

17 Actuarial review of the Social Insurance Fund

- 17.1** The Minister for Social Protection is required by law to commission and publish an actuarial review of the financial condition of the Social Insurance Fund (the Fund) at least every five years.¹ The purpose of the review is to assess the extent to which the contributions to the Fund are likely to be able to meet the projected payment of benefits in the future. The review of the Fund's position as at 31 December 2020 included projections from 2021 to 2076.²
- 17.2** The report 'base case' (best estimate) projections for annual Fund receipts and expenditure are shown in Figure 17.1. The review projects that there will be an increasing annual shortfall in the Fund from 2034 to the end of the projected period (2076) and that Exchequer subventions will be required in the long-term to meet ongoing expenditure requirements in the absence of any changes to Pay Related Social Insurance (PRSI) rates. The review projects a shortfall of €10 billion a year by 2050, rising to €16 billion a year by 2060 and €20 billion a year in 2070 (when projected receipts would cover only 63% of projected expenditure).³ The shortfall reflects the amount that the Fund would need to receive in annual subvention from general taxation in the year.
- 17.3** In terms of the overall economic output of the State, the Fund shortfall is expected to rise from 2.4% of GNI* in 2050, to 3.3% in 2060 and 4.1% in 2076.^{4,5}
- 17.4** The main component of Fund expenditure is pension-related expenditure, which is projected to rise from 73% of Fund expenditure in 2022 to 80% in 2035 and 85% by 2050.

1 Required under Section 10 of the Social Welfare Consolidation Act 2005.

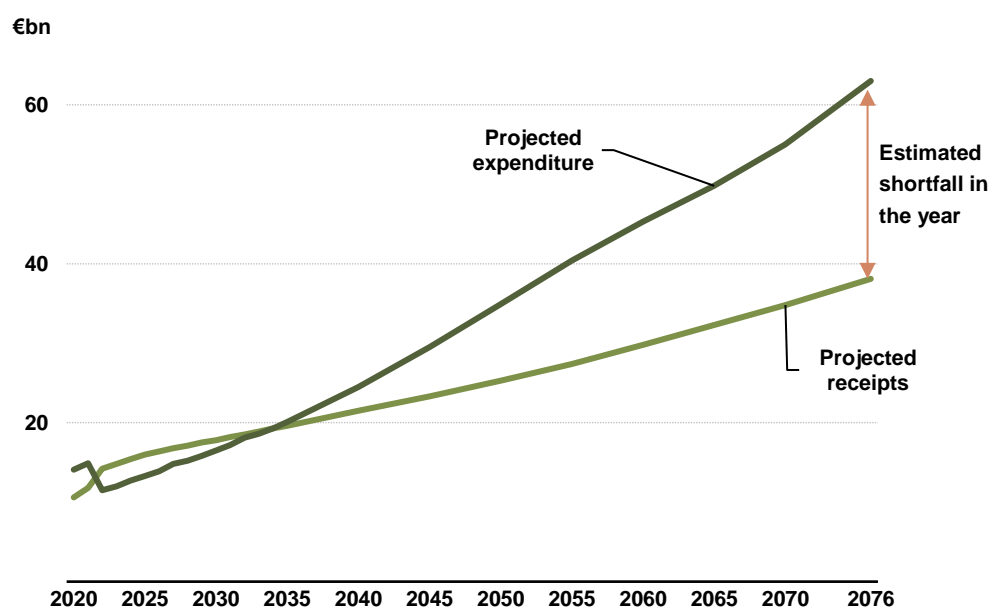
2 The review was completed in September 2022.

3 These values are in 2022 real price terms.

4 The Central Statistics Office (CSO) defines GNI* as an indicator designed to exclude globalisation effects that are disproportionately impacting the measurement of the size of the Irish economy.

5 The review states that in practice, the 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. Therefore, it must be recognised that actual results will differ, perhaps materially, from those inherent in the values given.

Figure 17.1 Projected Fund receipts and expenditure, 2020 to 2076^a



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

Note: a The review included a projection for each year until 2035 and every five years thereafter.

Assumptions used in the review

17.5 The expected Fund receipts and expenditure are predicated on the assumptions made for factors such as economic growth, inflation, the number of people working and the number of people receiving benefits. Figure 17.2 shows how the review projected the key assumptions would change over the course of the review period (to 2076).

Figure 17.2 Key assumptions used in Fund actuarial review^a

Factor	2023	2024	2025	2026 to 2076
Economic and labour assumptions				
GDP	4.4%	4%	3.8%	1.5% to 1.8%
GNI*	3.1%	3.2%	3.3%	1.5% to 1.8%
Inflation	3%	2.2%	2.1%	2%
Real earnings growth	2.3%	2.2%	2.1%	1.2% to 1.5%
Employment growth	2.1%	1.7%	1.7%	0% to 0.9%
Unemployment rate	5.4%	5.2%	4.9%	6.4% to 6.8%
Demographic assumptions				
Population	5 million in 2020, rising to 5.9 million in 2040, 6.4 million in 2060 and 6.6 million by 2076			
Net immigration	33,000 in 2019, falling thereafter to 19,000 in 2030, 14,000 in 2050 and 10,000 in 2070			
Fertility rate	1.78 to 1.81 in the period 2019 to 2076			
Life expectancy at birth	In 2019, males = 81.1, females = 84.8, by 2050 m/f = 84.6/88.3, by 2070 m/f = 86.8/90.4			
Pensioner support ratio	4.4 in 2020, falling thereafter to 2.9 in 2040, 2.1 in 2060 and 1.9 by 2076			

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

Note: a The review used 2022 estimates for income and expenditure and short-term (2023 to 2025) 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 and later years) were based on projections by the European Commission which formed the basis for the *2021 Ageing Report*. Mortality improvement factors are based on Eurostat population projections. Other assumptions used were published by the Department of Finance.

Assumptions used in prior Fund reviews

17.6 Since 2000, actuarial reviews of the financial position of the Fund have been conducted every five years. The reviews have consistently included some assumption categories, while others have varied (see Annex 17A). The format of the reviews has also evolved, with the later reviews providing more detail than the review in 2000.

17.7 Certain indicators are projected to fluctuate in the short-term, and then to move to a long-term rate that has been consistent in the reviews. These include

- long term price inflation at 2% (other values used in the shorter term) per annum
- long-term real earnings growth at 1.5% per annum
- unemployment rate (in the longer term) of 6.2% to 6.4%
- fertility rates (in the longer term) of 1.75 to 2 children per woman.

17.8 Key changes in longer-term assumptions were

- real GDP of 1.5% to 1.8% in the 2020 review, compared to 1.5% to 2.2% in the 2015 review; in 2020, the review used GNI* growth as a key assumption
- net migration projections fluctuated between negative 21,500 (net outflow) and 40,000 (net inflow) across reviews.

Assumptions used by other Irish public sector entities

17.9 Public sector bodies with pension schemes are required to conduct reviews of the financial position of the pension schemes — this includes a range of bodies audited by the Comptroller and Auditor General, such as universities, the National Transport Authority and Teagasc.

17.10 For the purposes of this examination, we compared the assumptions used by over 30 public sector bodies in projecting pension scheme liabilities with the assumptions for the 2020 review of the Fund, as shown in Figure 17.3. The analysis shows that the assumptions used in the review of the Fund are within the range of values used by public sector bodies generally.

Figure 17.3 Comparison of assumptions used by the Fund and public sector bodies

Assumption	Fund long-term assumption	Range of assumptions by public sector bodies ^c
Rate of salary increase	3.2% to 3.5% ^a	2.7% to 4.65%
Rate of inflation	2%	1.9% to 2.7%
Discount rate	3.5% ^b	2.25% to 4.3%

Source: Office of the Comptroller and Auditor General and the Actuarial Review of the Social Insurance Fund as at 31 December 2020

- Notes:
- a The review's rate of salary increase (3.2% to 3.5%) comprises the 'real' earnings growth rate (1.2% to 1.5%) plus the impact of expected inflation (2%).
 - b The review's nominal discount rate (3.5%) comprises a 'real' discount rate (1.5%) plus the impact of expected inflation (2%).
 - c The assumptions used by other public sector bodies were extracted from accounts with a financial year ending in 2022.

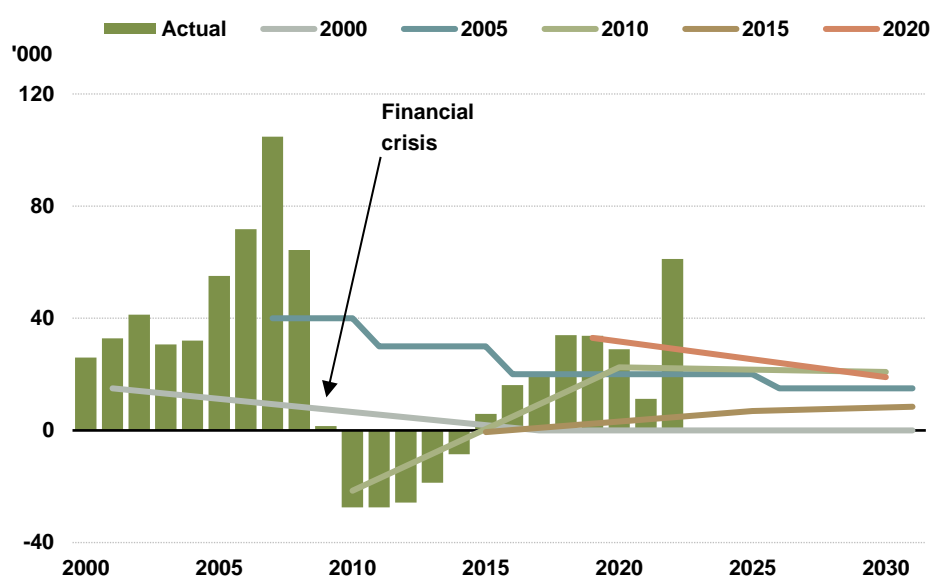
Pensioner support ratio

17.11 The pensioner support ratio is a key measure of the ability of the Fund to meet its obligations and reflects the impact of fertility rates, life expectancy and other variables. This is projected to decline significantly, from around 4.4 insured contributors per pensioner in 2020, to around 2.3 insured contributors per pensioner in 2050. As a result, pension-related expenditure is projected to rise from 59% of total PRSI receipts in 2022, to 81% by 2035 and 117% by 2050.

Migration projections

- 17.12** The review states that high historical volatility over time and between countries makes assumptions on migration the most difficult methodological aspect of demographic projections — this view is supported by Figure 17.4, which shows the migration projections included in each review. 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.

Figure 17.4 Annual net migration projections, by review date, and actual migration 2000 to 2030



Source: Actuarial reviews of the Social Insurance Fund

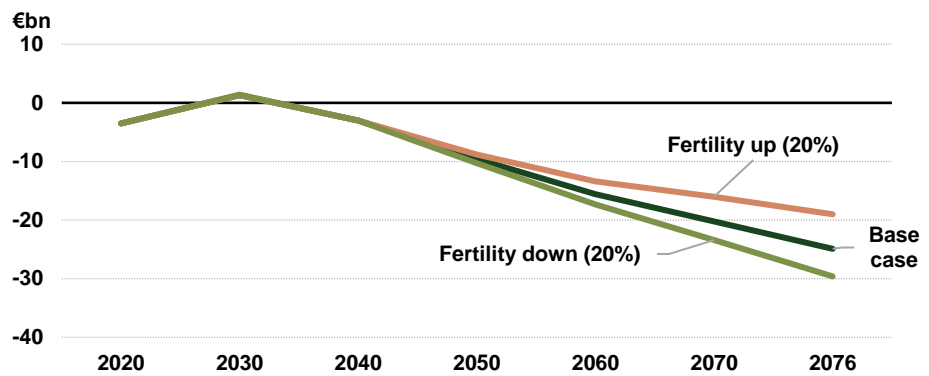
Sensitivity analysis

- 17.13** Because of inherent uncertainty in assumptions underpinning long-run projections, the review included a number of sensitivity tests in addition to the base case, so as to quantify the responsiveness of projection tests results to changes in key underlying assumptions.
- 17.14** The macroeconomic and demographic scenarios and key modelling assumptions varied were
- fertility changes
 - life-expectancy
 - migration
 - labour market
 - earnings growth rates
 - adverse scenarios and shocks (for example the impact of conflict in Ukraine).
- 17.15** Changes to fertility rates and real earnings growth rates resulted in the most significant impact on projections.

Fertility rates

17.16 The fertility rate in Ireland is projected to be broadly unchanged, rising gradually from 1.78 in 2019 to 1.81 by 2076, which is below the natural replacement rate.¹ As shown in Figure 17.5, if the fertility rate was 20% higher for the duration of the projection period, the projected deficit in 2076 is €19 billion rather than the €24.9 billion assumed in the base case — the deficit reduces because of an expectation of more individuals working and contributing to the Fund.

Figure 17.5 Sensitivity of projected Fund deficit to change in fertility rates



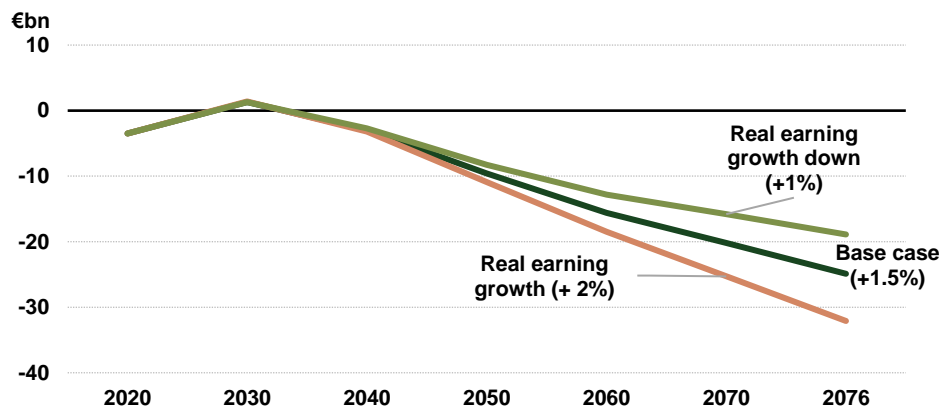
Source: Actuarial Review of the Social Insurance Fund as at 31 December 2020

Real earnings growth

17.17 Changes to assumptions around real earnings growth have the biggest projected impact on the Fund. While projected earnings growth would result in higher contributions, this is linked to growth in pension payment levels.

17.18 The base case assumption is that, in the longer term, real earnings grow at an annual rate of 1.5%. By comparison, if real earnings were to grow at 2% per annum instead, the projected deficit in 2076 is €32.1 billion rather than the €24.9 billion deficit projected under the base case. However, as economic growth (in terms of GNI*) is assumed to increase (or decrease) at the same rate as real earnings, the deficit as a percentage of GNI* does not change.

Figure 17.6 Sensitivity of projected Fund deficit to change in real earnings growth



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

¹ Replacement level fertility is the level of fertility at which a population exactly replaces itself from one generation to the next. In developed countries, replacement level fertility is taken as 2.1 children per woman.

Other variables

17.19 The projected Fund deficit is impacted to a lesser extent when other assumptions are varied. For example,

- changes to life expectancy (increase of one year or decrease of two years) results in a 2076 impact of around €2 billion increased/reduced deficit
- changes to projected migration – up 50% or down 50% – result respectively by 2076 in a lower deficit of €5 billion or higher deficit of €3.4 billion
- labour market estimate variances were that the employment rate would be 2% higher in the long term (reducing the 2076 deficit by around €0.9 billion) or 2% lower (increasing the deficit by €0.9 billion); the review also estimated that a 10% increase in the employment rate for those aged 55 to 74 would reduce the deficit in 2076 by €1.2 billion.

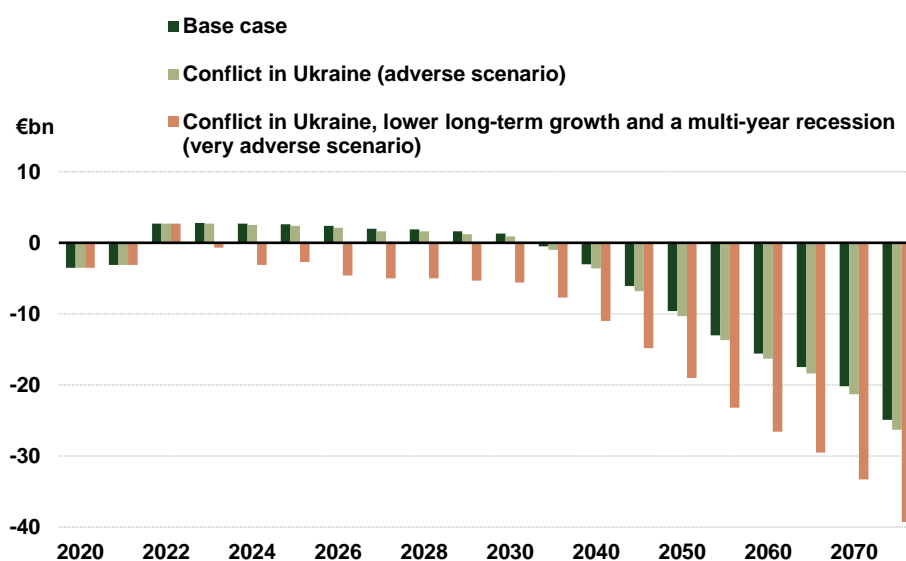
Adverse scenarios and shocks

17.20 In reality, the factors that influence the financial position of the Fund are interconnected in many ways, and are more likely to move in various combinations. For this reason, the impacts of various potential adverse scenarios (shocks) were also calculated as part of the actuarial review. The scenarios considered were

- the conflict in Ukraine resulting in higher inflation, higher unemployment and lower economic growth¹
- a multi-year (2023 to 2027) recession, resulting in lower economic growth, higher unemployment and lower PRSI receipts
- a multi-year recession and the conflict in the Ukraine continuing
- a very adverse scenario of the Ukraine conflict continuing and the recession resulting in permanently lower long-term economic growth.

17.21 The very adverse scenario results in an additional annual shortfall of €14.4 billion in 2076 (see Figure 17.7).

Figure 17.7 Impact of two adverse scenarios on the Fund, 2020 to 2076

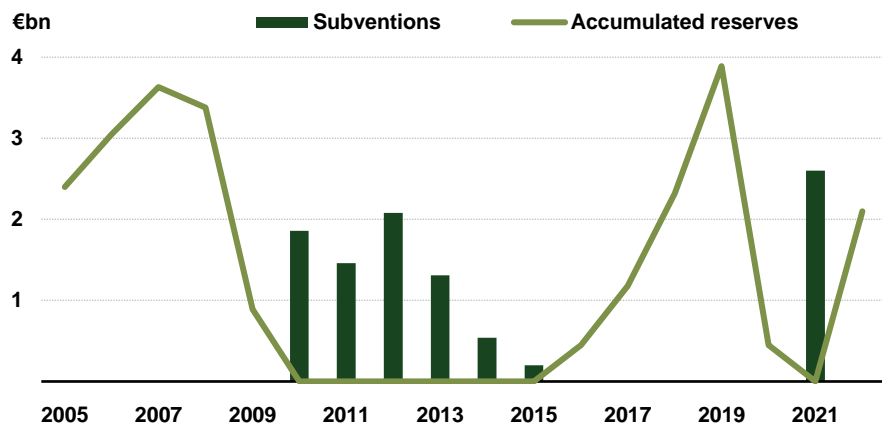


¹ The review is based on estimates of the impact included in the Department of Finance's *Stability Programme Update*.

Fund subventions in recent years

- 17.22** Where Fund expenditure exceeds receipts in any year, there is a reduction in the value of Fund reserves. Where Fund reserves have been exhausted, a subvention has been paid from the Vote to ensure that benefit entitlements continue to be paid.
- 17.23** The accumulated reserves of the Fund were depleted in 2008-2010, following the financial crisis. In the years 2010 to 2015, Exchequer subventions totalling €7.4 billion were made to the Fund. The Fund returned to surplus in 2016 and by the end of 2019 had accumulated reserves of €3.9 billion. All of those reserves were used in 2020 and 2021 to deal with the impact of the Covid-19 pandemic, and a subvention of €2.6 billion was required in 2021. In 2022, receipts into the Fund exceeded expenditure by around €2.1 billion.

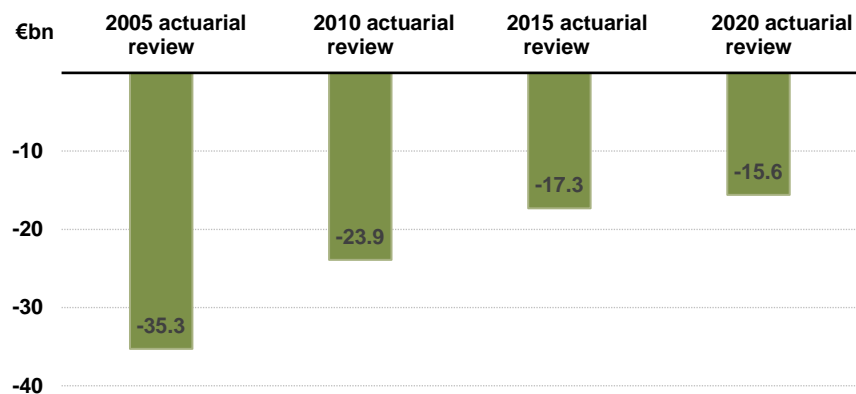
Figure 17.8 Accumulated reserves and subventions, 2005 to 2022



Source: Department of Social Protection. Analysis by the Office of the Comptroller and Auditor General.

- 17.24** Each actuarial review of the Fund published to date has projected an increasing annual shortfall in the resources of the Fund over the long term, reflecting the underlying trend of increasing demographic pressures. However, the rate of increase in the projected Fund shortfall — as indicated in the base case in each projection — has moderated significantly over the successive reviews (see Figure 17.9). The projections reflect the impact of legislated changes in policy and the use of different assumptions reflecting the latest view on long-term demographic, labour market and economic trends.

Figure 17.9 Fund shortfall projections, in the year 2060, by review



Source: Actuarial reviews of the Social Insurance Fund

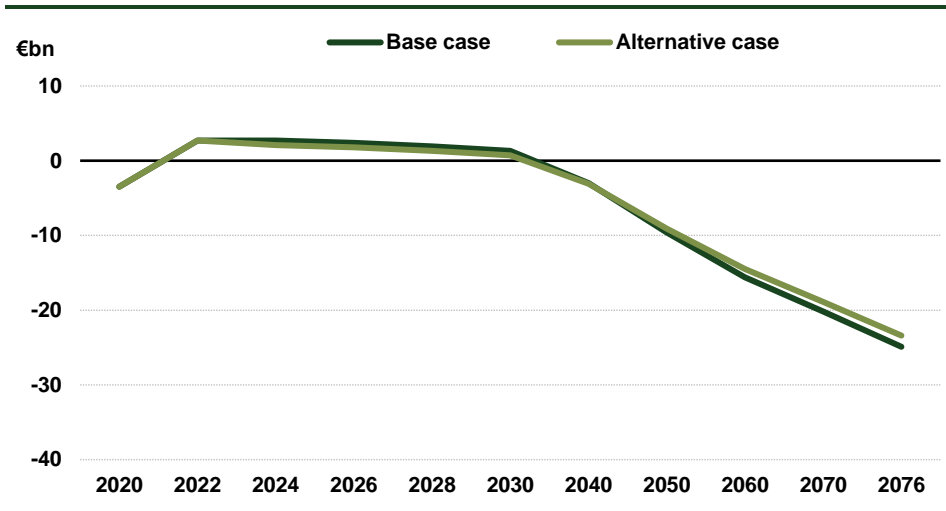
Reform of State pension system

17.25 In September 2022, the Minister for Social Protection announced reforms (see Annex 17B) to the State pension system including

- a move to a ‘total contributions’ approach, where the total number of PRSI contributions paid, instead of when they were paid, is used for calculation of individual pension entitlements¹
- introduction of a new flexible pension age.²

17.26 The review assessed the impact on future Fund deficits of the pending changes included in the State pension reform announcement, as well as introducing smoothed earnings benchmarking of pension payments.³ The review projected that the annual deficit, by 2076, will be around €1.5 billion less under the new arrangements (alternative case).

Figure 17.10 Impact of pension reforms announced September 2022



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

Conclusions

¹ The move to a total contribution approach was recommended by the Pension Commission and is intended to align a person's contributory pension more closely with the contributions they make. The move is to commence in January 2025 on a phased basis over 10 years.

² From January 2024, people will have the option to continue working up until the age of 70 in return for a higher pension.

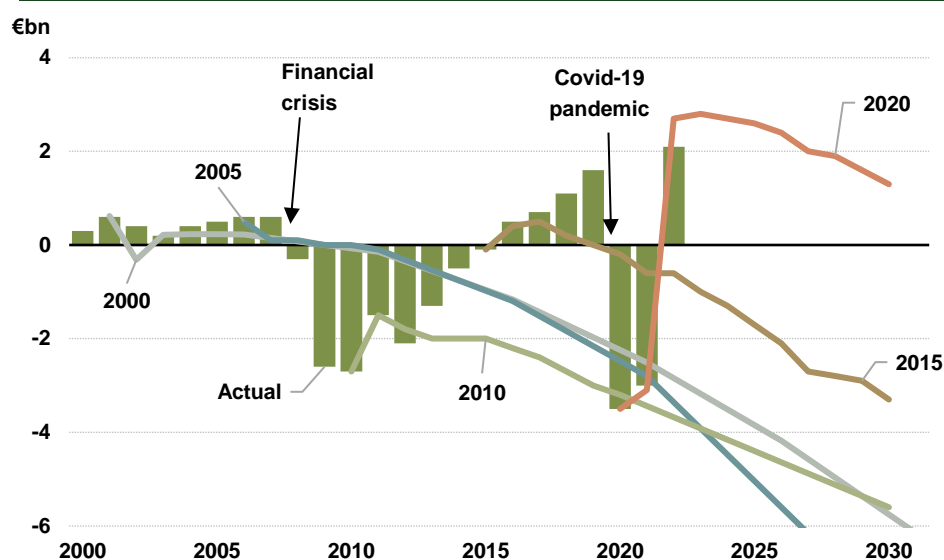
³ Smoothed earnings benchmarking of pension payments links future increases in pension payments to increases in average earnings.

17.27 The periodic actuarial review of the Social Insurance Fund (the Fund) provides a detailed projection of the Fund's receipts and expenditure that is necessary to inform discussion about the expected long-term sustainability of the Fund.

17.28 The assumptions used by the 2020 review utilise projections by Eurostat and the European Commission including those used by the Department of Finance in its *Stability Programme Update*. The review assumptions are within the range of assumptions used by other public sector bodies when conducting reviews to estimate the future cost of their pension liabilities.

17.29 The projections of each review reflect the position and policy in place at a point in time. Assumptions vary over time to reflect changes in policy as well as macroeconomic changes. The most recent review states that long-term projections are unlikely to be borne out in practice and emphasises that focus should be placed on the relative trends and the difference in outcomes under various scenarios.

Figure 17.11 Actual and projected Fund excess/shortfall of receipts, 2000 to 2030^a



Source: Actuarial reviews of the Social Insurance Fund

Note: a The data for each review commences at the known value for the year of the review (e.g. 2020) as the reviews are published up to two years after the end of that period.

- 17.30** When previous projections are compared to outturns, the Fund appears to have performed better in the past decade than was projected in the reviews for 2000, 2005 and 2010, notwithstanding the impacts of the 2008 financial crisis and of Covid-19 (see Figure 17.11).
- 17.31** While the projections for the performance of the Fund have been improving in the short-term, the latest review indicates there will be an increasing annual shortfall from around 2034, and that a recurrent and increasing subvention from the Vote to the Fund will be required, all other things being equal, from around 2043 onwards.

Annex 17A Assumptions used in reviews

Assumption	2000	2005	2010	2015	2020
Economic and labour assumptions					
GDP				✓	✓
GNP		✓	✓		
GNI*					✓
Price inflation	✓	✓	✓	✓	✓
Real earnings growth	✓	✓	✓	✓	✓
Unemployment	✓			✓	✓
Employment		✓	✓	✓	✓
Demographic assumptions					
Life expectancy	✓	✓	✓	✓	✓
Net migration	✓	✓	✓	✓	✓
Fertility	✓	✓	✓	✓	✓

Source: Actuarial reviews of the Social Insurance Fund. Analysis by the Office of the Comptroller and Auditor General.

Annex 17B State pension system reforms announced in September 2022

- maintaining the State pension age 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 — claimants who had 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 State pension age
- 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 the 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.

