system".

The Roadmap on Pension Reform ("the Roadmap") published in 2018 references indexation in a few places and ultimately recommends the introduction of automatic indexation which the Government believe would bring greater long-term certainty for SPC beneficiaries. Maintaining a constant real value to the State pension would also benefit individuals by allowing for greater transparency in financial planning and improved confidence about the level of any private retirement savings required to supplement the State pension. This would bring Ireland in line with other EU countries who currently operate a system of automatic or semi-automatic increases.

Per the Roadmap "In order to protect pension adequacy into the future the Government intends to examine and develop proposals to; (i) Set a formal benchmark target of 34% of average earnings for SPC payments and; (ii) Institute a process whereby future changes in pension rates of payment are explicitly linked to changes in the consumer price index and average wages."

Similarly, the Roadmap for Social Inclusion 2020-2025 outlined a potential approach (Smoothed Earnings) that could be used. The Roadmap for Social Inclusion also includes the commitments to "Finalise an approach for benchmarking pension payments for Government decision" and "Subject to Government decision, develop and prepare any necessary changes to legislation to give effect to a benchmarking approach."

10.3.2 State pension as a proportion of the current average earnings measure

As a second step we analysed CSO earnings data (with and without irregular earnings and overtime) over the past number of years. We noted as part of the analysis a number of changes over recent years as observed by the Technical Sub-Committee of the Pensions Commission in their Working paper 4 on Benchmarking and Indexation:

- The former measure of Gross Average Industrial Earnings has been superseded by a broader measure of earnings in the economy through the Earnings, Hours and Employment Costs Survey (EHECS). This can be used to obtain average earnings in all NACE sectors B to S (this includes professional and services sectors as well as 'industrial' sectors) and includes both part-time and full-time employees;
- More specifically, the CSO advises that EHECS measure of average earnings (*excluding* irregular earnings and overtime) is the equivalent to the now defunct gross average industrial earnings;
- The maximum personal rate of SPC payment and the 34% earnings benchmark have been similar over the time period available reflecting analysis of the period 2008 – 2020 of the SPC against the above measure of earnings.
- The SPC in isolation does not include the value of cash benefits and allowances specifically the Living Alone Allowance, Fuel Allowance, the Household Benefits Package's Electricity/Gas Allowance and the Telephone Support Allowance. To compare like with like an approximation for the value of these benefits would need to be included.

— Therefore 34% of average earnings *excluding* irregular earnings and overtime would appear to be a reasonable metric / target in terms of indexation for State pension indexation if looking at the SPC in isolation.

Comparing CSO data on average earnings including and excluding irregular earnings and overtime, we observed a circa 9% difference between the two earnings measures – an approximate 6% difference relates to the irregular component and 3% relates to overtime.

Average earnings CSO data for 2020 and 2021				
Year	**Average regular earnings (a)**	**Average irregular earnings (b)**	**Average overtime earnings (c)**	**Average Total earnings (a) + (b) + (c)**
2020	€38.846	€2,503	€1,015	€42,364
2021	€40,569	€2,708	€1,078	€44,355

Table 10.16: CSO data on average earnings (EHECS) for 2020 and 2021; all NACE economic sectors

We observed as part of our work that the State pension is currently estimated to be circa just over 32% of the EHECS measure of average earnings[38] (*excluding* irregular earnings and overtime).

Therefore, expenditure where SPC tracks average earnings *including* irregular earnings and overtime rather than average earnings excluding irregular earnings and overtime will be circa 9% ahead of assessed expenditure in the base case.

10.3.3 Derivation of assumptions for quantifying impact on expenditure / shortfalls for indexation on different measures

The assumption CPI was considered in the base case as set out in Chapter 5. We describe below how HICP and CPI are expected to converge and the same assumption is proposed to be used for both HICP and CPI indexation for the purpose of the long term costings:

— The Consumer Price Index (CPI) is the official measure for inflation in Ireland and is published monthly by the CSO. It is also the most commonly used measure of inflation in Ireland;

38 Note that the earnings figure for a particular year refers to the average of Q1 from that year and the 3 previous quarters. The EHECS measure of average earnings (excluding irregular earnings and overtime) of all NACE economic sectors from Q1 2022 and quarters 2-4 of 2021 is approximately €788 per week. Average earnings per week including irregular and overtime were calculated as €859 being an average from Q1 2022 and Quarters 2-4 of 2021 i.e.(€885.33 + €863.70 + €837.61+ €850.81) / 4). The €859 was divided by 1.09 to remove the irregular and overtime component to give €788 per week. €253.30 per week State pension represents circa 32% of the €788 per week figure.

— The Harmonised Index of Consumer Prices (HICP) is an index of consumer prices that has been harmonised to allow comparisons across Eurozone countries;

— Both indices are calculated from the same basic price data and use the same methodology in compiling and aggregating the indices. HICP differs to CPI in its coverage of goods and services and the treatment of insurance. Some significant differences are the exclusion from HICP of mortgage interest, building materials and local property tax. CPI also differs from HICP in that it includes gross insurance premiums paid by households in contrast to HICP which just includes the service charge for insurance premiums paid by households;

— In the past, Irish CPI has exceeded HICP by approximately 0.12% p.a. This differential does not reflect year-on-year deviations with CPI exceeding HICP by over 2% whilst HICP has exceeded CPI by 2.8% in certain 12- month periods. The HICP and CPI are likely to be highly correlated in future years. Significant inflation/deflation in areas which are not covered by the HICP will cause CPI to rise/fall with respect to the HICP;

— In the year to August 2022 CPI was up 8.7% whereas HICP increased by 9.0% over the same period;

— The two indices had diverged for a number of months in 2022 with the divergence due to some items having different weights in the respective indices. The two indices appear to be converging again in recent months as can be seen from CSO analysis year to August 2022[39].

Real earnings growth

The real earnings growth assumption are set out in Table 5.1 i.e., in line with AWG 2021 with SPU overlay for early years. Real earnings growth rates are assumed at 2.3% / 2.2% / 2.1% in the years 2023 - 2025 and at 1.5% per annum in the long term.

National average earnings growth in real terms could be expected to track real earnings growth at an overall level. The same assumption is proposed to be used for both growth in average earnings including and excluding irregular earnings and overtime, having made the 9% adjustment at the outset.

39 Consumer Price Index August 2022 - CSO - Central Statistics Office

Differences between growth in average earnings and average earnings (including irregular and overtime items)

On the differences between average earnings including and excluding irregular items and overtime:

- The average national earnings including irregular items has increased by an average of 1.2% p.a. over the 12 years from 2008 and 2020. The average increase was 4% p.a. for the 3 years from 2018-2020 so a 3% - 4% annual increase would be expected in the future;
- The average national earnings excluding irregular items has increased by an average of 1.1% p.a. over the same 12 -year period. The average increase was 3.8% p.a. for the 3 years from 2018-2020. A future long-term increase of between 3% and 4% p.a. would be expected. This tallies with the long-term assumption used in our base case of 2% CPI + 1.5% p.a. real = 3.5% nominal p.a. for earnings growth;
- The growth in national Average Earnings including and excluding irregular Items have always been highly correlated, and this is expected to continue into the future.

10.3.4 Quantification of impact of varying indexation

Table 10.16 shows the progression of the Fund's finances where SPC is indexed at a variety of different indexation measures.

Surplus / (Shortfall) as a % of GNI* reflecting varying indexation levels					
Year	(a) Average earnings (base case)	(b) CPI	(c) Smoothed earnings approach	(d) Ave earnings incl irregular & OT	(e) Phase in of (d) over period to 2031
2020	(1.7)%	(1.7)%	(1.7)%	(1.7)%	(1.7)%
2021	(1.3)%	(1.3)%	(1.3)%	(1.3)%	(1.3)%
2022	1.1%	1.1%	1.1%	1.1%	1.1%
2023	1.1%	1.3%	1.1%	0.8%	1.1%
2024	1.1%	1.3%	0.9%	0.6%	0.8%
2025	1.0%	1.4%	0.9%	0.5%	0.7%
2026	0.9%	1.3%	0.7%	0.4%	0.6%
2027	0.7%	1.2%	0.6%	0.2%	0.3%
2028	0.7%	1.3%	0.5%	0.1%	0.3%
2029	0.6%	1.2%	0.4%	0.0%	0.1%
2030	0.5%	1.2%	0.3%	(0.1)%	(0.1)%
2035	(0.1)%	1.0%	(0.3%)	(0.8)%	(0.8)%
2040	(0.9)%	0.8%	(1.1)%	(1.6)%	(1.6)%
2045	(1.6)%	0.7%	(1.9)%	(2.5)%	(2.5)%

Surplus / (Shortfall) as a % of GNI* reflecting varying indexation levels					
2050	(2.4)%	0.6%	(2.7)%	(3.3)%	(3.3)%
2055	(3.0)%	0.7%	(3.3)%	(4.0)%	(4.0)%
2060	(3.3)%	0.9%	(3.6)%	(4.3)%	(4.3)%
2065	(3.4)%	1.2%	(3.7)%	(4.5)%	(4.5)%
2070	(3.6)%	1.5%	(4.0)%	(4.7)%	(4.7)%
2076	(4.1)%	1.7%	(4.4)%	(5.3)%	(5.3)%

Table 10.17 Shortfalls (as % of GNI*) reflecting varying indexation levels.

Table 10.17 shows projected shortfall as a % GNI* under:

— (a) the base case (i.e. State pension increases in line with average earnings growth) and remains at its current level of 32% of average earnings (excluding irregular earnings and overtime);

— (b) CPI indexation (which is assumed to coincide with HICP inflation in the medium-long term);

— (c) smoothed earnings approach whereby the SPC is assumed to increase to 34% of average earnings (excluding irregular earnings and overtime) by 2024 and thereafter remain at that level, keeping pace with long term earnings growth;

— (d) growth in line with average earnings (*including* irregular earnings and overtime) i.e. an assumption that SPC expenditure would be circa 9% higher than the smoothed earnings approach i.e. an assumption that SPC is assumed to increase to 34% of average earnings (*including* irregular and overtime) by 2024 and thereafter remain at that level, keeping pace with long term earnings growth.

The “smoothed earnings” approach to indexation can result in the rate of State pension payment increasing above the 34% earnings benchmark in the short term in years where there is price inflation above earnings growth, as could be expected, for example, in years 2023 – 2025 given short term European Central Bank (“ECB”) projections of Eurozone inflation averaging 5.5% in 2023 and 2.3% in 2024.

However, the proposed design is such that a cap of 37% of average earnings applies and costs associated with the smoothed earnings approach are therefore capped at an expenditure level circa 9% higher (i.e. 37% / 34%) than the long term costs otherwise emerging where the 34% benchmark continues to apply and is tracked.

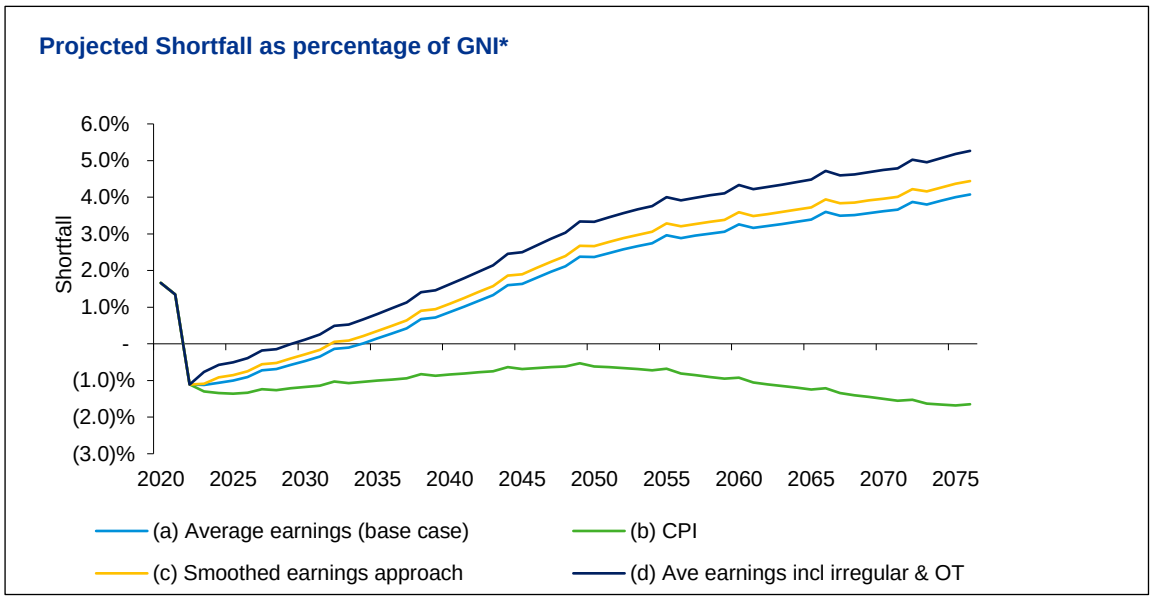

Figure 10.1: Projected (surplus) / shortfall as a % GNI% - varying indexation levels

Under the base case assumption, (the blue line in the chart above), a small shortfall arises by year 2034, rising to 0.9% of GNI* in 2040 and to 4.1% of GNI* by the end of the projection period in 2076. Under the "smoothed earnings" approach, (the orange line in the chart above) slightly higher shortfalls arise reflecting the fact that the SPC is anticipated to increase from 32% to 34% of average earnings excluding irregular and overtime. The shortfall is expected to rise to 1.1% of GNI* in 2040 and to 4.4% of GNI* by the end of the projection period in 2076.

If benefits are projected to increase in line with CPI or HICP measures of price inflation in the long term rather than real earnings growth, the Fund remains in surplus throughout the projection period. Indexing SPC in line with price inflation which is assumed to be less than average earnings growth throughout the period (by circa 1.5% p.a.), would result in an increase in the "at risk of poverty" threshold measure for those over SPA.

A policy of increasing SPC in line with CPI rather than long term earnings growth would have implications for the poverty prevention rationale of the State pension.

In a scenario where the State pension starts off at 34% of average earnings (excluding irregular earnings and overtime) and where price inflation is 1.5% per annum below real earnings growth over the long term, a policy of indexing the SPC in line with the CPI for say 20 years would translate to a SPC representing 25% of average earnings in 20 years' time.

An individual is defined as being "at risk of poverty" if their nominal equivalised disposable income is under the at risk of poverty threshold, i.e. 60% of the median nominal

equivalised disposable income. At-risk-of-poverty is a 'relative' measure, that is, it will move in line with income changes in the wider population.

When looking at the at risk of poverty measures it is useful to consider not just the SPC in isolation but also supplementary income supports such as the Living Alone Allowance and other benefits and services which directly supplement household income and/or reduce household expenditure e.g.the Household Benefits Package.

10.4 Class S benefit extension

The Department requested us to project expenditure (disaggregated annually from 2024 to 2030 and then at 5 yearly intervals) for Class S self-employed contributors to receive each of the benefits for which they currently do not qualify.

Project incremental PRSI contribution rates required to provide each of these benefits to Class S contributors on a revenue neutral basis.

10.4.1 KPMG Approach to review of Class S benefits extension

The benefits to which Class S currently do not qualify are as follows:

- Illness Benefit (circa €615m estimate in 2022 which relates to those with claims of both greater than and less than 2 year duration.[40])
- Carer's Benefit (circa €48.7m estimate in 2022)
- Occupational Injuries Benefit (€76.5m[41] estimate in 2022)
- Health and Safety Benefit (€0.578m estimate in 2022)

Illness Benefit

The main / most material benefit to which Class S is currently not entitled is Illness Benefit. We produced costings at the 2015 Review for extending this benefit to Class S and updated the costings at this Review using a similar approach.

40 Since January 2009, new recipients of Illness Benefit are paid for a maximum of 2 years. Up to then, recipients were entitled to Illness Benefit for as long as they were unfit to work.

41 Occupational Injuries comprises a combination of Disablement Benefit of €65.2m, Injury Benefit of €11.089m and Medical Care of €0.230m

Approach to calculation of incremental Illness Benefit

The approach to costing the extension to Illness Benefit involved taking the following steps:

- We examined the annual numbers in receipt of Illness Benefit including new recipients by age and gender in 2020 and a number of preceding years;
- We took an average of the 2017-2020 rates given the distorting effects on incidence rates in 2020 due to the coronavirus pandemic;
- We identified the populations currently entitled to Illness Benefit and then the subset of individuals with Illness Benefit of duration < 2 years only. Those individuals on benefit of duration > 2 year duration represent a closed and declining population and were removed from the data;
- The break-down of new claims by age and gender in a year expressed as a proportion of the population currently eligible provided an annual new claims incidence rate;
- We applied these incident rates to the population of Class S by age and gender, i.e. the new "exposed to risk of illness";
- This gave us total numbers from Class S likely to qualify in each year (assumed to commence in 2024 for Illness Benefit);
- We projected this into the future by examining the change in the projected Class S population through time and allowing for uprating of the benefit etc.

Identification of populations – those currently and potentially entitled to various benefit types

- We received PRSI data in respect of 2020 which reflected complete records for Class A and near complete data for Class S. The majority of lagged self-assessed contributions came through in December 2021;
- We also received data in respect of 2019 which reflected complete records for both those in Class A and Class S and indeed across all other PRSI Classes. Note the PRSI database was segmented according to those in "primary class A", "primary class S" etc. The definition in each case reflected those with a majority of PRSI in each Class by contributions (i.e. where >26 weeks in Class S this individual is denoted "primary class S". Where an individual has equal numbers of contributions across two Classes (e.g. an individual with 52 weeks Class S and 52 weeks Class A, this individual's primary class would be regarded as "Class A";
- In deriving the costings in each case we used the disaggregated populations of "primary class A" and "primary class S" by age and gender.

Lag in terms of build-up of first "full year" costs on Illness Benefit

Overall, we estimate that the scheme will reach full maturity by year 4 and near full maturity by year 3. Taking into account the typical duration for which individuals claim, we have allowed for 60% of the full year cost / number of recipients which would be expected when the scheme is fully mature. In year 2 we have allowed for 75%, 95% by year 3 and 100% by year 4.

10.4.2 Cost of extending Illness Benefit to Class S

Illness Benefit expenditure (€ millions)			
Year	Total Illness expenditure reflecting those currently entitled only[42]	Total Illness expenditure reflecting Class S in addition	Incremental Illness expenditure
2020	471.7	471.7	-
2021	513.9	513.9	-
2022	506.9	506.9	-
2023	525.5	525.5	-
2024	545.6	589.8	44.2
2025	563.4	620.5	57.1
2026	578.7	652.9	74.3
2027	594.6	674.9	80.3
2028	611.8	694.4	82.6
2029	627.0	711.7	84.7
2030	642.4	729.1	86.8
2035	724.6	822.5	97.9
2040	808.6	917.8	109.2
2045	884.7	1,004.2	119.5
2050	938.7	1,065.5	126.8
2055	1,012.9	1,149.7	136.8
2060	1,109.8	1,259.7	149.9
2065	1,209.0	1,372.2	163.3
2070	1,222.2	1,387.3	165.1
2076	1,339.5	1,520.4	180.9

Table 10.18: Incremental expenditure where Illness Benefit is extended to Class S from 2024

10.4.3 Costs of extending all benefits to which Class S are currently not entitled

The Carer's, Health and Safety and Occupational Injuries Benefit expenditure are relatively immaterial by comparison with Illness Benefit. In estimating the costs of extending Carer's Benefit to Class S, we allowed for the same proportionate increase onto existing projected Carer's Benefit, Health and Safety and Occupational Injuries

[42] This expenditure reflects an approximation for the expenditure in respect of the 'open population' only i.e. those with Illness Benefit Claims of < 2 years duration.

Benefits expenditure as emerged when we costed the impact of extending the Illness Benefit to Class S.

Incremental expenditure (€ millions) across four benefits					
Year	**Illness**	**Carer's**	**Health & Safety**	**OIB**	**Total**
2020	0.0	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0
2024	44.2	7.1	0.1	11.1	62.5
2025	57.1	7.3	0.1	11.5	75.9
2026	74.3	7.5	0.1	11.8	93.6
2027	80.3	7.7	0.1	12.1	100.2
2028	82.6	7.9	0.1	12.4	103.0
2029	84.7	8.0	0.1	12.6	105.5
2030	86.8	8.2	0.1	12.9	108.0
2035	97.9	9.0	0.1	14.2	121.2
2040	109.2	9.9	0.1	15.5	134.7
2045	119.5	10.7	0.1	16.8	147.1
2050	126.8	11.5	0.1	18.2	156.6
2055	136.8	12.5	0.1	19.7	169.2
2060	149.9	13.6	0.2	21.4	185.1
2065	163.3	14.7	0.2	23.2	201.4
2070	165.1	15.9	0.2	25.0	206.2
2076	180.9	17.4	0.2	27.4	226.0

Table 10.19: Incremental expenditure where 4 benefits to which Class S are currently not entitled are extended from 2024

10.4.4 Costing of extending benefits to which Class S are currently not entitled (revenue neutral basis)

The revised contributions from Class S (from a baseline contribution rate of 4%) in respect of the additional benefits on a revenue neutral basis is as follows:

Revised Class S rate (upward from 4%)	
Illness	4.48%
Carers	4.05%
H&S	4.00%
OIB	4.07%
All four benefits	**4.60%**

Table 10.20: Class S PRSI rate revision (from 4%) where various additional benefits are extended to that class.

The calculations assume the benefits are extended with effect from 2024+ and that the changes to Class S rates occur in the same year. The 4.48% calculated in respect of the Illness Benefit extension at this Review compares with a rate of 5% indicated in the 2015 Review (Table 12.26 of the 2015 Report). The difference in assessed rates (i.e. the 4.48%

calculated at the 2020 Review compared with the 5% indicated at the 2015 Review) relates primarily to the refined method at this Review for the calculation of the cost of the Illness Benefit extension. At this Review we removed the costs of the Illness Benefit associated with the closed population of pre 2009 recipients whose benefits were of greater than 2 years' duration reflecting Illness Benefit entitlement at the time.

The costings are similar when looked at over various time horizons given that there is not a material age-related element to any of the benefits (other than a small increase in incidence rates by age associated with Illness Benefit).

Change to Class S contribution - various time horizons				
From 2024+	**5 years**	**10 years**	**20 years**	**to 2076**
Illness	4.41%	4.45%	4.47%	4.48%
Carers	4.05%	4.05%	4.05%	4.05%
H&S	4.00%	4.00%	4.00%	4.00%
OIB	4.07%	4.07%	4.07%	4.07%
Total	**4.53%**	**4.57%**	**4.59%**	**4.60%**

Table 10.21: Change to Class S contributions (where various time horizons considered)

The costings reflect the incremental cost of extending the Class S benefit entitlements to cover the four mentioned benefits. It implicitly assumes 4% is sufficient to cover the benefits to which Class S are already entitled. The value for money analysis in Chapter 11 at Tables 11.10 (a) and 11.10 (b) indicates the level of PRSI which would hypothetically be required for a range of sample contributors (including Class S) to cover (i) the SPC entitlement and (ii) the SPC entitlement plus a number of other working age benefits assumed to be drawn from the Fund.

11.Value for money analysis

This chapter looks at the value for money provided by the Fund on a range of scenarios:

— Value for money provided by the Fund to those paying Class A contributions for late and early entrants into the PRSI system

— Value for money provided by the Fund to those paying Class A by gender

— Impact of credits on value for money

— Impact of any change to the State Pension Age on value for money

— Value for money to the Self-employed contributors

— The annualised contribution rates which, if paid into a hypothetical pension pot and invested to SPA, would be sufficient to replicate benefits broadly equating to the SPC and other major benefit payments (Invalidity Pension, Illness and Jobseeker's Benefits)

11.1 Introduction

This chapter addresses item 4.3.7 of the RFT: The Review must propose "value for money" or "money's worth" indicators for sample/proxy contributors to the Social Insurance Fund. These indicators should provide the value for money for all social insurance benefits, for long-term and short-term benefits, and separately for the State Pension (Contributory). These indicators can be based on the ratio of lifetime benefits to lifetime contributions for the sample cases, and/or through other methods to be specified in the proposal. The sample cases evaluated should highlight differences between various groups of contributors and beneficiaries, specifically based on:

i) Demographics (age group, gender)
ii) PRSI Class
iii) Level of Income
iv) Varying Contribution History

The value for money impact of voluntary contributions, credited contributions and the options for self-employed contributors (part 4.3.8) should also be assessed across the dimensions above.

11.2 Approach taken

As in previous reviews, for each scenario / individual tested we calculated a "value for money index" based on the lifetime benefits to lifetime contributions to calculate a value for money index as follows:

$$Value\ for\ money\ index = \frac{Present\ value\ of\ projected\ benefits}{Present\ value\ of\ contributions\ (Employer's\ and\ Employees')}$$

Where this ratio is greater than 1 this indicates good value for money for the recipient in absolute terms as the projected benefits from the Fund are greater than the projected value of contributions paid into the Fund.

Each of the scenarios examined reflects the contribution rules and weekly rates in force in 2022 and looks at SPC and the other three main benefits paid from the Fund; Invalidity Pension, Illness, and Jobseeker's Benefit. This analysis does not capture the full potential value for money provided by the Fund given that a range of other benefits can also be accessed, and we have not included a valuation for these benefits within the value for money index.

In most cases we calculated the value for money indices on varying earnings levels (from minimum wage up to 4 times' National Average Earnings ("NAE")) as well as on a range of PRSI contribution histories, giving rise to varying average weekly contribution calculations and therefore varying pension entitlements on claiming SPC. To calculate the present value of projected SPC, an annuity-factor reflecting the expected length of time the pension would be payable, was applied to the expected pension amount at SPA. To reflect the cost of Invalidity Pension, Illness, and Jobseeker's Benefits, the average claim rates at each age and typical duration of payment of each benefit was used.

An increase for a "qualified adult" was included in addition to the main life annuity. The "qualified adult" payment is essentially an increase to the main life payment due in respect of a dependant (usually a spouse, civil partner, or cohabitant). The term is explained fully in the glossary. The increase for qualified adults is in line with the rate of qualified adults we observed from the male and female new SPC qualifiers from after September 2012 SPC rate changes[43] and is applied to male contributors only given the negligible number of female recipients with qualified adults.

[43] Of the 144,260 persons in receipt of SPC who qualified on or after 1 September 2012 a total of 23,283 qualified adults are claimed for an average increase of 13.15% of the claimant's pension rate.

We calculated the value for money indices for males and females separately but present average rates with the exception of the series of 11.2 Tables, where we separately examine value for money by gender.

The value for money index for females is higher than for males (all else being equal) due to longer female life expectancy.

However, taking account of the additional value in respect of contributions paid by males, manifested largely through additional IQA payments (made directly to their spouse/partners), means that the value for money is broadly equivalent. (Negligible qualified adult payments are made on female pension payments.)

When other benefits are considered in addition to the SPC such as Invalidity Pension, Illness and Jobseeker's Benefits, females in fact achieve better value for money than males due to their higher propensity to claim these benefits.

Overall the difference in value for money by gender is reduced / is not overly material due to the effects discussed below:

- the inclusion at this Review of a qualified adult's annuity attaching to male recipients;
- the fact that whilst women are projected to continue to live longer than men, the gap between male and female life expectancy is reducing. See Chapter 6 for further detail on life expectancies;
- the inclusion at this Review of a wider array of benefits within the value for money assessment (Jobseeker's and Illness Benefits and Invalidity Pension) which women are more likely to access.

While the value for money index will capture the monetary value of the SPC (and the other main benefit types paid by the Fund including Invalidity Pension, Illness, Jobseeker's) to individuals, there are some non-monetised qualities which will not be captured in our measure such as, for example, the fact that payments are backed by the State. Other qualities which affect value for money include the quality of the governance and efficiency of the administration / communications associated with the benefits.

11.3 Assumptions

The calculation of the present value of contributions and benefits were based on the following assumptions:

- Benefits and Contributions of a male and female with qualified adult as appropriate (in practice male recipients only have non-negligible attaching qualified adult amounts);

— Value for money indices were calculated for an individual joining the work force aged 25 and aged 35 with a varying combination of histories thereafter;
— Value for money indices and calculations in this section reflect the current SPA of 66. The impact of an illustrative change in the SPA from 66 to 68 (which had been legislated for previously) is examined at subsection 11.4.4.

The assumptions that follow below are reflective of those set out in the Society of Actuaries Actuarial Standard of Practice PEN-12 ("ASP PEN-12") v1.7 (effective 1 March 2021): Statements of Reasonable Projection – Occupational Pension Schemes and Trust RACs. The assumptions in ASP PEN-12 coincide with those recommended by the Pensions Authority for the purposes of benefit statement projections effective 1 August 2022[44] and are as follows:

— All benefits were assumed to increase with earnings growth, at a fixed growth rate of 1.5% per annum (1% price inflation and 0.5% "real earnings" growth (pre and post SPA));
— Present values of the various contributions and benefits were calculated assuming a nominal discount rate of 3.0% per annum in the period up to SPA and a nominal 0.5% per annum post-reaching SPA;
— Average Earnings is circa €45,245 (as per CSO seasonally adjusted average earnings 2022)[45];
— The annuities in this section use gender-specific rather than unisex annuities as specified in ASP PEN-12.

The above assumptions differ from the "base case", the results of which are outlined in Chapter 7. For the value for money analysis a real discount rate of 1.5% p.a. is used in the period up to SPA (being 3% net of 1.5% p.a. benefit inflation) but in the period post SPA a real discount rate of -1% p.a. is used as per ASP PEN-12. The mortality assumptions differ between the two. Assumed life expectancy of pension scheme contributors exceeds that of the general population. For example a 65 year old male in 2040 would be expected to live 25.3 years under the assumptions set out in ASP PEN-12 as compared with 20.8 years under the base case.

44 European Union (Occupational Pension Schemes) Regulations 2021 Regulation 34(4) - guidance in relation to Pension Benefit Statement projection assumptions.

45 Earnings and Labour Costs Q1 2022 (Preliminary Estimates) of average weekly earnings (seasonally adjusted) = €870.10.

11.4 Value for money Calculations

11.4.1 SPC for Class A contributors entering the PRSI system aged 25

We examined the value for money index based on combined employer and employee PRSI contributions for males and females in Class A entering the PRSI system at age 25 (Tables 11.1 (a) and 11.1 (b) below).

We have assumed in our initial analysis that all contributions have been "paid", i.e. that none of the contributions have been "credited"[46]. We have separately considered the impact of a PRSI history comprising a combination of "paid" and "credited" contributions in subsection 11.4.3. In Table 11.1 (a) for an individual on the minimum wage qualifying for 100% of SPC (€253.30 per week in 2022), 3.6 represents the multiple of the value this individual gets out of the Fund relative to what he / she has paid in.

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	3.6	1.3	0.7	0.4	0.3
€248.30	3.8	1.4	0.7	0.5	0.4
€227.70	4.4	1.7	0.8	0.6	0.4
€215.70	5.8	2.2	1.1	0.7	0.5
€165.10	6.6	2.5	1.2	0.8	0.6
€101.20	5.9	2.2	1.1	0.7	0.6

Table 11.1 (a): Value for money on a range of earnings levels, entering the PRSI system aged 25. The above table takes account of SPC only. It allows for qualified adult payments attaching to male recipients. The comparable VFM rates by gender are shown at 11.2 (b).

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	3.9	1.5	0.7	0.5	0.4
€248.30	4.2	1.6	0.8	0.5	0.5
€227.70	4.9	1.8	0.9	0.6	0.5
€215.70	6.6	2.5	1.2	0.8	0.7
€165.10	7.6	2.9	1.4	1.0	0.8
€101.20	7.5	2.8	1.4	0.9	0.8

Table 11.1 (b): Value for money on a range of earnings levels, entering the PRSI system aged 25. The above table takes account of SPC, Invalidity Pension, Illness and Jobseeker's Benefits. It allows for qualified adult payments attaching to male recipients.

46 Credited contributions ("credits") form an integral part of the social insurance system. They are awarded in circumstances where normally active labour force participants face circumstances where they may not be in a position to make paid social insurance contributions. They may be used to secure entitlement to short term and long-term social insurance benefits, but the claimant must in the first instance have a specified number of paid contributions before the credits become of any value.

11.4.2 SPC for Class A contributors entering the PRSI system aged 25 with Gender Analysis

The differences between the three tables that follow are:

— Table 11.2 (a) reflects the value for money in respect of pension benefits only. It does *not* reflect any allowance for the additional value for money for contributions made by males due to the fact that qualified adult payments to their spouses are payable in addition.
— Table 11.2 (b) reflects the value for money in respect of pension benefits only. It *does* reflect an allowance for the additional value for money to males due to the fact that qualified adult payments are payable in addition (as above).
— Table 11.2 (c) reflects the value for money in respect of SPC, Invalidity Pension, Illness, and Jobseeker's Benefits. It *does* reflect an allowance for the additional value for money to males due to the fact that qualified adult payments are payable in addition and includes a costing for the probability of requiring Invalidity Pension, Illness and/or Jobseeker's Benefit at each age to SPA.

Weekly Pension	Minimum Wage		NAE		NAE X2		NAE X3		NAE X4	
	M	F	M	F	M	F	M	F	M	F
€253.30	3.3	3.5	1.2	1.3	0.6	0.7	0.4	0.4	0.3	0.3
€248.30	3.5	3.8	1.3	1.4	0.7	0.7	0.4	0.5	0.3	0.4
€227.70	4.1	4.3	1.5	1.6	0.8	0.8	0.5	0.5	0.4	0.4
€215.70	5.4	5.8	2.0	2.2	1.0	1.1	0.7	0.7	0.5	0.5
€165.10	6.0	6.5	2.3	2.4	1.1	1.2	0.8	0.8	0.6	0.6
€101.20	5.5	5.9	2.0	2.2	1.0	1.1	0.7	0.7	0.5	0.5

Table 11.2 (a): Value for money by gender on a range of earnings levels, entering the PRSI system aged 25. The above table takes account of SPC only. This table does NOT reflect the impact of the additional qualified adult payment attaching to a male recipient.

Weekly Pension	Minimum Wage		NAE		NAE X2		NAE X3		NAE X4	
	M	F	M	F	M	F	M	F	M	F
€253.30	3.6	3.5	1.4	1.3	0.7	0.7	0.5	0.4	0.3	0.3
€248.30	3.9	3.8	1.5	1.4	0.7	0.7	0.5	0.5	0.4	0.4
€227.70	4.5	4.3	1.7	1.6	0.8	0.8	0.6	0.5	0.4	0.4
€215.70	5.9	5.8	2.2	2.2	1.1	1.1	0.7	0.7	0.6	0.5
€165.10	6.7	6.5	2.5	2.4	1.3	1.2	0.8	0.8	0.6	0.6
€101.20	6.0	5.9	2.3	2.2	1.1	1.1	0.8	0.7	0.6	0.5

Table 11.2 (b): Value for money by gender on a range of earnings levels, entering the PRSI system aged 25. This table compares directly with 11.1 (a) and takes account of SPC only. This table reflects the impact of the additional qualified adult payment attaching to a male recipient.

Weekly Pension	Minimum Wage		NAE		NAE X2		NAE X3		NAE X4	
	M	F	M	F	M	F	M	F	M	F
€253.30	3.9	4.0	1.5	1.5	0.7	0.7	0.5	0.5	0.4	0.4
€248.30	4.2	4.3	1.6	1.6	0.8	0.8	0.5	0.5	0.4	0.4
€227.70	4.8	5.0	1.8	1.9	0.9	0.9	0.6	0.6	0.5	0.5
€215.70	6.5	6.7	2.4	2.5	1.2	1.2	0.8	0.8	0.6	0.6
€165.10	7.4	7.8	2.8	2.9	1.4	1.5	0.9	1.0	0.7	0.7
€101.20	7.2	7.8	2.7	2.9	1.3	1.5	0.9	1.0	0.7	0.7

Table 11.2 (c): Value for money by gender on a range of earnings levels, entering the PRSI system aged 25. This table compares directly with 11.1 (b) and takes account of SPC, qualified adult payment to a male recipient and also Invalidity Pension, Illness and Jobseeker's Benefits.

We note the following in relation to the series of Tables 11.1 and 11.2:

- The calculations demonstrate that those with lower earnings and those with shorter contribution histories will continue to obtain the best value for money from the Fund;
- Value for money reduces as earnings increase. Contributions from higher earners are therefore partially subsidising the pension payments of lower earners, indicating that the system is strongly redistributive. This effect can also be seen from Tables 11.10 (a) and 11.10 (b);
- The Fund provides better value to female rather than to male contributors qualifying at the same pension levels due to higher female life expectancy. However, taking account of the additional value in respect of contributions paid by males, manifested largely through additional IQA payments (made directly to their spouses / partners), means that the value for money is broadly equivalent;
- When other benefits are considered in addition to the SPC such as Invalidity Pension, Illness, and Jobseeker's Benefits, females achieve better value for money than males due to their higher propensity to claim these benefits;
- In the case of those on a lower wage, an employee contribution is reduced through an employee PRSI Credit. The employer contribution is 7.8% (8.8% less 1% to the National Training Fund). Accordingly, pension recipients in this category receive good value for money from the Fund.

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	€71	€189	€378	€566	€755
€248.30	€65	€173	€346	€519	€692
€227.70	€52	€138	€275	€413	€551
€215.70	€37	€98	€197	€295	€393
€165.10	€25	€67	€134	€201	€267
€101.20	€17	€45	€91	€136	€182

Table 11.3: Average pension level that could be purchased if Class A accumulated contributions were invested and used to purchase a hypothetical private pension.

Table 11.3 shows the average weekly pension that the accumulated employment contributions (employer and employee) into the Fund would purchase in a hypothetical defined contribution pension scheme. In other words, it is the pension a Class A contributor might expect to receive if they invested all their and their employer's cumulative PRSI contributions in a defined contribution pension scheme [47] and at retirement purchased a pension with the accumulated value of the invested contributions.

The resulting calculations are an alternative way of looking at the question of value for money consistent with Tables 11.1 and 11.2 and highlights that the level of SPC provided to those Class A contributors on lower incomes is greater than the pension their accumulated contributions would otherwise purchase in a hypothetical defined contribution pension scheme. This is particularly true for those who qualify for the lower weekly pension amounts. The corollary is true for those on higher incomes.

If we consider the highlighted individual in the above table with Average Earnings, the rate of the weekly personal pension payment received is 65% or €165.10, as highlighted. Accumulating the same PRSI (employee and employer) contributions over the projection period, we have estimated the pension they could secure from their hypothetical defined contribution pension scheme would be €67 per week, as highlighted (40% of the SPC this same individual would receive from the Fund).

11.4.3 Impact of credited contributions on value for money

Table 11.4 below shows the value for money index of the Fund, where 10 years[48] of contributions to the Fund are "credited" rather than "paid".

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	7.2	2.7	1.4	0.9	0.7
€248.30	8.0	3.0	1.5	1.0	0.8
€227.70	10.4	3.9	2.0	1.3	1.0
€215.70	18.0	6.8	3.4	2.3	1.7
€165.10					
€101.20					

Table 11.4: Value for money on a range of earnings levels, entering the PRSI system aged 25, where 10 years of contributions are credited. The above table takes account of SPC, Invalidity Pension, Illness, and Jobseeker's Benefit.

This table directly compares to Table 11.1 (b) and shows the incremental value for money for an individual credited with 10 years contributions as distinct from an individual with 100% paid contributions (i.e. no credits).

47 Based on the assumptions set out in Society of Actuaries Standard of Practice ASP PEN12 v 1.7.

48 We have assumed that credited contributions start at age 35 and end at age 45.

As expected, the value for money increases in this case as the level of benefits is the same, however there are 10 years less "paid" contributions into the Fund. For example, if we consider an individual on Average Earnings and entitled to full rate pension, their value for money index is 1.5 when all contributions are 100% "paid" but increases to 2.4 when we adjust to allow for 10 years "credited" contributions.

The value for money for the 65% and 40% rate of pension has not been included, as the minimum of 10 years of paid contributions along with the 10 years of credited contributions applied means that the minimum rate of pension qualified for would be at 85%+.

11.4.4 Impact of illustrative change to State Pension Age from 66 to 68 on value for money

Tables 11.5 (a) and (b) below compare directly with Tables 11.1 (a) and (b) above, except that it shows the value for money index provided by the Fund where the SPA is 68 rather than 66.

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	3.1	1.2	0.6	0.4	0.3
€248.30	3.3	1.2	0.6	0.4	0.3
€227.70	3.8	1.4	0.7	0.5	0.4
€215.70	5.1	1.9	1.0	0.6	0.5
€165.10	5.7	2.1	1.1	0.7	0.5
€101.20	5.1	1.9	1.0	0.6	0.5

Table 11.5 (a): Value for money on a range of earnings levels, entering the PRSI system aged 25. The above table takes account of SPC only. It allows for qualified adult payments attaching to male recipients and allows for SPA=68.

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	3.5	1.3	0.6	0.4	0.3
€248.30	3.7	1.4	0.7	0.5	0.3
€227.70	4.3	1.6	0.8	0.5	0.4
€215.70	5.8	2.2	1.1	0.7	0.5
€165.10	6.7	2.5	1.3	0.8	0.6
€101.20	6.6	2.5	1.2	0.8	0.6

Table 11.5 (b): Value for money on a range of earnings levels, entering the PRSI system aged 25. The above table takes account of SPC, Invalidity Pension, Illness and Jobseeker's Benefits. It allows for qualified adult payments attaching to male recipients and allows for SPA=68.

As expected, the value for money reduces. While the level of benefits received is the same, the pension is payable for a shorter period of time whilst contributions (employee and employer PRSI) are payable for a longer period. Comparing and contrasting Tables 11.1 (a) and 11.5 (a), it can be seen that the value for money for an individual on Average Earnings who is presumed to access the full rate of SPC only reduces from 1.3 to 1.2, for example.

There is a similar impact on value for money where the fuller range of benefits are taken into account. Although the State pensions are impacted as described above the other benefits costed (Invalidity Pension, Illness and Jobseeker's Benefits) are assumed to be available / payable for a longer period of time. Comparing and contrasting Tables 11.1 (b) and 11.5 (b), it can be seen that the value for money for an individual on Average Earnings who is presumed to access the full rate of SPC and also Invalidity Pension, Illness and Jobseekers Benefits (based on propensity of claiming each for every age) reduces from 1.5 to 1.3, for example.

11.4.6 Value for money on later entry to the PRSI system

Table 11.6 below shows the value for money on later entry to the PRSI system (assumed age 35 rather than 25 as per earlier examples).

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	5.4	2.0	1.0	0.7	0.5
€248.30	5.8	2.2	1.1	0.7	0.5
€227.70	6.7	2.5	1.3	0.8	0.6
€215.70	9.0	3.4	1.7	1.1	0.8
€165.10	10.4	3.9	2.0	1.3	1.0
€101.20					

Table 11.6: Value for money on a range of earnings levels, entering the PRSI system aged 35. The above table takes account of SPC, Invalidity Pension, Illness and Jobseeker's Benefits. It allows for qualified adult payments attaching to male recipients.

If we compare Table 11.6 to Table 11.1(b), we can see that, as expected, the value for money for all pension rates and earnings levels increase the later the individual enters the PRSI system. Eligibility rules are met on the basis of the average number of weekly contributions paid before State pension age; however the total value of contributions paid into the Fund is over a shorter period of time and therefore the Fund provides greater value for money.

For example, an individual who enters the PRSI system aged 25 on double the Average Earnings with entitlement of €253.30 weekly pension, has a value for money index of 0.7 meaning that this individual does not receive particularly good value for money from the Fund. On the other hand, for the same individual who enters the PRSI system aged 35, the value for money index increases to 1.0 as can be seen in the table above.

11.5 Value for money in respect of SPC for self-employed

Currently the self-employed (Class S) PRSI contributors enjoy the same SPC entitlements as those paying Class A contributions. However, as self-employed contributors pay contributions at 4% compared to a combined Class A employer /

employee contribution of 14.05% (15.05% less 1% National Training Fund Levy), they are not entitled to receive certain some short-term benefits, for example Illness Benefit.

Table 11.7 below shows the value for money a Class S contributor receives from their SPC on entering the system aged 25. This is shown on a range of different earning and pension rate levels and in all cases is well in excess of 1, indicating very good value for money is achieved.

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	9.4	4.4	2.2	1.5	1.1
€248.30	10.7	5.0	2.5	1.7	1.3
€227.70	12.3	5.8	2.9	1.9	1.5
€215.70	16.4	7.7	3.9	2.6	1.9
€165.10	18.4	8.7	4.3	2.9	2.2
€101.20	16.6	7.8	3.9	2.6	2.0

Table 11.7: Value for money for self-employed on a range of earnings levels, entering the PRSI system aged 25. The above table takes account of SPC with attaching qualified adult payment, reflecting Class S rate of 4%

The impact on value for money where the self-employed rate is increased from 4% per annum to 7.03% per annum, being the average of the employee (4%) and employer rate (10.05% being 11.05% less the 1% NTF levy) is shown at Table 11.7 (a).

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	5.4	2.5	1.3	0.8	0.6
€248.30	6.1	2.9	1.4	1.0	0.7
€227.70	7.0	3.3	1.7	1.1	0.8
€215.70	9.3	4.4	2.2	1.5	1.1
€165.10	10.5	4.9	2.5	1.6	1.2
€101.20	9.5	4.5	2.2	1.5	1.1

Table 11.7(a): Value for money for self-employed as per Table 11.7 but reflecting an increase in the Class S rate to the average of the employee and employer rates from 4% to 7.03%

Comparing tables 11.7 and 11.7 (a) shows that the value for money for an individual on NAE x 3 qualifying for the 100% rate of pension (€253.30 per week) reduces from 1.5 times to 0.8 times where Class S contributions from 4% to 7.03% (being the average of the employee and employer rate).

Table 11.8 shows the average weekly pension that the 4% p.a. contributions into the Fund would purchase in a hypothetical defined contribution pension scheme. In other words, it is the pension a self-employed individual might expect to receive if they invested their contributions from age 25 to age 66 in a defined contribution pension scheme and at SPA purchased a pension with the accumulated value of the invested contributions.

Weekly Pension	Min Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	€26	€54	€109	€163	€218
€248.30	€23	€50	€100	€150	€199
€227.70	€19	€40	€79	€119	€159
€215.70	€13	€28	€57	€85	€113
€165.10	€9	€19	€39	€58	€77
€101.20	€6	€13	€26	€39	€52

Table 11.8: Average pension level that could be purchased by self-employed contributors if accumulated contributions were invested and used to purchase a private pension

The above tables highlight the fact that the SPC provides very good value for money to the self-employed. This value for money is greatest for those on the lowest income.

For example, if we consider a self-employed individual with Average Earnings and in receipt of a 100% pension, the weekly personal pension payment received is €253.30. Accumulating the same contributions over the projection period, we have estimated the pension they could secure from their hypothetical defined contribution pension scheme would be approximately €54 per week. The pension they receive from the Fund is approximately 4.7 times greater.

Self-employed contributions are charged at the rate of 4% of reckonable income at or over €5,000 or a flat €500, whichever is the greater. Self-employed contributors who pay the minimum contribution of €500 and who build up a sufficient contribution history to qualify for the SPC are getting exceptional value for money. To put this into context individuals paying at the minimum €500 per year over a working life will receive a pension of €253.30 per week indexed (circa €13,171 per annum) for each year post SPA.

11.5.1 Impact on value for money including the short-term benefits available to Class S PRSI contributors

Table 11.9 below shows the value for money a Class S contributor receives from this range of benefits on entering the system aged 25. The table compares directly with Table 11.7 except for the inclusion of Invalidity Pension and Jobseeker's Benefit (Self-Employed) and is shown on a range of different earning and pension rate levels. In all cases the value for money is well in excess of 1, indicating very good value for money.

Weekly Pension	Min Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	10.2	4.8	2.4	1.6	1.2
€248.30	11.5	5.4	2.7	1.8	1.4
€227.70	13.4	6.3	3.2	2.1	1.6
€215.70	17.8	8.4	4.2	2.8	2.1
€165.10	20.6	9.7	4.8	3.2	2.4
€101.20	19.8	9.3	4.7	3.1	2.3

Table 11.9: Value for money for self-employed on a range of earnings levels, entering the PRSI system aged 25. The above table takes account of SPC pension benefits (with attaching qualified adult payments) and also Invalidity Pension, and Jobseeker's Benefit (Self-Employed).

Comparing and contrasting the resulting value for money for various contributors as revealed in Table 11.7 with the assessed value for money under Table 11.9 provides an indication of the incremental value for money which is realised by Class S contributors where Invalidity Pension and Jobseeker's Benefit (Self-Employed) are available in addition to the SPC. For example, an individual on Average Earnings becoming entitled to an SPC of €215.70 achieves a value for money index of 7.7 where only the SPC benefit is assumed to be accessed. This increases to 8.4 where in addition to SPC, Invalidity Pension and Jobseeker's Benefit (Self-Employed) are also considered.

The impact on value for money (where a range of benefits in addition to SPC are considered) where the self-employed rate is increased to the average of the employee and employer rate is shown at Table 11.9 (a). Comparing tables 11.9 and 11.9 (a) shows that the value for money for an individual on NAE x 3 qualifying for the 100% rate of pension (€253.30 per week) reduces from 1.6 times to 0.9 times where a Class S contribution from 4% to 7.03% applies (being the average of the employee and employer rate).

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	5.8	2.7	1.4	0.9	0.7
€248.30	6.6	3.1	1.5	1.0	0.8
€227.70	7.6	3.6	1.8	1.2	0.9
€215.70	10.2	4.8	2.4	1.6	1.2
€165.10	11.7	5.5	2.8	1.8	1.4
€101.20	11.3	5.3	2.7	1.8	1.3

Table 11.9 (a): Value for money for self-employed as per Table 11.9 but reflecting an increase in the self-employed rate to the average of the employee and employer rates (i.e. 7.03% being (4% +10.05%) / 2).

The impact on value for money where the self-employed population are entitled to Illness Benefit along with the existing Invalidity Pension and Jobseeker's Benefit (Self-Employed) is shown at Table 11.9 (b). As can be seen by comparing tables 11.9 with 11.9 (b) the incremental value for money achieved by adding in Illness Benefit on top of the other benefits to which Class S are already in receipt is very marginal.

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	10.3	4.8	2.4	1.6	1.2
€248.30	11.6	5.5	2.7	1.8	1.4
€227.70	13.5	6.4	3.2	2.1	1.6
€215.70	18.0	8.5	4.2	2.8	2.1
€165.10	20.9	9.8	4.9	3.3	2.5
€101.20	20.2	9.5	4.8	3.2	2.4

Table 11.9 (b): Value for money for self-employed on a range of earnings levels, entering the PRSI system aged 25. The above table takes account of SPC pension benefits (with attaching qualified adult payments) and also Invalidity Pension, and Jobseeker's Benefits (Self-Employed), and additionally Illness benefit.

11.5.2 Contribution Rates needed to replicate SPC

We have calculated the annualised contribution rates that would need to be paid to replicate the SPC on a range of earnings and pension rates for individuals entering the PRSI system aged 25. This is shown in Table 11.10 (a) below and results are compared to the "effective" annual rate of PRSI payable by Class A and Class S contributors.

Table 11.10 (b) is similar to 11.10 (a) except that in addition to calculating the hypothetical contribution rate required to replicate the SPC in the various rate bands we also incorporated the hypothetical contribution / cost (as a % of salary) of notionally taking out insurance against the probability of needing to claim Invalidity Pension, Illness Benefit, and Jobseeker's Benefit (Self-Employed).

The "required" contribution in Table 11.10 (a) is the % of salary that would need to be paid annually on an individual's income to replicate the SPC. The required contribution rate in Table 11.10 (b) is the combined % of salary that would need to be paid to replicate the SPC but also pay for the cost of potentially claiming Invalidity Pension and Jobseeker's Benefit (Self-Employed) at each and every year up to SPA.

Weekly Pension	Minimum Wage			NAE			NAE X2			NAE X3			NAE X4		
	Required PRSI Rate	Effective PRSI		Required PRSI Rate	Effective PRSI		Required PRSI Rate	Effective PRSI		Required PRSI Rate	Effective PRSI		Required PRSI Rate	Effective PRSI	
		Class A	Class S		Class A	Class S		Class A	Class S		Class A	Class S		Class A	Class S
€253.30	37.69%	11.21%	4.00%	17.74%	14.05%	4.00%	8.87%	14.05%	4.00%	5.91%	14.05%	4.00%	4.43%	14.05%	4.00%

Table 11.10 (a): Contribution rate as % of full-time equivalent salary required to replicate the SPC payment only. The table compares these contribution rates with the effective actual annual contribution rates payable.

Weekly Pension	Minimum Wage			NAE			NAE X2			NAE X3			NAE X4		
	Required PRSI Rate	Effective PRSI		Required PRSI Rate	Effective PRSI		Required PRSI Rate	Effective PRSI		Required PRSI Rate	Effective PRSI		Required PRSI Rate	Effective PRSI	
		Class A	Class S		Class A	Class S		Class A	Class S		Class A	Class S		Class A	Class S
€253.30	41.80%	11.21%	4.00%	19.70%	14.05%	4.00%	9.80%	14.05%	4.00%	6.60%	14.05%	4.00%	4.90%	14.05%	4.00%

Table 11.10 (b): Contribution rate as % salary required to replicate the SPC payment, Invalidity Pension, Illness Benefit and Jobseeker's Benefit (Self-Employed). The table compares these contribution rates with the effective actual annual contribution rates payable.

The individuals highlighted in grey in the above tables are those who are getting good value for money from the Fund in that they are paying a lower effective annual rate of contribution than the hypothetically required rate.

By way of example an individual on Average Earnings would need to pay 17.74% of salary to replicate the €253.30 SPC 100% level assumed payable from age 66. Where the Invalidity Pension, Illness and Jobseeker's Benefit (Self-Employed) are also taken into account, the 17.7% would increase to 19.70%. This compares to the current effective PRSI rates of 14.05% (combined employer and employee of 15.05% less 1% National Training Fund Levy), paid under Class A and 4% paid under Class S respectively. Note that whilst the SPC is at the rates shown in the above table (leftmost column), the Invalidity Pension, Illness and Jobseeker's Benefit (Self-Employed) levels are assumed to be at rates appropriate to / commensurate with the typical PRSI history for the contributor in question. The combined cost compares directly with the "effective PRSI rate". Where the required PRSI rate is greater than the effective annual rate this indicates good value for money.

Other observations in relation to Tables 11.10 (a) and 11.10 (b)

— For those on minimum wage and Average Earnings the level of contributions hypothetically required far outweighs the effective Class A and Class S contributions indicating very good value for money is obtained;
— At higher earnings levels, the opposite is true. Effective annual Class A PRSI contributions rates (employer and employee) are approximately on a par with or in excess of the hypothetically required PRSI contribution rates;
— This outcome (that those with earnings in excess of Average Earnings x 2 do not get value for money) is consistent with the results from Table 11.1 (b), and these individuals effectively subsidise those at lower income levels. For example, under our assumptions, an annual contribution rate of 6.6% of earnings would be sufficient to be paid by an individual on Average Earnings x 3 in order to replicate a pension of €253.30 per week. However, this Class A contributor and his / her employer would have been required to pay between them an effective annual rate of PRSI of 14.05%;
— The Class S contributor on the same earnings level pays an effective rate of 4% and continues to receive good value for money from the Fund.

11.6 Value for money impact of voluntary contributions

When looked at over the course of a working lifetime, the value for money achieved by an individual paying voluntary contributions is relatively unchanged from those who pay regular contributions. Table 11.11 shows how value for money is impacted for a variety of Class A individuals through the payment of voluntary contributions for a hypothetical 2 years. The overall value for money increases as the contribution requirement is lower at 6.6% (subject to a floor of €500 per annum) when compared with the combined employer and employee rate. Table 11.11 compares directly with Table 11.1 (b) and it can be seen that for example the value for money for an individual on minimum wage qualifying for 100% SPC of €253.30 per week increases from 3.9 to 4.0 where 2 years voluntary contributions are paid.

Weekly Pension	Minimum Wage	NAE	NAE X2	NAE X3	NAE X4
€253.30	4.0	1.5	0.7	0.5	0.4
€248.30	4.2	1.6	0.8	0.5	0.4
€227.70	4.9	1.8	0.9	0.6	0.5
€215.70	6.5	2.5	1.2	0.8	0.6
€165.10	7.6	2.9	1.4	1.0	0.7
€101.20					

Table 11.11: Value for money for Class A on a range of earnings levels, entering the PRSI system aged 25, where 2 years of contributions are voluntary contributions. The above table takes account of SPC, Invalidity Pension, Illness, and Jobseeker's Benefit.

The value for money achieved through the payment of voluntary contributions for Class A can vary significantly particularly for those qualifying under the yearly average approach given the big jumps in rate bands in the design. For example, payment of voluntary contributions which

results in an individual qualifying at the 65% SPC rate band rather than the 40% band is naturally much more impactful than voluntary contributions paid over the same period resulting in a move upward from the 98% rate to the 100% rate band.

Table 11.12 below shows the impact on value for money of the payment of voluntary contributions by two sample class A members. Member A pays voluntary contributions for 2 years which means this individual qualifies for SPC at the 65% rate band rather than the 40% band. Member B pays 2 additional years of voluntary contributions and qualifies for the 100% rate band whereas without the voluntary contributions he would have qualified at the 98% rate band. Member A increases his / her overall value for money achieved from the Fund, whereas Member B experiences a small decrease in overall value for money.

Impact of Voluntary Contributions on value for money for those retiring in 2020				
	Member A		Member B	
	No Voluntary Contributions	2 Years Voluntary Contributions	No Voluntary Contributions	2 Years Voluntary Contributions
Entry into PRSI system	1979	1979	1979	1979
Total full rate contributions	520	520	1,864	1,864
Voluntary Contributions	0	104	0	104
Total Contributions	520	624	1,864	1,968
Average weekly contribution	12	15	45	48
Pension Rate	€101.20	€165.10	€248.30	€253.30
VFM at NAE	**269%**	**278%**	**157%**	**146%**

Table 11.12: Sample members Value for Money with and without 2 additional years of voluntary contributions.

In most cases formerly self-employed individuals achieve excellent value for money through the payment of voluntary contributions, given their voluntary contribution rate is a flat €500 per annum.

11.7 Value for money for a selection of sample contributors

The value for money received by an individual depends on the structure of the contributions paid and credited. Under the Total Contributions Approach Home Caring periods before entry into the PRSI system are considered for calculating the credited contributions upon reaching SPA. We have considered the impact on four sample insured persons / PRSI contributors all reaching pensionable age in 2020 as set out in Table 11.13.

Impact of Total contributions approach on value for money for those retiring in 2020				
	Member A	**Member B**	**Member C**	**Member D**
	No Gaps but mostly "credits"	**Small Gaps**	**Large gaps**	**Pre-career home caring**
Entry into PRSI system	1979	1979	1979	1984
Total full rate contributions	959	1,706	1,279	1,498
Home Caring Periods	0	0	0	520
Other Credits	1,173	43	85	37
Total for YA purposes	1,479	1,748	1,364	1,535
Total for TCA purposes	1,479	1,748	1,364	2,055
Average weekly contribution	36	42	33	42
Pension Rate	€227.70	€248.30	€227.70	€250.26
Qualification method	YA	YA	YA	TCA
VFM at NAE	**2.44**	**1.49**	**1.81**	**1.76**

Table 11.13: Sample reaching SPA in 2020

The above example illustrates that those with more gaps in their PRSI history have a higher value for money compared to those with a fuller PRSI record, as seen in the tables earlier in the chapter. The addition of pre-career Home Caring Periods can additionally increase the value for money achieved through late entry into the PRSI system by increasing the number of contributions earned. This can continue even if the yearly average qualification method is phased out as it only applies to the TCA method.

To provide context to the above Table 11.13, the data in Tables 11.14 and 11.15 provide detail on the distribution of those in the 2020 SPA data set by gender and falling into various rate bands. A similar exercise on a projected basis was performed for those reaching SPA in 2030.

Distribution by gender for those reaching SPA in 2020 and 2030

Dataset reaching SPA in 2020

	SPA in 2020 - Males		SPA in 2020 - Females	
Personal Rate	**Current Rules**	**TCA Only**	**Current Rules**	**TCA Only**
100%	54%	40%	37%	26%
90-99%	27%	11%	25%	11%
80-89%	13%	10%	27%	14%
70-79%	-	12%	-	16%
60-69%	4%	8%	8%	15%
50-59%	-	8%	-	11%
25-49%	2%	12%	3%	7%

Table 11.14: Distribution of those reaching SPA in 2020 across the various pension rate bands (expressed as a % of claimants) – males and females shown separately

Dataset reaching SPA in 2030

	SPA in 2030 - Males		SPA in 2030 - Females	
Personal Rate	**Current Rules**	**TCA Only**	**Current Rules**	**TCA Only**
100%	60%	44%	57%	44%
90-99%	26%	11%	21%	12%
80-89%	10%	10%	16%	12%
70-79%	-	9%	-	12%
60-69%	3%	8%	4%	9%
50-59%	-	7%	-	6%
25-49%	1%	10%	2%	5%

Table 11.15: Distribution of those reaching SPA in 2030 across the various pension rate bands (expressed as a % of claimants) – males and females shown separately

The value for money **findings of this Review** are broadly consistent with the 2015 Review:

- **Analysis by incomes:** Those on lower incomes fare considerably better than those on higher incomes. For those at the higher end of the income distribution, the Fund is re-distributive and these individuals generally get back less than they pay in.
- **Credits:** Those with sizeable credits achieve very good value for money. Those qualifying (i.e. a de-minimis 520 paid contributions) with a further 10 years+ credits qualify for SPC pension of at least 85% of the full rate.
- **Voluntary contributions:** Those paying voluntary contributions at Class S can achieve very good value for money from the SIF given the requirement to pay a flat €500 per annum. The value for money achieved by Class A can vary particularly for those qualifying under the yearly average approach given the big jumps in rate bands in the design.
- **Short contribution histories / late entrants:** Those with short contribution histories have the potential to fare better than those with full contribution histories under the current yearly average rule. This remains the case under the 'better of' formula for calculating SPC where the benefit of short histories on the yearly average formula can still be availed of. For example, an entrant to the system after age 31 will quality for a pension of at least 65% of full rate provided he / she has satisfied the 520 minimum contribution-requirement.
- **Gender findings:** For a male and female both becoming entitled to the same level of SPC for a given contribution history, the Fund provides better value to females (all else equal) due to longer female life expectancy and hence their likelihood to receive an SPC pension for longer.
- Factoring in the additional value in respect of contributions paid by males, manifested largely through additional IQA payments (made directly to their spouse/partners), means that the value for money is broadly equivalent across the genders as far as SPC entitlements are concerned. (Negligible qualified adult payments are made on female pension payments.)
- The value for money assessment is dependent on which benefits are assumed to be accessed. When for example other benefits are considered in addition to the SPC such as Invalidity Pension, Illness, and Jobseeker's Benefits, females achieve better value for money than male counterparts due to females' higher propensity to claim these benefits.
- **Class S:** The self-employed achieve very good value for money compared with the employed – when the comparison reflects that both employer and employee contributions are payable in respect of an employed person. The value for money for the self-employed has improved compared with the previous review reflecting the fact that the self-employed have since become entitled to Invalidity Pension and Jobseeker's Benefit (Self-Employed).
- **Changes to SPA:** Better value for money across both genders for those reaching SPA in / after 2021 now that the SPA has been maintained at age 66.
- **Changes to the formula for calculating SPC:** No impact on value for money for a majority but some females with significant Home Caring Periods have marginally improved value for money under the "better of" the yearly average and the TCA formula. Note that a contributor who had 10 years credits pre entering the system now gets credits under TCA and will have marked improved value for money from the Fund compared with the yearly average formula only.
- **Introduction of new benefits:** The introduction of new benefits including the option of accessing the new benefit payment at age 65 has improved the value for money over time for all contributors.

Appendix 1: How the Social Insurance Fund works

Introduction

Most employers and employees (over 16 years of age) pay social insurance contributions into the national Social Insurance Fund (SIF). In general, the payment of social insurance is compulsory. The Fund is made up of a current account and an investment account managed by the Minister for Social Protection and the Minister for Finance, respectively. The current account consists of contributions collected from people in employment and self-employment. This money is then used to fund social insurance payments. The investment account is a savings account. The Comptroller and Auditor General is responsible for ensuring that the accounts are kept in order and reports are made to the Houses of the Oireachtas.

Work and Social Insurance

Employees' social insurance contributions are deducted by their employer and collected by the Revenue Commissioners. The self-employed pay Class S social insurance contributions directly to the Revenue Commissioners.

Social Insurance Rates

Social insurance contributions are divided into different categories, known as Classes with sub-Classes in some instances.

Most employees in Ireland pay Class A social insurance. This Class of contribution confers an entitlement to the full range of social insurance benefits that are available from the Department, subject to meeting the qualifying criteria.

The other Classes of social insurance are Classes B, C, D, E, H, J, S, K, M, and P. Those insured in one of these Classes pay insurance at a lower rate than Class A contributors. Consequently, they are not entitled to the full range of social insurance benefits.

The 11 different social insurance Classes in Ireland are described below:

Class A applies to people in industrial, commercial and service type employment who are employed under a contract of service with a reckonable pay of €38 or more per week from employment. It also includes civil and public servants recruited from 6 April 1995. Most employees in Ireland pay PRSI Class A.

Class B applies to permanent and pensionable civil servants, registered doctors and dentists employed in the civil service and Gardaí, recruited before 6 April 1995.

Class C applies to Commissioned Army Officers and members of the Army Nursing service recruited before 6 April 1995. It provides cover for a limited number of social insurance benefits.

Class D applies to permanent and pensionable employees in the public service, other than those mentioned in Classes B and C, recruited before 6 April 1995. It provides cover for a limited number of social insurance benefits.

Class E applies to ministers of religion employed by the Church of Ireland Representative Body. It covers all social insurance payments except Jobseeker's Benefit, Jobseeker's Benefit (Self-Employed) and Occupational Injuries Benefit.

Class H applies to NCOs and enlisted personnel of the Defence Forces. It provides cover for all social insurance benefits except Jobseeker's Benefit (Self-Employed) and Occupational Injuries Benefit.

Class J applies to people earning less than €38 per week. However, people aged over 66 or people in subsidiary employment, regardless of the level of earnings, are always insurable at Class J. Class J social insurance provides cover for Occupational Injuries Benefit only.

Class S applies to self-employed people including certain company directors, people in business on their own account and people with income from investments and rents. It covers most social insurance benefits.

Class K applies to certain office holders (i.e. TDs, members of the Judiciary etc.) whose annual office holder income exceeds €5,200; the self-employed income of civil and public servants recruited prior to 1995; and unearned income received by employees and early retirees, where that unearned income is their only non-employment income. Class K social insurance does not give access to social insurance entitlements. These employees and pre-1995 civil and public servants generate social insurance entitlements based on the class of social insurance paid on their employment income.

Class M applies to employees with no liability to contribute to social insurance such as employees under 16 years of age, persons under 66 years in receipt of occupational pensions and office holders with less than €100 per week.

Class P applies to fishermen or fisherwomen who are classified as self-employed and who are already paying social insurance under Class S. It covers them for social insurance benefits not covered by Class S.

Social Insurance Benefits

There are a wide range of benefits that are available to people who have paid social insurance. Entitlement to these benefits is dependent on a number of conditions other than the social insurance contribution requirement. The social insurance qualifying criteria varies, depending on the type of benefit they are applying for. In general, when an individual applies for a social insurance benefit the following will be examined:

— the Class/Classes of social insurance they have paid;

- their age when they started making social insurance contributions (this applies in the case of State pensions);
- the number of paid and/or credited contributions they have made since entering insurable employment;
- the number of contributions paid and/or credited in the relevant tax year before the benefit year in which they make the claim. The relevant tax year is the second last complete tax year before they make a claim;
- the yearly average number of contributions in the case of some pensions;
- the total amount of contributions paid throughout the duration of an individual's working life is taken into account in the case of the SPC.

The social insurance benefits that are available include the following:

Jobseeker's Benefit

This is a weekly payment to people who are out of work and are covered by social insurance. If an individual does not qualify for Jobseeker's Benefit they may qualify for Jobseeker's Allowance.

Jobseeker's Benefit (Self-Employed)

Jobseeker's Benefit (Self-Employed) (JBSE) is a weekly payment from the Department to people who lose their self-employment. To qualify for the JBSE, one must be a Class S PRSI contributor along with meeting various other conditions.

Illness Benefit

This benefit is paid to insured workers aged under 66 who cannot work because of sickness or illness.

Maternity Benefit

Maternity Benefit is a payment made to insured women who are on maternity leave from work. The amount of money paid each week will depend on earnings. If the woman is already on certain social welfare payments, she may get half-rate Maternity Benefit in addition to that other payment.

Adoptive Benefit

Adoptive Benefit is a payment to adopting parents. It is available to both employees and self-employed people. An individual must meet certain PRSI contribution conditions on their own insurance record. Adoptive Benefit is paid for a continuous period of 24 weeks from the date of placement of the child.

Health and Safety Benefit

Health and Safety Benefit is a weekly payment for employed women who are pregnant or breastfeeding, and who are granted health and safety leave by their employer. Women are granted health and safety leave from employment if their employer cannot remove a risk to their health while they are pregnant, or breastfeeding, or assign alternative “risk-free” duties. To qualify for Health and Safety Benefit, certain criteria must be met.

Paternity Benefit

Paternity Benefit is a 2-week payment for employed and self-employed people who satisfy the contribution and other eligibility conditions for the scheme.

Parents Benefit

Parent's Benefit is a payment for parents in employment and self employment to allow them to take time off work for up to 7 weeks, to care for a child. This leave may be taken any time in the first 24 months after the child is born or in the case of adoption, within 2 years of the placement of the child with the family. Parent’s Benefit is paid provided the required contribution and other eligibility conditions for the scheme are met.

Partial Capacity Benefit

Partial Capacity Benefit allows an individual to return to work or self-employment (if they have reduced capacity to work) and continue to receive a payment from the Department. To qualify for the payment, the individual must be currently in receipt of Invalidity Pension or Illness Benefit for a minimum of 6 months.

Invalidity Pension

Invalidity Pension is a weekly payment to insured people who cannot work because of a long-term illness or disability. At age 66, recipients are transferred to the State Pension (Contributory).

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 spouse or civil partner of a deceased person. Either the recipient or their deceased spouse or civil partner must satisfy the contribution and other eligibility conditions for the scheme.

To qualify an individual must be a widow, widower or surviving civil partner and they must not be cohabiting with another person.

Guardian's Payment (Contributory)

An individual who is taking care of a child who is an orphan may receive a guardian's payment. It is not necessary to be a legally appointed guardian. A guardian's payment may be paid if the child lives with the guardian and s/he is responsible for the child's care. The payment must benefit the child.

If a child is attending a full-time education course, is aged between 18 and 22 years of age and is not living with or in the care of a guardian, the payment can be paid directly to the child.

State Pension (Contributory)

The State Pension (Contributory) is paid to people from the age of 66 who satisfy the social insurance contribution conditions. As it's not means-tested, an individual can have other income and still get a State Pension (Contributory). There are a number of pro-rata pensions available to people who paid different types of social insurance contributions. For example, those with mixed insurance records (i.e. people who worked for some time in both the public and private sector) may be entitled to a pro-rata pension. Persons who worked for some years abroad and whose pensions entitlement are governed by EU regulations or bilateral agreements may also be paid a pro-rata pension.

Treatment Benefit

Treatment Benefit provides dental, optical and aural services to qualified people. The scheme is available to insured workers and retired people who have the required number of social insurance contributions.

Occupational Injuries Benefit

Injury Benefit is available under the Occupational Injuries Benefit Scheme who satisfy the contribution and other eligibility conditions for the scheme.

It is a weekly payment made to individuals if they are unfit for work due to:

- an accident at work
- an accident while travelling (on an unbroken journey) directly to or from work
- an occupational disease.

To get Injury Benefit, the person must be unfit for work for more than 3 days as a result of the accident or disease (excluding Sundays or paid holiday leave).

Carer's Benefit

Carer's Benefit is a payment made to insured people who may be required to leave the workforce or reduce their working hours to care for a person(s) in need of full time care. An

individual receiving Carer's Benefit for a total period of 104 weeks for each person being cared for. This may be claimed as a single continuous period or in any number of separate periods up to a total of 104 weeks. However, if an individual claims Carer's Benefit for less than six consecutive weeks in any given period they must wait for a further six weeks before they can claim Carer's Benefit to care for the same person again. If they are caring for more than one person, they may receive payment for each care recipient for 104 weeks. This may result in the care periods overlapping or running concurrently.

Maintaining Social Insurance

For individuals outside the workforce or leaving the workforce, it is possible to maintain a social insurance record either by way of credited contributions or in certain circumstances by way of voluntary contributions.It is also possible to add Irish contributions and contributions paid in certain other states while working abroad to qualify for a social insurance benefits.

Credited Contributions

Individuals out of work may qualify for credited contributions. A credited social insurance contribution is a contribution given to individuals and recorded on their social insurance record. Some social insurance benefits allow for a combination of a person's paid and credited contributions to establish eligibility.

Pre-entry credits when one starts work

When a person starts work for the first time and pays a contribution at class A, E, H or P, they are entitled to pre-entry credits. These credits are normally given once and cover a person from the beginning of the contribution year of entering employment, up to the actual date employment started. The credits also cover the two previous income contribution years.

Credits during unemployment

Credits are automatically (subject to certain qualifying conditions) given to those who are fully unemployed and getting Jobseeker's Benefit. An individual does not automatically get credits if they are getting Jobseeker's Allowance. They must have paid or credited social insurance contributions in either of the last two contributionyears in order to do so.

It is possible to sign on for credits, if an individual is not entitled to a social welfare payment or is not a qualified adult on a spouse's, civil partner's or cohabitant's social welfare payment as long as the individual is:

- unemployed;
- available and capable of work;
- genuinely seeking work and;
- has paid or credited PRSI contributions in either of the last two contribution years.

Credits during illness

Credits are awarded to individuals getting Illness Benefit, Injury Benefit and Invalidity Pension, and subject to satisfying the conditions for Credits. Where a person exhausts his/her entitlement to Illness Benefit or Injury Benefit and qualifies for Disablement Benefit, s/he can continue to get credits provided they continue to submit medical certificates. Individuals who apply for Illness Benefit or Injury Benefit and do not qualify for payment may be entitled to credits if they have paid or credited contributions in the last two contribution years.

Credits for carers

A person who gives up work to care for someone and who qualifies for Carer's Allowance or Carer's Benefit will be awarded credits (subject to certain qualifying conditions). They will also get credits if they do not get one of these payments but are on Carer's Leave from work. If however, they avail of unpaid statutory Carer's Leave they must get their employer to complete an application for Carer's Leave "credits" on returning to work.

Homemakers Disregards

The Homemaker's Scheme can make it easier for homemakers to qualify for a State Pension (Contributory) and covers those who give up work to look after a child under 12 years of age, or an ill or disabled person aged 12 or over. The scheme, which allows periods caring for children or people with a caring need to be disregarded (from 1994), can have the effect of increasing the yearly average. There is a cap of 20 years for this scheme. A person can get disregards from the date they give up work to the end of that contribution year. If they are out of the workforce for the complete contribution year the complete year is disregarded when they are assessed for a State Pension (Contributory).

Student credits

Student credits are only given once and can cover periods in full-time education. To qualify an individual must have worked and paid social insurance Class A before starting their course. They must have started their course before reaching 23 years of age and before they have taken up full-time insurable employment.

Credits for Maternity Leave, Adoptive Leave, Parental Leave, Health and Safety Benefit

Subject to certain qualifying conditions, an individual will automatically be awarded credits while they are getting Maternity Benefit, Adoptive Benefit or Health and Safety Benefit.

Volunteer development worker's credits

If an individual spends time as a volunteer development worker abroad, they may be entitled to credits up to a maximum of five years.

Voluntary Contributions

Individuals between the age of 16 and 66 who are no longer covered by compulsory social insurance by way of insurable employment, self-employment or credited contributions may opt to pay voluntary contributions.

Payment of voluntary contributions can help maintain or improve an individual's contributory pension entitlements. They do not provide cover for any short-term benefits such as Jobseeker's, Illness, Maternity or Treatment Benefits.

Appendix 2: Accounts and short-term estimates

The table below summarises the accounts of the Fund between 1 January 2016 and 31 December 2020, 2021 figures reflect those in the published "2021 Further Revised Estimates for Public Services".

In € Billions						
	2016	**2017**	**2018**	**2019**	**2020**	**2021**
Total Receipts	9.217	9.816	10.204	11.585	10.645	11.130
Expenditure						
Pensions						
State Pension (Contributory)	4.662	4.916	5.217	5.603	5.835	6.125
Widow(er)'s or Surviving Civil Partner's (Contributory) Pension	1.437	1.467	1.510	1.559	1.587	1.624
Working Age Income and Employment Supports						
Jobseeker's Benefit	0.356	0.340	0.339	0.346	0.405	1.514
Jobseeker's Benefit (Self Employed)	0.000	0.000	0.000	0.000	0.011	0.053
Deserted Wife's Benefit	0.074	0.073	0.073	0.072	0.068	0.062
Maternity Benefit	0.255	0.256	0.265	0.267	0.258	0.261
Paternity Benefit	0.002	0.012	0.012	0.013	0.012	0.014
Redundancy & Insolvency	0.038	0.029	0.024	0.033	0.048	0.056
Treatment Benefit	0.031	0.041	0.098	0.101	0.091	0.105
Partial Capacity Benefit	0.013	0.016	0.018	0.021	0.025	0.026
Illness, Disability, Covid and Carer's						
Illness Benefit	0.597	0.599	0.623	0.606	0.593	0.634
Invalidity Pension	0.645	0.673	0.694	0.728	0.760	0.751
Widowed or Surviving Civil Partner Grant (Contributory)	0.006	0.005	0.005	0.006	0.006	0.006
Covid Related Payments	0.000	0.000	0.000	0.000	3.718	3.380
Disablement, Carer's, Injury Benefit, Medical Care	0.126	0.133	0.133	0.130	0.131	0.129
Children, HHB and other						
Child Related Payments	0.012	0.013	0.015	0.016	0.023	0.062
Household Benefit, Telephone & Fuel Allowance	0.226	0.227	0.243	0.275	0.304	0.312
Death Benefit	0.009	0.009	0.010	0.010	0.010	0.011
Total Schemes and Services	8.491	8.810	9.280	9.785	13.885	15.125
Administration Expenses	0.273	0.274	0.210	0.230	0.221	0.219
Total Expenditure	**8.763**	**9.084**	**9.490**	**10.015**	**14.106**	**15.344**

Notes: Income and Expenditure of the Social Insurance Fund (in € billions). 2016 - 2020 figures from accounts of the Fund. As per the Department's instruction, 2021 figures in the above table reflect Further Revised Estimates for Public Service 2021. The figures for 2021 in the above table differ from those in the main body of the Review (e.g., base case in Chapter 7) which reflect provisional outturn provided by the Department.

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Appendix 3: Summary data received and checks performed

As indicated in Chapter 4 we have summarised the key data received and checks performed.

SPC New entrants (various years)

2020 Data Summary – New SPC recipients 2018-2020							
Year of Birth / SPA	1952 (SPA 2018)		1953 (SPA 2019)		1954 (SPA 2020)		
Reduced Rate level	Male	Female	Male	Female	Male	Female	Weekly Rate
Full Pension	12,870	7,892	12,771	8,405	12,919	9,090	€253.30
98%-99% Pension	1,487	831	1,592	832	1,521	908	€248.46
90%-97% Pension	1,514	1,722	1,550	1,810	1,633	1,841	€229.19
85% -89% Pension	1,086	1,502	1,047	1,433	1,064	1,387	€216.03
75%-84% Pension	16	230	14	224	15	213	€199.46
65% -74% Pension	507	474	543	491	530	436	€166.97
50%-64% Pension	34	109	34	98	36	76	€143.42
40%-49% Pension	301	212	280	198	242	181	€104.35
Other Pensions	1,391	1,077	1,423	1,049	1,167	968	€43.88
Total	19,206	14,049	19,254	14,540	19,127	15,100	3-Year weighted ave
	33,255		33,794		34,227		
Weighted Avg Rates	€226.46		€226.95		€229.78		€227.74

SPC and WPC recipients by age and gender

SPC and WPC recipients by age and gender at 31 December 2020				
	SPC		WPC	
Age / Gender	**Male**	**Female**	**Male**	**Female**
Under 35	-	-	34	127
35-39	-	-	117	437
40-44	-	-	324	961
45-49	-	-	658	1,857
50-54	-	-	1,114	3,094
55-59	-	-	1,894	5,386
60-65	-	-	3,888	10,339
66	18,842	14,939	570	1,851
67-69	54,887	40,395	1,744	6,858
70-74	80,924	52,387	2,906	15,011
75-79	58,727	33,476	2,359	17,553
80-84	36,500	18,719	1,683	18,673
85-89	18,947	11,298	1,085	14,306
90-94	5,086	4,040	432	6,848
95+	714	887	80	1,884
Totals by Gender	274,627	176,141	18,888	105,185
Overall Total	**450,768**		**124,073**	

2020 breakdown of other benefits by age

	Invalidity		Illness		Widow's / Widower's		Jobseeker's Benefit		PUP	
Age	M	F	M	F	M	F	M	F	M	F
<20	-	-	6	12	-	-	13	9	10,230	12,821
20 - 24	1	-	339	524	-	-	1,024	1,294	35,325	36,442
25 - 29	15	32	782	1,488	2	10	2,015	2,393	23,552	20,248
30 - 34	139	425	1,150	2,733	32	117	2,372	2,881	21,124	20,656
35 - 39	658	1,452	1,559	3,707	117	437	2,846	3,981	21,870	21,429
40 - 44	1,358	2,618	2,077	3,871	324	961	2,995	4,207	20,311	18,938
45 - 49	2,265	3,612	2,092	4,059	658	1,857	2,824	4,041	18,152	16,102
50 - 54	3,188	4,915	2,354	4,847	1,114	3,094	2,779	3,642	16,325	13,864
55 - 59	5,459	7,922	2,589	4,837	1,894	5,386	3,184	4,384	14,157	11,192
60 - 64	9,427	11,712	3,193	4,738	3,126	8,336	5,648	7,868	11,591	7,918
65 - 69	2,448	2,762	1,508	2,208	3,076	10,712	2,337	3,022	1,961	1,156
70 - 74	-	-	-	-	2,906	15,011	-	-	-	-
75 - 79	-	-	-	-	2,359	17,553	-	-	-	-
80+	-	-	-	-	512	8,732	-	-	-	-
Total	**24,958**	**35,450**	**17,368**	**32,488**	**18,888**	**105,185**	**28,037**	**37,722**	**194,598**	**180,766**

2020 Data Summary by scheme type (Non-pension benefits)			
Scheme	Male	Female	Average Weekly Benefit
Invalidity	24,958	35,450	€242.02
Illness	17,368	32,488	€228.60
Jobseeker's	28,037	37,722	€218.68
Maternity	-	19,661	€252.40

Checks performed

We performed high-level checks on the data but ultimately are reliant on the quality of the data provided by the Department. Our checks included checking that claimant numbers provided were broadly consistent with those in prior year statistical reports and that claimants times payment rates (at broadly expected weighted average levels) tied in with aggregate expenditure by benefit type.

Appendix 4: Detail on Homemaking and Home Caring allowance

Background to the Homemaker's Scheme

Under the Homemaker's Scheme subject to specified eligibility criteria, any years that an individual spent as a homemaker (since 6 April 1994) are ignored or "disregarded" when working out the yearly average contributions for SPC.

A homemaking year is a year in which an individual is out of the workforce for the full tax year. Up to a maximum of 20 homemaking years can be disregarded for SPC purposes.

Homemaker's disregards can be awarded for part of a year at the start of the homemaking period, from the date an individual becomes a homemaker up to the end of the tax year. Likewise, homemaker's disregards can also be awarded for part of a year when the homemaking period ends, from the start of the tax year up to the date an individual stops homemaking.

Section 9 of the Social Welfare Act 2018

Section 9 of the Social Welfare Act 2018 introduced a Total Contributions Approach (TCA) including "Home Caring Periods" of up to 20 years which was designed to address anomalies from the yearly averaging system.

The TCA with Home Caring Periods is available to all people who reached pension age after 1st September 2012, when the revised rate bands took effect. The TCA calculation option is made available to those who reached pension age after that date, and the higher rate of entitlement will be paid.

Under the arrangements a person who has a 40 year record of paid and credited social insurance contributions, subject to a maximum of 20 years of Home Caring Periods, will qualify for a maximum SPC where they satisfy the other qualifying conditions for the scheme. Under the scheme, time spent caring for another before entering the social insurance system can be considered for the purpose of Home Caring Periods

Allowance for Home Caring within the calculation of SPC

Caring is reflected in both the yearly average approach and total contributions approach to the calculation of SPC entitlement, albeit in slightly different ways under each method.

Calculation of allowance for homemaking disregards in the calculation of SPC under the Yearly Average approach

— Includes post 1994 service and is reflected as a disregard in the calculation of the yearly average approach.

Calculation of allowance for Home Caring Periods for the calculation of SPC under TCA rules

— In order to calculate the revised % SPC rates reflecting Home Caring Periods, we needed to examine the data to review gap years and (potential) Home Caring Periods reflecting pre and post 1994 cognisant of potential allowance for up to 20 years.

Pre and post 1994 service gaps and credits (i.e. TCA calculation)

We set out below our approach to estimating Home Caring gap periods and likely "take-up" by males and females.

"Take-up" refers to the propensity for individuals to actually make a claim in respect of homemaking periods having registered, where applicable, for the Homemakers scheme.

The following table shows the PRSI contribution history record "gaps" between the ages of 21 – 50 for both males and females in the 2019/2020 and the 2030 SPC datasets. It shows that typical female gaps at ages 21 - 50 amounts to circa 17 years for those who claimed in 2019/20 and the record gaps at these ages for men are 10 years. For those reaching SPA in 2030 the gap reduces marginally for women to 15 years and increases for men to 14 years.

PRSI record average gaps (years) for ages 21 – 50		
Sample of SPC claimants	**Male**	**Female**
2019/2020 (DOB 1953/54)	10.3	16.7
2030 (DOB 1964)	14.4	14.9

Note: Table above reflects gaps in records (and also gaps prior to entering the social insurance system) which may indicate Homemaking Periods (ages 21-50).

Confirmed/ estimated Home Caring Periods

Confirmed /estimated homemaking for ages 21 - 50 (pre & post 1994 service)		
Sample of SPC claimants	**Male**	**Female**
2019/2020 (DOB 1953/54)	0.4	6.0
2030 (DOB 1964)	0.6	5.3

Note: The 2019/2020 sample had confirmed Home Caring Periods, the 2030 sample is estimated by converting gaps times take up rates of 4% and 36% for males and females respectively.

Post 1994 service only (i.e. used for disregards in the yearly average approach)

Where only post 1994 gaps in contribution histories are examined (given the fact that the current Homemaker's scheme reflects a "disregard" in the calculation of the yearly average beginning from this period only), the relevant gaps are much reduced particularly with respect

to the 2019/2020 SPC claimant samples. This reflects the fact that majority of homemaking periods would have been taken by 1994.

Social Insurance record average gaps (years) for ages 21 – 50		
Sample of SPC claimants	**Male**	**Female**
2019/2020 (i.e. DOB 1953/54)	3.0	5.5
2030 (i.e. DOB 1964)	9.8	10.6

Note: Gaps in records at ages which may indicate Homemaking Periods post 1994.

Confirmed/ estimated homemaking periods post 1994

Confirmed/estimated homemaking for ages 21 - 50. Post 1994 service only		
Sample of SPC claimants	**Male**	**Female**
2019/2020 (i.e. DOB 1953/54)	0.1	1.4
2030 (i.e. DOB 1964)	0.4	2.6

Note: The 2019/2020 SPC claimant sample had confirmed Homemaking Periods, the 2030 sample is estimated by converting gaps times take up rates of 13% and 47% for males and females respectively.

Appendix 5: Detailed projections on base case assumptions

In € Billions	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2045	2055	2065	2076
Total Receipts	14.168	14.798	15.381	15.971	16.373	16.763	17.126	17.454	17.831	19.637	23.349	27.380	32.262	38.136
Expenditure														
Pensions														
State Pension (Contributory)	6.384	6.820	7.272	7.740	8.192	8.818	9.121	9.603	10.113	12.874	20.242	29.084	36.056	46.438
Widow's, Widower's or Surviving Civil Partner's (Contributory) Pension	1.654	1.721	1.788	1.854	1.910	2.005	2.022	2.075	2.128	2.422	3.164	4.035	4.883	6.213
Working Age Income and Employment Supports														
Jobseeker's Benefit	0.456	0.479	0.516	0.546	0.576	0.611	0.627	0.646	0.664	0.749	0.917	0.994	1.205	1.341
Jobseeker's Benefit (Self Employed)	0.019	0.020	0.022	0.023	0.025	0.026	0.026	0.027	0.028	0.031	0.035	0.040	0.047	0.052
Deserted Wife's Benefit	0.059	0.055	0.051	0.047	0.043	0.038	0.035	0.031	0.029	0.016	0.001	0.000	0.000	0.000
Maternity Benefit	0.268	0.274	0.280	0.286	0.291	0.297	0.303	0.309	0.315	0.350	0.417	0.465	0.546	0.652
Paternity Benefit	0.014	0.014	0.015	0.015	0.015	0.016	0.016	0.016	0.017	0.019	0.022	0.025	0.029	0.035
Redundancy & Insolvency	0.050	0.052	0.054	0.055	0.056	0.057	0.059	0.060	0.061	0.067	0.083	0.100	0.119	0.000
Treatment Benefit	0.110	0.115	0.119	0.122	0.126	0.129	0.132	0.135	0.138	0.152	0.180	0.210	0.248	0.293
Partial Capacity Benefit	0.027	0.028	0.029	0.030	0.030	0.031	0.032	0.033	0.033	0.037	0.043	0.051	0.060	0.071
Illness, Disability, Covid and Carer's														
Illness Benefit	0.615	0.629	0.645	0.658	0.668	0.678	0.689	0.698	0.708	0.760	0.886	1.013	1.209	1.340
Invalidity Pension	0.748	0.763	0.779	0.794	0.808	0.822	0.840	0.855	0.870	0.988	1.205	1.350	1.658	1.888
Widowed or Surviving Civil Partner Grant (Contributory)	0.010	0.010	0.010	0.011	0.011	0.011	0.011	0.012	0.012	0.013	0.016	0.018	0.022	0.025
Covid Related Payments	0.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Disablement, Carer's, Injury Benefit, Medical Care	0.126	0.130	0.135	0.140	0.143	0.147	0.151	0.154	0.157	0.173	0.205	0.240	0.282	0.334
Children, HHB and other														
Child Related Payments^	0.081	0.083	0.085	0.087	0.088	0.090	0.091	0.093	0.094	0.104	0.124	0.140	0.164	0.195
Household Benefit, Telephone & Fuel Allowance	0.358	0.382	0.406	0.431	0.455	0.479	0.504	0.530	0.557	0.702	1.092	1.524	1.920	2.471
Death Benefit	0.010	0.011	0.011	0.012	0.012	0.013	0.013	0.013	0.014	0.016	0.023	0.030	0.039	0.048
Christmas bonus	0.171	0.181	0.191	0.202	0.212	0.226	0.233	0.243	0.254	0.316	0.476	0.666	0.823	1.053
Total Schemes and Services	11.252	11.767	12.406	13.053	13.661	14.496	14.905	15.534	16.193	19.786	29.131	39.985	49.311	62.449

Administration Expenses	0.256	0.262	0.268	0.273	0.278	0.282	0.285	0.288	0.292	0.310	0.361	0.420	0.490	0.579
Total Expenditure	**11.508**	**12.029**	**12.674**	**13.326**	**13.939**	**14.777**	**15.190**	**15.822**	**16.484**	**20.097**	**29.492**	**40.406**	**49.800**	**63.028**
Excess of Receipts over Payments	**2.661**	**2.770**	**2.708**	**2.646**	**2.435**	**1.987**	**1.937**	**1.632**	**1.348**	**-0.459**	**-6.142**	**-13.025**	**-17.536**	**-24.890**
Surplus / Shortfall as a % GDP	0.6%	0.6%	0.5%	0.5%	0.5%	0.4%	0.4%	0.3%	0.2%	-0.1%	-0.8%	-1.5%	-1.7%	-2.1%
Surplus / Shortfall as a % GNI*	1.1%	1.1%	1.1%	1.0%	0.9%	0.7%	0.7%	0.6%	0.5%	-0.1%	-1.6%	-3.0%	-3.4%	-4.1%
Fund (at year end)	2.660	5.430	8.137	10.782	13.216	15.202	17.139	18.770	20.117	21.370	N / A	N / A	N / A	N / A

Note: 2022 Expenditure figures taken from Revised Estimates for Public Services 2022 and income figures estimated from Department of Finance fiscal data to July 2022 published 31 August 2022.
2022 expenditure+ includes anticipated Christmas bonus of one week on applicable payments.
^Child-related payments include Parent's Benefit.

Appendix 6: Choice of discount rate assumption

A discount rate is required for the calculation of the present value of future cash-flows from the Fund. Specifically, the real discount rate (i.e., the nominal discount rate less impact of expected inflation) is critical to the determination of the value of the present value of expenditure and related shortfalls of expenditure versus income from the Fund.

Inflation expectations and long term government bond yields have risen materially between the effective date of the Review and the date of writing / signing. We have commented on the position at both dates given the very different macroeconomic backdrop.

In general higher inflation can be expected to feed through to higher nominal long term bond yields (as investors demand more compensation for the loss of purchasing power of future cashflows). However the relationship between inflation and long term nominal bond yields is not a linear one.

Building block assumption: Expected rate of inflation

In order to derive a "real" discount rate we need to examine measures of inflation at the effective date of the Review.

Market implied rates for Eurozone inflation[49] were circa 1.5% p.a. for long duration liabilities such as those reflected in this Review at effective date 31 December 2020.

Market implied long term measures of Eurozone price inflation have since increased to circa 2.5% p.a. by end August 2022 for long duration liabilities. Noted however in the short term that Eurozone inflation expectations are higher in the years 2022 – 2024 inclusive and the ECB is expecting Eurozone inflation to average 8.1% in 2022, 5.5% in 2023 and 2.3% in 2024.

Approaches to setting the nominal discount rate

The approaches considered when setting the discount rate to value the expenditure and indeed surpluses / shortfalls are as follows:

Approach A – Borrowing Costs of the Irish Government

Where an individual "earns" social insurance benefits such as a pension payable for life from State Pension Age, one could argue that the Irish Government is deferring the future cost of retirement benefits (i.e. annual pension payments) until the member's retirement date. Accordingly, one approach to setting the discount rate would be to reflect the current and expected long-term borrowing costs of the Irish Government.

49 Eurozone Market implied swap rates at 30 year+ duration

The Irish Government issues a range of long-term government bonds with average yields of circa 0.21% p.a. (nominal) at year end 2020. Long term Irish Government bonds yields at end August 2022 have risen substantially and are up up at circa 2.6% p.a. (nominal) coupled with inflation expectations of circa 2.5% p.a. giving rise to a +0.1% p.a. (real) discount rate under this Approach.

Examining borrowing costs of the Irish Government at the effective date of the review – 31 December 2020 – would imply use of a discount rate of 0.21% p.a.(nominal) or -1.29% p.a. (real).
At 31 August 2022 Approach A would result in a discount rate of 2.6% p.a. (nominal). or 0.1% p.a. (real).

Approach B – Use an approach which is consistent with the accounting standards that govern the valuation of defined benefit pension liabilities for the accounts of private sector companies

For the valuation of pension liabilities for the accounts of private sector companies, Financial Reporting Standards No 102 ("FRS 102") is used or local GAAP with International Accounting Standard 19 ("IAS 19") used otherwise. With respect to the discount rate, FRS 102 and IAS 19 indicate that this assumption should be set based on the yield available on high quality corporate bonds (i.e. AA rated) of the same duration and currency as the liabilities as at the measurement date.

The typical duration of SPC benefits for the youngest contributors to the SIF is of the order of 40-50 years whilst the average duration of defined pension scheme liabilities is circa 20 years.

A discount rate of circa 0.95% p.a. (nominal) would be considered appropriate for FRS102 purposes for a scheme with a duration of 30 years+ at effective date 31 December 2020 rising to circa 3.25% p.a. (nominal) at 31 August 2022.

Using an approach consistent with the accounting standards that govern the valuation of defined benefit pension liabilities for the accounts of private sector companies gives a discount rate of 0.95% p.a. (nominal) or -0.55% p.a. (real) effective 31 December 2020.
At 31 August 2022 Approach B would result in a discount rate of 3.25% p.a. (nominal) or 0.75% p.a. (real).

Approach C – Use of an approach which is consistent with the approach adopted by funded schemes in the private sector

Under this option, the discount rate reflects the assumed investment return on the assets used to provide pension related liabilities. At 31st December 2020, Eurozone Government AAA Bonds (iboxx AAA rate 10+ years) were yielding **circa 0% nominal.** Bank of America/Merrill Lynch Eurozone bond indices (EMU government) - AAA rated >10 years = -0.34%, the 4.5% French OAT 2041 bond was yielding 0.07%, the 2.0% French Tresor 2048 was yielding 0.27%.

The discount rate is a critical assumption for funding purposes in the case of a prefunded pension scheme and is heavily interlinked with investment strategy.

The baseline is a 100% bond / LDI investment strategy (the "least risk" portfolio) which gives a discount rate of 0% p.a nominal as per above at 31 December 2020.

Trustees in funded schemes are often amenable to holding a sizeable proportion of return seeking /growth assets particularly for schemes with long maturity and strong employer covenants. The reasons cited for holding return seeking / growth assets include the long-term nature of the promise and confidence in the employer covenant. Many actuaries use a dual discount rate model which reflects a pre-retirement discount rate that reflects initial investment strategy (with a significant allocation to return seeking assets) and a lower post retirement discount rate reflecting anticipated increase in risk reducing / matching assets as schemes mature / contributors retire.

While there are other ways to set assumptions for the return on equities, for consistency with other assumptions we recommend the approach of using an equity risk premium (ERP) over the return on least-risk assets of the appropriate duration, to allow for the additional expected return from taking on the relatively higher risk of the equity market.

Equity risk premiums (i.e. the return on equities above a given risk free rate) were typically in the region 3% - 5% at end 2020.

Assuming a hypothetical backing asset holding of a long-term investment strategy of 67% equities and 33% long dated euro area government bonds with an assumed investment return of 0% p.a. on bonds and 4.5% p.a. on equities (i.e. a 4.5% equity risk premium), a long-term discount rate of **3.0% p.a.** (nominal) or **1.5% p.a. (real)** at year end 2020 was calculated.

Adopting a similar approach at 31 August 2022 but assuming an equity risk premium of 3.0% p.a. coupled with a higher government bond yield assumption of 2.06% p.a. as per the yield on the French Tresor 2032 stock would result in a nominal discount rate of 4% p.a. (nominal) and a real discount rate of 1.5% p.a. (real) The 1.5% p.a. (real) is at the low end of a set of plausible assumptions at August 2022. Adopting an equity risk premium assumption of 4.5% p.a. would increase the discount rate to 2.5% p.a. (real).

Approach D – Use of an approach which is consistent with the accrued liability project which is required by EU Regulation 549 / 2013

The valuation of the State's total accrued liability in respect of the public service pensions and social security pensions needs to be periodically calculated as required by EU Regulation 549 / 2013.

Under this option, considerations for how to derive discount rate are set in the latest edition of Eurostat's Technical Compilation Guide for Pension Data in National Accounts 2020 edition[50].

[50] Technical compilation guide for pension data in national accounts (europa.eu)

The guide states that an inflation rate of 2% should be applied, coupled with a long term interest rate assumption of 4% p.a. (nominal) or 2% p.a. (real).

The latest guidance issued by Eurostat indicates that a long-term assumption of 4% p.a. nominal or 2% p.a. real discount rate assumption should be used to calculate the accrued to date liabilities of both social security and public service pension liabilities for EU reporting purposes.

Ultimate choice of discount rate:

While a number of approaches are valid a "smoothed" discount rate was used which could otherwise be plausibly used for funding purposes i.e. Approach C or 3.5% p.a. (nominal) or circa 1.5% p.a. (real) in the long term. A real discount rate of 1.5% p.a. was also used for the base case in the 2015 Review.

A single asset-based discount rate of 1.5% real was deemed appropriate to use reflecting the fact that the State as sponsor of a notional fully funded scheme would not need to de-risk assets as individuals approach retirement in the same way as for a typical private sector pension scheme.

We would caution, however, not to overly focus on one resulting real discount rate number given the high degree of attaching subjectivity and plausible alternatives.

Given the wide range of plausible rates which could be used and the subjectivity around this assumption, a range around the "base case" of 1.5% p.a. (real) will be shown including 2% p.a. real which tallies with Eurostat guidance in relation to long term assumptions to use for the calculation of public service pension and social security pension liabilities for EU reporting purposes.

Ultimately we did not elect "D" as an approach as the 2% long term inflation assumption is not "marked to market". Market implied long term inflation measures were 1.5% p.a. at 31 December 2020 (effective date of Review) and 2.5% p.a. at 31 August 2022 (time of writing)).

Macroeconomic conditions at time of writing (September 2022 reflecting 31 August conditions)

Since the effective date of the Review (i.e. 31 December 2020) economic conditions have changed materially post the Covid-19 pandemic and the ongoing Ukrainian conflict and the emergence of inflation.

Higher inflation in 2021 / 2022+

A major theme since 2021 was the emergence of inflation on the foot of the release of pent-up demand as economies re-opened post the Covid-19 pandemic, supply chain constraints.

On 8th September 2022 the Governing Council of the ECB decided to raise the three key ECB interest rates by 75 basis points. This step frontloads the transition from the prevailing highly accommodative level of policy rates towards levels that are expected to ensure the return of inflation to the ECB's 2% medium-term target. Based on its current assessment, over the next

several meetings the Governing Council expects to raise interest rates further to dampen demand and guard against the risk of a persistent upward shift in inflation expectations.

Looking ahead, the ECB have significantly revised up their inflation projections[51]. Eurozone inflation is now expected to average 8.1% in 2022, 5.5% in 2023 and 2.3% in 2024.

Bond yields in 2022+

The Eurozone >5-year bond index fell -7.0% in August as yields, which move inversely to price, rose with ECB commentary suggesting a faster and larger scale of rate rises was necessary to combat high inflation. The monthly rise in the German 10-year yield of 72bps to 1.54% was the largest since 1990.

[51] Monetary policy decisions (europa.eu)

Appendix 7: Smoothed earnings approach to indexation

Responses by DSP to Technical Sub-Committee of the Commission on Pensions (30 April 2021)

This note was prepared by officials in the Department in response to questions from the Technical Sub-Committee of the Commission on Pensions.

(i) Rationale for Benchmark

In 1986, the **Commission on Social Welfare** explored a range of methods in its attempts to arrive at an acceptable minimum adequate income level for social welfare claimants, including benchmarking rates against average industrial earnings. The Commissions report produced a range of possible rates of payment, depending on the method used for assessing adequacy.

In 1996, the **ESRI** was commissioned by the then named Department of Social Welfare to review the recommendations of the Commission in relation to minimum payments rates. The ESRI reviewed five of the methods applied by the Commission and also looked at the issue from a number of other perspectives. The estimates of minimum adequate income levels produced by the ESRI in 1996 for a single adult ranged from approximately 24% to 34% of gross average industrial earnings (GAIE).

In 1998, the **National Pensions Policy Initiative** again sought to ascertain an acceptable benchmark for pension rates. Having considered the issues surrounding both adequacy and coverage, the Pension Board considered that the best strategy in order to minimise the risk of poverty and provide coverage to lower income people in the most efficient way, was to set the target pension rate at the upper end of the range estimated by the ESRI. For reasons of practicality, the Board considered that this target should be expressed as a percentage of average industrial earnings and recommended the figure of 34% which was at the upper-end of the ESRI's recommendations, and more ambitious than the Government's stated policy intent at the time.

In 2001, a **Benchmarking and Indexation Group** was established under the Programme for Prosperity and Fairness to examine the range of complex issues associated with benchmarking and indexation of social welfare payments. The majority of the group considered that a target of 27% of GAIE for the lowest social welfare payments was not an unreasonable policy objective; a minority favoured 30% while others considered it inappropriate to set a target given that it was ultimately up to the Government to determine the level of social welfare increases from year to year.

The group noted that traditionally, the Old Age Contributory Pension would have been well ahead of minimum welfare rates, and was mindful of the National Pensions Policy Initiative Old Age Contributory Pension target of 34% of GAIE.

In 2006, the **National Pensions Review** produced a report to the Minister for Social and Family Affairs. The Report included a review of previously agreed pension targets, an assessment of current coverage at the time, and discussion of the strategic options for meeting the agreed targets.

The Pensions Board accepted, with a reservation from the representative of the Minister for Finance, that the targets remained valid. Accordingly, the Board continued to recommend a social welfare pension of 34% of GAIE.

In 2010, the **National Pensions Framework** stated that the Government would "seek to maintain the value of the State Pension at 35% of average earnings". At the time, rate of pension relative to average earnings had been skewed by sharp drops in average earnings of over 4% in the previous 15 months, and increases of over 10% in the rate of the State pension (Contributory) during the same period.

The **Roadmap for Pensions Reform 2018 - 2023** committed that the Government would examine and develop proposals to (i) set a formal benchmark target of 34% of average earnings for State Pension (Contributory) payments; and (ii) institute a process whereby future changes in pension rates of payment are explicitly linked to changes in consumer prices and average wages by the end of 2018.

In 2020, **the Roadmap for Social Inclusion 2020 – 2025** noted that "Ireland is one of just two OECD countries that do not use a formal system of benchmarking. Given that welfare payment rates are now at or close to recommended benchmark levels it is appropriate that a process of linking welfare payment rates to market earnings and price movements be formally considered".

The Roadmap outlined a potential approach (Smoothed Earnings) that could be used, and committed to finalising an approach for benchmarking pension payments for Government decision. This approach proposes that as a default, the State Pension (Contributory) be benchmarked against the average earnings measure using the 34% target benchmark commitment of the Roadmap for Pensions Reform.

(ii) Why was this particular earnings measure chosen?

A measure of Gross Average Industrial Earnings is no longer reported in Ireland. The CSO has advised that in the period since the 34% benchmark was first proposed the method it uses to calculate and report on average earnings has changed considerably. The concept of an 'average industrial wage' has now been replaced by a more detailed set of measures encompassing a broader range of occupations and includes, for example, measures for basic earnings, earnings including overtime, and earnings including ancillary or irregular payments.

In the absence of a single measure for Gross Average Industrial Earnings the CSO advises that the measure now reported as average earnings (excluding irregular earnings and overtime) in all NACE sectors B to S (this includes professional and services sectors as well

as ‘industrial’ sectors) is most closely aligned with the former concept of average industrial wages. This is evident from an examination of trends in the two measures in the overlap period during which both measures were reported (2008 – 2010). It is therefore proposed to use this measure as the basis for setting the benchmark rate.

Earnings Analysis using Administrative Data Sources (EAADS) are the other official earnings statistics produced by the CSO. Data is currently available for reference years 2011-2018. This is not published quarterly (therefore it would not be possible to use the proposed approach of using the Q1 figure in the current year and the last three quarters of the previous year to calculate the average) and reports gross earnings only.

The use of a base earnings benchmark excluding irregular earnings and overtime is also believed to be appropriate for the calculation of a base pension payment. If irregular earnings and overtime were to be included in the benchmark for calculation purposes then, to compare like with like, ancillary payments and benefits provided to pensioners (e.g., Household Benefits, Fuel Allowance, Christmas Bonus, Free Travel, etc.) would, properly, have to be included in the pension payment calculation.

State pension recipients may also receive an increase for a qualified adult. Those living alone receive the Living Alone Allowance and the Telephone Support Allowance which amount to an additional €21.50 per week.

Appendix 8: Additional shocks

In this section we have analysed the impact of the shocks discussed in Chapter 9, this time against the base case and agreed changes coupled with the "smoothed earnings" approach to indexation i.e. the "alternative base case". The reference to "agreed changes" relates to the below changes announced by the Minister for Social Protection in September 2022. The first part of this Appendix reflects the impacts of the shocks where PRSI rates remain unchanged from current levels. The second half reflects the impacts of the shocks where PRSI rates are increased in line with the "full projection period" scenario described in Chapter 10.

Reforms of State Pension system announced by the Minister September 2022

The Minister for Social Protection recently announced reforms of the State Pension system including:

- Maintaining the SPA at 66 and introducing a new flexible pension age
- From January 2024, people will have the option to continue working up until the age of 70 in return for a higher pension
- As recommended by the Pensions Commission, move to a 'Total Contributions Approach' for calculation of individual pensions entitlements on a phased basis over 10 years starting in January 2024
- There will be enhanced State Pension provision for long-term carers to be introduced from January 2024. This will mean, for the first time, people who have to give up work over a long duration to look after another person will have their time spent caring recognised in the pension system
- The Department of Enterprise, Trade and Employment will introduce measures that allow, but do not compel, an employee to stay in employment until the SPA
- Workers will be provided with access to a PRSI contribution statement service each year in a manner that enables them to understand their entitlements
- The long-term sustainability of the State Pension system will be addressed through gradual, incremental increases in social insurance rates over time
- The level and rate of increase in social insurance rates will be determined on a structured basis every 5 years informed by the outcome of a statutory actuarial review
- A commitment to explore the design of a scheme that would modify the current Benefit Payment for 65-year-olds to provide a benefit payment for people who, following a long working life, 40 years or more, are not in a position to remain working in their early 60s.

Shocks against alternative base case and with PRSI rates assumed to remain unchanged

Impact of adverse scenario due to Ukrainian conflict (as compared with alternative base case)										
	Alternative base case: reflecting agreed changes & smoothed earnings approach to indexation					Adverse scenario due to Ukrainian conflict				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	-3.5	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	-3.1	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.3	2.5	1.0%	5.2	14.7	12.3	2.4	1.0%	5.1
2024	15.4	13.2	2.1	0.8%	7.3	15.2	13.2	2.0	0.8%	7.0
2025	16.0	13.9	2.0	0.8%	9.3	15.7	13.9	1.8	0.7%	8.8
2026	16.4	14.6	1.8	0.7%	11.2	16.0	14.5	1.5	0.6%	10.3
2027	16.8	15.4	1.3	0.5%	12.5	16.4	15.4	1.0	0.4%	11.3
2028	17.1	15.8	1.3	0.5%	13.8	16.8	15.8	0.9	0.3%	12.2
2029	17.5	16.4	1.0	0.4%	14.8	17.1	16.5	0.6	0.2%	12.8
2030	17.8	17.1	0.7	0.3%	15.6	17.4	17.2	0.3	0.1%	13.0
2035	19.6	20.5	(0.9)	(0.3)%	14.3	19.2	20.6	(1.4)	(0.4)%	9.4
2040	21.5	24.6	(3.1)	(0.9)%	3.3	21.0	24.7	(3.7)	(1.1)%	(4.5)
2045	23.3	29.3	(5.9)	(1.6)%	(20.9)	22.8	29.4	(6.6)	(1.8)%	(31.7)
2050	25.3	34.3	(9.1)	(2.2)%	(60.7)	24.7	34.5	(9.7)	(2.4)%	(74.8)
2055	27.4	39.6	(12.2)	(2.8)%	(114.4)	26.8	39.7	(12.9)	(3.0)%	(132.0)
2060	29.8	44.3	(14.5)	(3.0)%	(179.8)	29.1	44.4	(15.3)	(3.3)%	(201.1)
2065	32.3	48.6	(16.4)	(3.2)%	(256.3)	31.6	48.8	(17.2)	(3.4)%	(281.8)
2070	34.8	53.7	(18.9)	(3.4)%	(346.6)	34.0	54.1	(20.1)	(3.7)%	(377.1)
2076	38.1	61.5	(23.4)	(3.8)%	(475.5)	37.2	62.0	(24.8)	(4.1)%	(513.8)

Table A8.1: Impact of adverse scenario due to Ukrainian conflict as compared with alternative base case. PRSI rates assumed to remain unchanged from current levels. Figures shown in € billions.

Under the alternative base case the Fund is projected to enter into deficit in the year 2032 whereas in the Ukrainian conflict scenario the Fund is projected to enter into deficit in the year 2031. Overall the accumulated deficit at the end of the projection period is projected to increase from €475.5 billion to €513.8 billion. As discussed at 9.6.1 the impact of the Ukrainian scenario is muted for a number of reasons. Lower GNI* growth at outset means that the projected deficit are expressed as a % of lower GNI* in future years.

Impact of adverse scenario due to multi-year recession (as compared with alternative base case)										
	Alternative base case: reflecting agreed changes & smoothed earnings approach to indexation					Adverse scenario due to multi-year recession				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.3	2.5	1.0%	5.2	12.3	13.2	(0.9)	(0.4)%	1.8
2024	15.4	13.2	2.1	0.8%	7.3	11.3	14.9	(3.6)	(1.8)%	(1.8)
2025	16.0	13.9	2.0	0.8%	9.3	12.2	15.2	(3.0)	(1.5)%	(4.8)
2026	16.4	14.6	1.8	0.7%	11.2	11.0	15.6	(4.7)	(2.3)%	(9.4)
2027	16.8	15.4	1.3	0.5%	12.5	11.6	16.3	(4.7)	(2.4)%	(14.2)

Table A8.2: Impact of adverse scenario due to multi-year recession as compared with alternative base case. PRSI rates assumed to remain unchanged from current levels. Figures shown in € billions.

As discussed at 9.6.3 the impact of the multi-year recessionary shock is short and sharp with a reduction in projected receipts by year 5 of the shock of 30% compared with the base case projection. The multi-year recession coupled with benefit inflationary pressure results in higher expenditure across all benefit types including SPC and Jobseeker's Benefit, Jobseeker's (Self-Employed) Benefit. The net position is a shortfall, and the shortfall is expressed as a % of the then projected lower GNI* due to the contraction in the economy. Under this shock scenario the Fund is projected to enter deficit as soon as 2023.

Adverse scenario due to Multi-Year Recession and Ukrainian conflict continuing (compared with alternative base case)										
	Alternative base case: reflecting agreed changes & smoothed earnings approach to indexation					Adverse scenario (recession & Ukrainian conflict)				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.3	2.5	1.0%	5.2	12.2	13.2	(1.0)	(0.5)%	1.7
2024	15.4	13.2	2.1	0.8%	7.3	11.1	14.9	(3.8)	(1.9)%	(2.1)
2025	16.0	13.9	2.0	0.8%	9.3	11.8	15.2	(3.4)	(1.7)%	(5.5)
2026	16.4	14.6	1.8	0.7%	11.2	10.4	15.6	(5.3)	(2.6)%	(10.7)
2027	16.8	15.4	1.3	0.5%	12.5	10.7	16.3	(5.6)	(2.8)%	(16.4)

Table A8.3: Impact of adverse scenario due to multi-year recession, conflict in Ukraine continues as compared with alternative base case. PRSI rates assumed to remain unchanged from current levels. Figures shown in € billions.

The impact of the adverse scenario summarised in Table A8.3 is as per the multi-year recessionary scenario summarised in Table A8.2 but with incrementally adverse growth in GNI* and higher unemployment due to the ongoing Ukrainian conflict scenario. The Fund is again projected to first enter into deficit as soon as 2023. The projected balance in the Fund of €12.5 billion by 2027 under the alternative base case scenario is projected to deteriorate to (€16.4 billion).

Adverse scenario due to Multi-Year Recession, Ukrainian conflict continuing, lower growth (versus alternative base case)										
	Alternative base case: reflecting agreed changes & smoothed earnings approach to indexation					Very adverse scenario				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.3	2.5	1.0%	5.2	12.2	13.2	(1.0)	(0.5)%	1.7
2024	15.4	13.2	2.1	0.8%	7.3	11.1	14.9	(3.8)	(1.9)%	(2.1)
2025	16.0	13.9	2.0	0.8%	9.3	11.8	15.2	(3.4)	(1.7)%	(5.5)
2026	16.4	14.6	1.8	0.7%	11.2	10.4	15.6	(5.3)	(2.6)%	(10.7)
2027	16.8	15.4	1.3	0.5%	12.5	10.7	16.3	(5.6)	(2.8)%	(16.4)
2028	17.1	15.8	1.3	0.5%	13.8	10.9	16.6	(5.7)	(2.8)%	(22.1)
2029	17.5	16.4	1.0	0.4%	14.8	11.1	17.1	(6.0)	(2.9)%	(28.1)
2030	17.8	17.1	0.7	0.3%	15.6	11.4	17.6	(6.2)	(3.0)%	(34.3)
2035	19.6	20.5	(0.9)	(0.3)%	14.3	12.5	20.7	(8.1)	(3.6)%	(70.7)
2040	21.5	24.6	(3.1)	(0.9)%	3.3	13.7	24.8	(11.1)	(4.4)%	(120.3)
2045	23.3	29.3	(5.9)	(1.6)%	(20.9)	14.9	29.5	(14.6)	(5.4)%	(186.4)

Adverse scenario due to Multi-Year Recession, Ukrainian conflict continuing, lower growth (versus alternative base case)										
2050	25.3	34.3	(9.1)	(2.2)%	(60.7)	16.1	34.5	(18.4)	(6.2)%	(271.6)
2055	27.4	39.6	(12.2)	(2.8)%	(114.4)	17.5	39.8	(22.3)	(7.0)%	(374.4)
2060	29.8	44.3	(14.5)	(3.0)%	(179.8)	19.0	44.5	(25.5)	(7.4)%	(493.1)
2065	32.3	48.6	(16.4)	(3.2)%	(256.3)	20.6	48.9	(28.3)	(7.5)%	(627.5)
2070	34.8	53.7	(18.9)	(3.4)%	(346.6)	22.2	54.2	(32.0)	(7.9)%	(780.9)
2076	38.1	61.5	(23.4)	(3.8)%	(475.5)	24.3	62.1	(37.8)	(8.5)%	(993.0)

Table A8.4: Adverse scenario due to multi-year recession, conflict in Ukraine continues, permanently lower growth v alternative base case. PRSI rates assumed to remain unchanged from current levels. Figures shown in € billions.

The very adverse scenario summarised in Table A8.4 makes a material impact on the Fund finances over the short and indeed long term due to the assumption of permanently lower growth after the multi-recessionary / Ukraine short term shock. Accumulated deficits are materially larger in both absolute terms and expressed as a proportion of GNI* given in this scenario the economy does not recover from the shock of 2023 - 2027.

Shocks against alternative base case and with PRSI rates increased in line with those calculated under the "full projection period" scenario

Adverse scenario due to Ukrainian conflict (as compared with alternative base case & PRSI "full projection period")										
	Alternative base case & PRSI "full projection period"					**Adverse scenario due to Ukrainian conflict**				
Year	**Receipts**	**Expenditure**	**Net**	**as a % GNI***	**Fund Balance**	**Receipts**	**Expenditure**	**Net**	**as a % GNI***	**Fund Balance**
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	-3.5	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	-3.1	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.3	2.5	1.0%	5.2	14.7	12.3	2.4	1.0%	5.1
2024	15.6	13.2	2.3	0.9%	7.5	15.4	13.2	2.1	0.8%	7.2
2025	16.3	13.9	2.4	0.9%	9.9	16.0	13.9	2.1	0.8%	9.3
2026	16.9	14.6	2.4	0.9%	12.2	16.6	14.5	2.0	0.8%	11.4
2027	17.5	15.4	2.1	0.8%	14.3	17.1	15.4	1.7	0.6%	13.1
2028	18.1	15.8	2.3	0.8%	16.6	17.7	15.8	1.9	0.7%	14.9
2029	18.6	16.4	2.2	0.8%	18.8	18.2	16.5	1.7	0.6%	16.7
2030	19.2	17.1	2.1	0.7%	20.9	18.8	17.2	1.7	0.6%	18.3
2035	22.3	20.5	1.8	0.6%	30.4	21.8	20.6	1.2	0.4%	25.0
2040	25.6	24.6	1.0	0.3%	36.8	25.1	24.7	0.4	0.1%	28.4
2045	29.1	29.3	(0.2)	(0.0)%	38.1	28.5	29.4	(0.9)	(0.2)%	26.0
2050	32.9	34.3	(1.4)	(0.3)%	32.7	32.2	34.5	(2.2)	(0.6)%	16.6
2055	37.2	39.6	(2.4)	(0.5)%	23.7	36.4	39.7	(3.3)	(0.8)%	3.2
2060	42.1	44.3	(2.2)	(0.5)%	15.0	41.2	44.4	(3.2)	(0.7)%	(10.6)
2065	47.5	48.6	(1.2)	(0.2)%	8.7	46.5	48.8	(2.3)	(0.5)%	(22.5)
2070	53.2	53.7	(0.6)	(0.1)%	3.8	52.0	54.1	(2.1)	(0.4)%	(34.3)
2076	60.8	61.5	(0.7)	(0.1)%	(0.0)	59.3	62.0	(2.7)	(0.4)%	(48.9)

Table A8.5: Impact of adverse scenario due to Ukrainian conflict as compared with alternative base case. PRSI rates in line with tthose calculated under the "full projection period" scenario. Figures shown in € billions.

Under the "full projection period" scenario the Fund is projected to remain in surplus throughout (by design the PRSI rates target a nil Fund balance at the end of the period), whereas in the Ukrainian conflict scenario the Fund is projected to enter into deficit in the year 2042. Overall

the accumulated deficit at the end of the projection period is projected to increase from nil billion to €48.9 billion under the Ukrainian conflict scenario.

Adverse scenario due to multi-year recession (as compared with alternative base case & PRSI "full projection period")										
	Alternative base case & PRSI "full projection period"					Adverse scenario due to multi-year recession				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	-1.7%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.1	15.3	(4.2)	-1.8%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.3	2.5	1.0%	5.2	12.3	13.2	(0.9)	(0.4)%	1.8
2024	15.6	13.2	2.3	0.9%	7.5	11.4	14.9	(3.5)	(1.7)%	(1.7)
2025	16.3	13.9	2.4	0.9%	9.9	12.5	15.2	(2.7)	(1.3)%	(4.4)
2026	16.9	14.6	2.4	0.9%	12.2	11.3	15.6	(4.3)	(2.1)%	(8.7)
2027	17.5	15.4	2.1	0.8%	14.3	12.1	16.3	(4.2)	(2.1)%	(12.9)

Table A8.6: Impact of adverse scenario due to multi-year recession as compared with alternative base case. PRSI rates in line with tthose calculated under the "full projection period" scenario. Figures shown in € billions.

As discussed at 9.6.3 the impact of the multi-year recessionary shock is short and sharp with a reduction in projected receipts by year 5 of the shock of 30% compared with the base case projection. The multi-year recession coupled with benefit inflationary pressure results in higher expenditure across all benefit types including SPC and Jobseeker's Benefit, Jobseeker's (Self-Employed) Benefit. The net position is a shortfall, and the shortfall is expressed as a % of the then projected lower GNI* due to the contraction in the economy. Under this shock scenario the Fund is projected to enter deficit as soon as 2023.

Adverse scenario due to Multi-Year Recession and Ukrainian conflict continuing (compared with alternative base case & PRSI "full projection period")										
	Alternative base case & PRSI "full projection period"					Adverse scenario (recession & Ukrainian conflict)				
Year	Receipts	Expenditure	Net	as a % GNI*	Fund Balance	Receipts	Expenditure	Net	as a % GNI*	Fund Balance
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	-3.5	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	-3.1	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.3	2.5	1.0%	5.2	12.2	13.2	(1.0)	(0.5)%	1.7
2024	15.6	13.2	2.3	0.9%	7.5	11.2	14.9	(3.6)	(1.8)%	(2.0)
2025	16.3	13.9	2.4	0.9%	9.9	12.1	15.2	(3.1)	(1.5)%	(5.1)
2026	16.9	14.6	2.4	0.9%	12.2	10.7	15.6	(4.9)	(2.4)%	(10.0)
2027	17.5	15.4	2.1	0.8%	14.3	11.2	16.3	(5.2)	(2.6)%	(15.2)

Table A8.7: Impact of adverse scenario due to multi-year recession, conflict in Ukraine continues as compared with alternative base case. PRSI rates in line with tthose calculated under the "full projection period" scenario. Figures shown in € billions.

The impact of the adverse scenario summarised in Table A8.7 is as per the multi-year recessionary scenario summarised in Table A8.6 but with incrementally adverse growth in GNI* and higher unemployment due to the ongoing Ukrainian conflict scenario. The Fund is again projected to first enter into deficit as soon as 2023. The projected balance in the Fund of €14.3 billion by 2027 under the "full projection period" scenario is projected to deteriorate to (€15.2 billion).

Adverse scenario due to Multi-Year Recession, Ukrainian conflict continuing, lower growth (compared with alternative base case & PRSI "full projection period")										
	Alternative base case & PRSI "full projection period"					Very adverse scenario				
Year	**Receipts**	**Expenditure**	**Net**	**as a % GNI***	**Fund Balance**	**Receipts**	**Expenditure**	**Net**	**as a % GNI***	**Fund Balance**
2020	10.6	14.1	(3.5)	(1.7)%	0.5	10.6	14.1	(3.5)	(1.7)%	0.5
2021	11.8	14.9	(3.1)	(1.3)%	0.0	11.8	14.9	(3.1)	(1.3)%	0.0
2022	14.2	11.5	2.7	1.1%	2.7	14.2	11.5	2.7	1.1%	2.7
2023	14.8	12.3	2.5	1.0%	5.2	12.2	13.2	(1.0)	(0.5)%	1.7
2024	15.6	13.2	2.3	0.9%	7.5	11.2	14.9	(3.6)	(1.8)%	(2.0)
2025	16.3	13.9	2.4	0.9%	9.9	12.1	15.2	(3.1)	(1.5)%	(5.1)
2026	16.9	14.6	2.4	0.9%	12.2	10.7	15.6	(4.9)	(2.4)%	(10.0)
2027	17.5	15.4	2.1	0.8%	14.3	11.2	16.3	(5.2)	(2.6)%	(15.2)
2028	18.1	15.8	2.3	0.8%	16.6	11.5	16.6	(5.1)	(2.5)%	(20.2)
2029	18.6	16.4	2.2	0.8%	18.8	11.9	17.1	(5.2)	(2.5)%	(25.5)
2030	19.2	17.1	2.1	0.7%	20.9	12.3	17.6	(5.3)	(2.5)%	(30.8)
2035	22.3	20.5	1.8	0.6%	30.4	14.2	19.7	(5.5)	(2.4)%	(60.4)
2040	25.6	24.6	1.0	0.3%	36.8	16.3	23.6	(7.3)	(2.9)%	(98.8)
2045	29.1	29.3	(0.2)	(0.0)%	38.1	18.6	28.1	(9.5)	(3.5)%	(148.7)
2050	32.9	34.3	(1.4)	(0.3)%	32.7	21.0	32.9	(11.9)	(4.0)%	(212.0)
2055	37.2	39.6	(2.4)	(0.5)%	23.7	23.7	37.9	(14.1)	(4.4)%	(286.3)
2060	42.1	44.3	(2.2)	(0.5)%	15.0	26.9	42.3	(15.5)	(4.5)%	(368.8)
2065	47.5	48.6	(1.2)	(0.2)%	8.7	30.3	46.5	(16.2)	(4.3)%	(458.4)
2070	53.2	53.7	(0.6)	(0.1)%	3.8	33.9	51.6	(17.7)	(4.3)%	(557.4)
2076	60.8	61.5	(0.7)	(0.1)%	(0.0)	38.8	59.0	(20.2)	(4.6)%	(689.6)

Table A8.8: Adverse scenario due to multi-year recession, conflict in Ukraine continues, permanently lower growth v alternative base case. PRSI rates in line with tthose calculated under the "full projection period" scenario. Figures shown in € billions.

The very adverse scenario summarised in Table A8.8 makes a material impact on the Fund finances over the short and long term due to the assumption of permanently lower growth after the multi-recessionary / Ukraine short term shock. Accumulated deficits are materially larger in both absolute terms and expressed as a proportion of GNI* given in this scenario the economy does not recover from the shock of 2023 - 2027.

Appendix 9: Scope of Services

Extract from the RFT for the actuarial review of the Social Insurance Fund 2020 dated January 2021 as follows:

4.2 Technical requirements summary

The Contracting Authority invites proposals from suitably qualified external service providers to undertake the Actuarial Review of the Social Insurance Fund as at 31 December 2020. While the Social Insurance Fund was in surplus from 2016 to 2020, it went into deficit in 2021 mainly due to incurring significantly increased expenditure on income supports to mitigate the adverse impact of the Covid-19 pandemic.

The base period of projection under the Review will be specified by the Contracting Authority. For reference, the base period for the 2015 Actuarial Review was 2016-2071.

The successful Tenderer will be required to:

a) Produce the actuarial analysis specified in part 4.3.
   With respect to the State Pension, this actuarial analysis should be conducted both on a no-change policy basis **and** separately, on the basis of Pensions Commission recommendations applying. The particular basis for any application of Pensions Commission recommendations will be specified by the Contracting Authority at contract award stage. However, for the purposes of responding to and providing costs for this RFT, Tenderers can apply the Pensions Commission's recommended package.
b) Produce a draft report outlining the results of the actuarial analysis detailed in part 4.3, including a detailed presentation of the data and methodologies used. The report must include explicit reconciliations between the 2015 Actuarial Review and the 2020 Actuarial Review and the main results of the 2020 Actuarial Review.
c) The final report must be submitted for review to the Contracting Authority by the last working day in June 2022 (Thursday 30th).

The full scope of the actuarial project work is defined in parts 4.3 to 4.5 below. Tenderers must specify in detail how their proposal will meet these requirements.

4.3 Scope of actuarial modelling and reporting for the 2020 Actuarial Review

4.3.1 Actuarial basis

All actuarial modelling is to be done on an 'open group' basis and in line with relevant national and international actuarial standards.

Where relevant, modelling and analysis should comply with all relevant actuarial guidance including the International Standard of Practice 2 issued by the International Actuarial Association. Tenderers should note in particular the requirement to comply with Section 3.2.2 of this standard.

4.3.2 Expenditure

The expenditure analysis below should be carried out in detail for all benefits that are in scope for this Review, as specified in part 4.4.1 below. Summary projections of other relevant expenditure (e.g. administration) should also be provided.

a) Absolute Projection of future Fund expenditure (disaggregated on an annual basis for an initial period of 10 years and disaggregated every five years thereafter) encompassing both long term and short-term benefits.
b) Distributional projection of expenditure (disaggregated on an annual basis for an initial period of 10 years and disaggregated every five years thereafter) as a percentage of the overall Fund Expenditure under each scheme.
c) Calculation of the net contingent assets/liabilities of the Fund, discounted to present values;
d) Sensitivity analysis based on alternative key assumptions including the discount rate (for example a range of discount values).

4.3.3 Income

The Income projections detailed here must include:

a) Absolute projection (disaggregated on an annual basis for an initial period of 10 years and disaggregated every five years thereafter) of the Fund's PRSI Income.
b) Distributional projection (disaggregated on an annual basis for an initial period of 10 years and disaggregated every five years thereafter) of the number of payees by Class of PRSI payments.
c) Sensitivity analysis based on alternative key assumptions.

4.3.4 Actuarial Balance Sheet and Reconciliation to 2015 Actuarial Review

Produce an overall Actuarial Balance Sheet for the Social Insurance Fund at end-2020, on both a no-policy-change and break-even basis.

Provide a statistically robust reconciliation between the Actuarial Balance Sheet from the 2015 Actuarial Review and the 2020 Actuarial Balance Sheet, taking into account income and expenditure along with valuation, demographic, macroeconomic and policy changes between the two dates.

4.3.5 Break Even Rates

To determine break-even contribution rates (Employee, Employer, Self Employed and Voluntary Contributor) to eliminate the projected shortfall between income and expenditure (if any):-

a) With no Exchequer subvention; and
b) With an Exchequer subvention of 10%, 25% or of 33%.
c) Separate tables should be provided for total SIF expenditure and State Pension (Contributory) expenditure only.

4.3.6 Multiple Indexation Approach

To allow for comparison between approaches to indexing benefits, the Review must include projections indexed based on the following:

a) Consumer Price Index and HICP
b) Real Earnings Growth Index (in line with PRSI)
c) Index calculated to retain 34 % of National Average Earnings at retirement (both including and excluding irregular earnings and overtime).

The Review should include an optimum weighted average approach to indexing benefits.

4.3.7 Value for Money

The Review must propose “value for money” or “money’s worth” indicators for sample/proxy contributors to the Social Insurance Fund. These indicators should provide the value for money for all social insurance benefits, for long-term and short-term benefits, and separately for the State Pension (Contributory). These indicators can be based on the ratio of lifetime benefits to lifetime contributions for the sample cases, and/or through other methods to be specified in the proposal. The sample cases evaluated should highlight differences between various groups of contributors and beneficiaries, specifically based on:

a) Demographics (age group, gender)
b) PRSI Class
c) Level of Income
d) Varying Contribution History

The value for money impact of voluntary contributions, credited contributions and the options for self-employed contributors (part 4.3.8) should also be assessed across the dimensions above.

4.3.8 Class S (self-employed) Options

Project expenditure (disaggregated annually from 2023 to 2030 and then at 5 yearly intervals) for Class S self-employed contributors to receive each of the benefits for which they currently do not qualify (part 4.4.2).

Project PRSI contribution rates required to provide each of these benefits to Class S contributors on a revenue neutral basis.

4.3.9 Frequency/Propensity Distribution Projection

For the purposes of Expenditure Projection, an implicit calculation of the future number of claimants at different time periods under each scheme is required. The Contracting Authority requires this projected propensity of claimants under each benefit to be displayed as a separate output, by age bands, income brackets, contribution rate bands, sex and any other population cohort that the successful Tenderer can build in consultation with the Contracting Authority. The Contracting Authority also requires the number of new claimants in each scheme to be displayed, where possible.

For the purposes of Income Projection, an implicit calculation of the distribution of contributors by PRSI Class needs to be produced. In addition to distribution by PRSI Class, the Review should also aim to provide a more distilled version of this distribution encompassing, but not restricted to, age bands, income brackets, sex and any other population cohort that the successful Tenderer can build in consultation with the Contracting Authority.

Appendix 10: Glossary

Term		Description
Ageing Working Group	AWG	Working group of the European Commission dealing in matters of ageing populations and sustainability
Break even Contribution Rate		The level of contributions needed to ensure income equal to expenditure
Central Statistics Office	CSO	National Office for collection of economic and social information
Consumer Price Index	CPI	The CPI is the official measure of inflation for Ireland and is published monthly by the CSO.
European Central Bank	ECB	The ECB is the central bank of the 19 European Union countries which have adpted the euro. Its main aim is to keep prices stable.
Exchequer Subvention		Payment to the Fund to offset shortfalls
Harmonised Index of Consumer prices	HICP	The HICP is an index of consumer prices that has been harmonised to allow comparisons across Eurozone countries.
Increase for Qualified adult	IQA	An increase for a Qualified Adult (IQA) is payable in respect of a person who is wholly or mainly maintained by the claimant and is either a spouse/Civil Partner/Cohabitant or a person over 16 years of age who is caring for a qualified child of the claimant.
Jobseeker's Benefit	JB	Income aid for short term unemployed
Modified GNI / GNI*	GNI*	Modified GNI / GNI* is an indicator that was recommended by the Economic Statistics Review Group and is designed to exclude globalisation effects that are disproportionally impacting the measurement of the size of the Irish economy.
Pay as you go basis	PAYG	A system of meeting costs as they arise rather than when they are incurred
Pay Related Social Insurance	PRSI	Workers earning an income (and their employers) pay contributions to the Social Insurance Fund. In return, they are covered for certain benefits, such as the State Pension (Contributory).
Social Insurance Fund	SIF	The Fund from which Social Insurance benefits are paid and into which PRSI contributions are made. We use the terms "SIF" and "Fund" interchangeably throughout the report.
Stability Programme Update	SPU	Update to the medium-term fiscal plans
State Pension (Contributory)	SPC	Basic State Pension available through contributions
State Pension (Non-Contributory)	SPNC	State Pension Non-Contributory is a means tested payment for people who do not qualify for a State Pension (Contributory) or who only qualify for a reduced rate contributory pension based on their social insurance record.
State Pension Age	SPA	The age at which State Pension (Contributory) is available
Total Contribution Approach	TCA	Formula for calculating the rate of SPC entitlement as an alternative to the yearly average approach, pension rate is based on total contributions / credits.
Weighted Average Pension		The average overall pension amount "weighted" by the number of individuals in receipt of a given pension amount
Widow's/Widower's and Surviving Civil Partner's Benefit	WPC	Payment for surviving spouses of deceased workers or pensioners
Yearly Average	YA	Formula for calculating the rate of SPC entitlement.The rate is based on the average contributions from the beginning of employment to SPA

Appendix 11: Reliances and Limitations

1 We relied on data provided to us by the Department in 2022. We performed overall reasonableness checks on the figures but are not able to give any warranty on the quality of the data used. We have assumed that the factual material and information provided to us, both in written and verbal form, provides an accurate representation of the Fund.

2 The long-term projections are not forecasts, they are subject to increasing uncertainty over time, and the results are strongly influenced by the underlying assumptions.

3 It must therefore be recognised that actual results will differ from those inherent in the values given. We caution therefore that the eventual outcome is likely to vary, perhaps materially, from our projected outcome.

4 The Actuarial Review is based on commonly accepted actuarial techniques applied in a consistent manner.

5 This Report is delivered subject to the agreed written terms of KPMG's engagement. Our report is designed to meet the agreed requirements of the Department. Any party who chooses to rely on our report (or any part of it) will do so at its own risk. To the fullest extent permitted by law, KPMG will accept no responsibility or liability in respect of our report to any other party. Judgements as to the conclusions drawn in this report should be made only after studying the report in its entirety. We assume that users of this report will seek explanation and / or amplification of any part of the report which is not clear.