



Government
Actuary's
Department

Guernsey Long-term Care Insurance Fund

Actuarial Review as at 31 December 2019

5 January 2021

Martin Clarke



LONG-TERM CARE INSURANCE (GUERNSEY) LAW 2002

REPORT BY THE GOVERNMENT ACTUARY ON THE OPERATION OF THE LONG-TERM CARE INSURANCE (GUERNSEY) LAW 2002 IN THE PERIOD 1 JANUARY 2015 TO 31 DECEMBER 2019

To the President and Members of the Committee *for* Employment & Social Security:

Section 26 of the Long-term Care Insurance (Guernsey) Law 2002 (as amended) (“the Law”) provides for a review of the operation of the Law at least every five years. The purpose of the review is to consider the financial condition of the Guernsey Long-term Care Insurance Fund and the adequacy of the allocation payable under section 101A of the Social Insurance Law and the States Long-term Care Insurance Annual Grant payable into the Fund. The Government Actuary’s previous review covered the period of five years up to 31 December 2014.

At the request of the Committee, I have carried out a review covering the five-year period from 1 January 2015 to 31 December 2019. My report on this review is set out in the following pages.



Martin Clarke FIA
Government Actuary

5 January 2021

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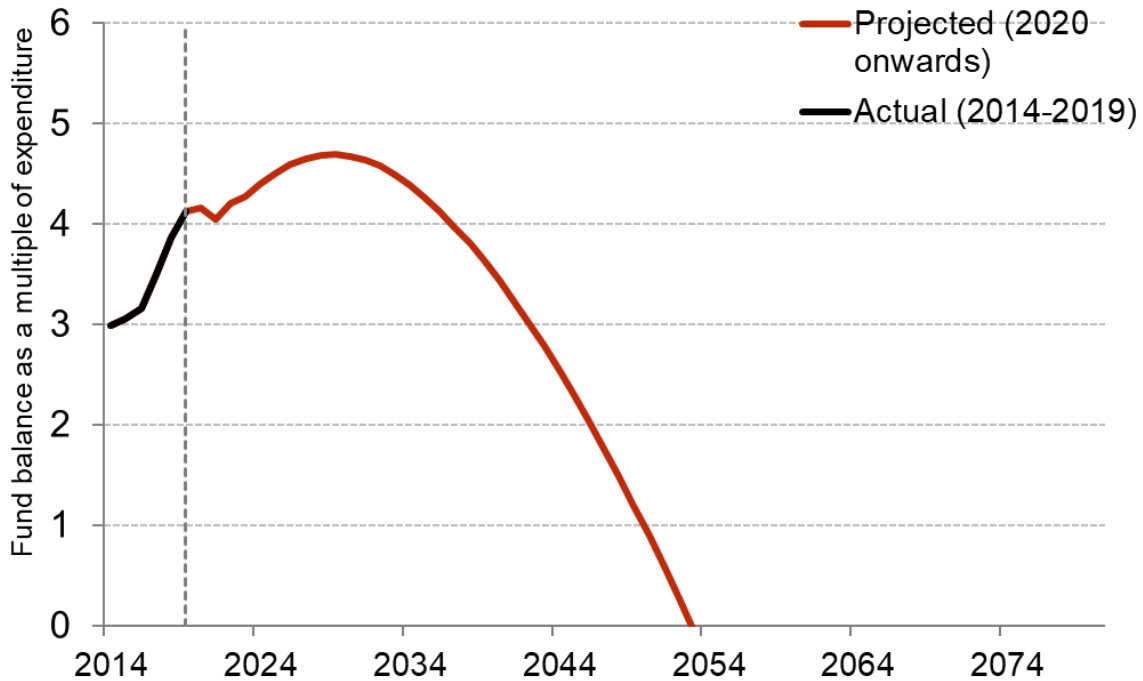
1. Executive Summary

- 1.1 The purpose of this report is to review the financial condition of the Guernsey Long-term Care Insurance Fund (“the Fund”) and the adequacy of the contributions payable to the Fund.
- 1.2 This section sets out the key findings from my review. The later sections of this report give more details of the results, and the appendices provide further background on the Fund and how I have carried out the review.
- 1.3 As part of the Supported Living and Ageing Well Strategy: Extending the Life of the Long-term Care Insurance Scheme, the States passed a number of resolutions on long-term care benefits at their meeting on 19 August 2020. Following discussion with the social security department, I have included allowance for a number of these resolutions, as set out in Appendix A.
- 1.4 In addition, Resolution 11 agreed in principle that the Fund should be extended to cover care provided at home. This resolution is not included in the main projections, but I have considered its impact in Section 3.

Key findings

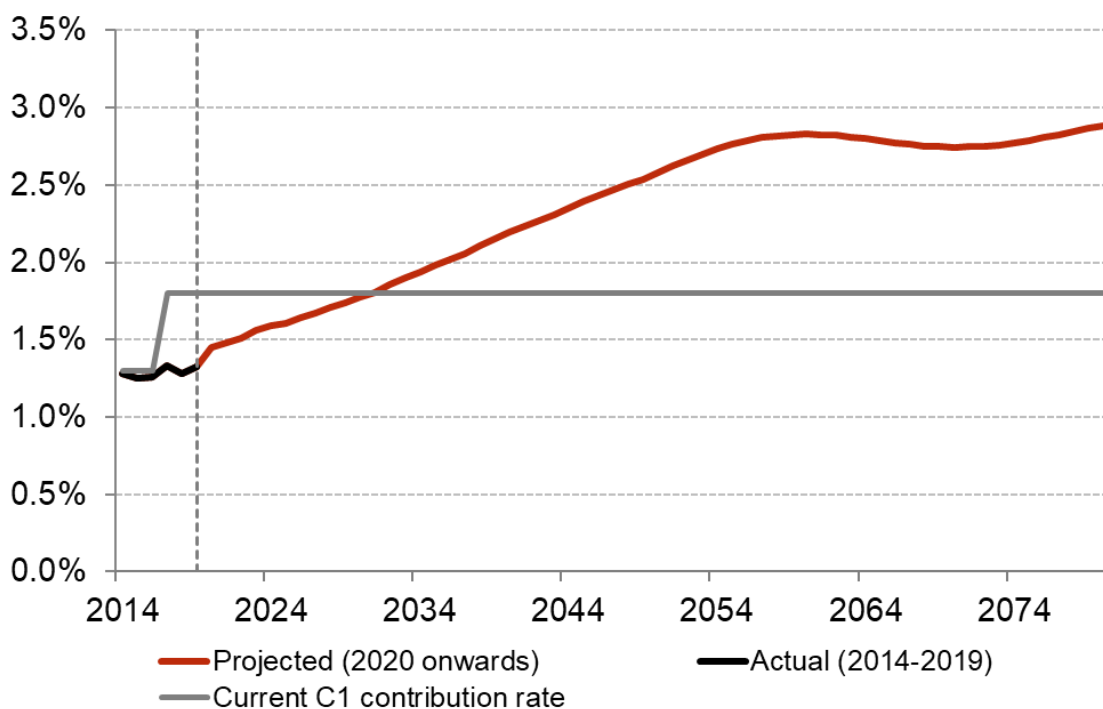
- 1.5 **The Fund had a balance equivalent to 4.1 times annual expenditure in 2019. Based on my principal assumptions, the Fund balance will increase to a maximum of 4.7 times in 2029. The Fund balance is then projected to decline gradually if the current rates of contribution are maintained. The projected balance falls below twice annual expenditure, the Committee’s current target, in 2047 and falls to zero in 2053.**
- 1.6 The principal assumptions include:
 - > Net inward migration of 100 people a year
 - > Benefit rates and contribution limits increase in line with the RPIX index plus one third of the real increase in median earnings above RPIX inflation
 - > Earnings growth in excess of RPIX inflation of 1% a year
 - > Investment return in excess of RPIX inflation of 2% a year
- 1.7 The following chart shows how the Fund balance is projected to change over the projections period.

Chart 1.1: Projected progress of the Fund balance based the principal assumptions



- 1.8 **The current rates of contribution payable to the Fund are not adequate, based on the principal assumptions, to cover expenditure over the period to 2080. This is the reason why the Fund balance declines over the longer term.**
- 1.9 Chart 1.2 shows the projection of the break-even contribution rate. This is the rate of contributions that needs to be paid in each year so that contribution income exactly balances expenditure in that year. The current rate of Class 1 contributions is 1.8%.

Chart 1.2: Break-even Class 1 contribution rate based on the principal assumptions



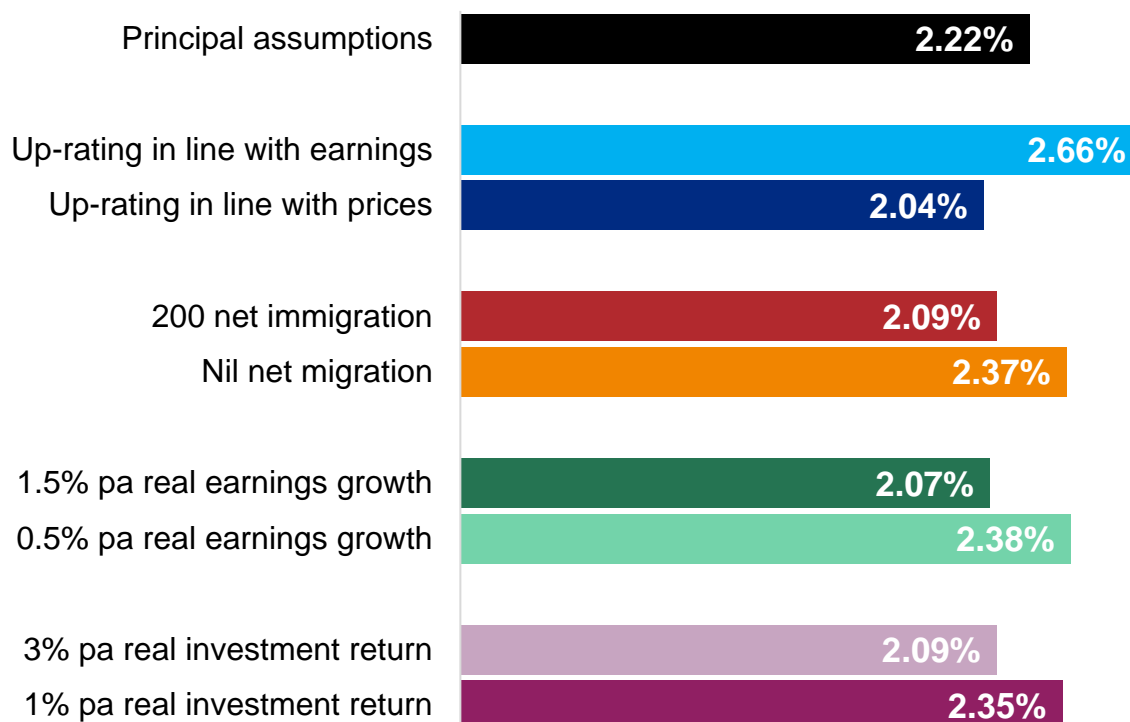
- 1.10 The break-even contribution rate is projected to remain below the current contribution rate until 2031. After this, the break-even rate remains above the current contribution rate for the rest of the projection period. This means that contribution income is not sufficient to cover expenditure from the Fund over the longer term. The existing balance held by the Fund can be used to help finance this shortfall. However, once the balance is exhausted, the rate of contributions would need to rise to at least the break-even rate in order to cover expenditure.
- 1.11 **Based on the principal assumptions the rate of contributions payable would need to be increased in order to target a Fund balance of twice annual expenditure in 2080.**
- 1.12 Currently, the Committee's target is to hold a balance of at least twice annual expenditure. Using the principal assumptions, I have calculated that a constant Class 1 contribution rate of 2.22% would need to be paid from January 2022 to target a balance of twice annual expenditure in 2080. This compares with the current rate of 1.8%.
- 1.13 In addition, as requested, I have calculated the constant contribution rates needed to target balances of 4- and 6-times expenditure in 2080. The constant Class 1 contribution rates are set out the table below. For self-employed and non-employed contributors, the break-even contribution rate would follow the same pattern, relative to the current contribution rate, as for Class 1 contributions.

Table 1.1: Constant contribution rates needed from January 2022 to target specified Fund balance in 2080; the current contribution rate is 1.8%

Target Fund balance as multiple of expenditure	Required constant Class 1 contribution rate
2x	2.22%
4x	2.28%
6x	2.35%

- 1.14 The constant contribution rates are set to target the balance at the end of the projection period. In each case the balance is projected to be above the target level at all times during the period to 2080, except for the first few years in the case of the 6-times target balance.
- 1.15 **The results discussed above have been based on the principal assumptions for the review. However, there is a great deal of uncertainty over the future experience of the Fund and therefore the choice of the assumptions. It is important to understand this uncertainty when considering the results of this review.**
- 1.16 I have therefore also prepared results using variant assumptions. The chart below summarises the constant Class 1 contribution rate required to target a balance of twice expenditure in 2080 for different assumptions. In each case, the results use the principal assumptions except for the one change noted.

Chart 1.3: Constant contribution rates needed from January 2022 to target a balance of twice expenditure in 2080 based on the different assumptions



- 1.17 The current contribution rate (1.8% since 2017) would not be adequate to target a balance of twice expenditure in 2080 under any of these variant scenarios.
- 1.18 The results on variant assumptions are not intended to indicate the full range of possible future experience.
- 1.19 Under the Resolution 11 scenario the constant Class 1 contribution rate required to target a balance of twice expenditure in 2080 is 2.80%.

Professional standards and limitations

- 1.20 This work has been carried out in accordance with the relevant actuarial professional standards: TAS 100 issued by the Financial Reporting Council (FRC) and APS X4 issued by the Institute and Faculty of Actuaries.
- 1.21 This report has been prepared for the use of the Guernsey Committee for Employment & Social Security, and must not be reproduced, distributed or communicated in whole or in part to any other person without GAD's prior written permission. However, we understand that the report will be shared with the Policy & Resources Committee, and presented to the States.
- 1.22 Other than the Committee, no person or third party is entitled to place any reliance on the contents of this report, except to any extent explicitly stated herein. GAD has no liability to any person or third party for any action taken or for any failure to act, either in whole or in part, on the basis of this report.

- 1.23 All the references to Guernsey in this report are to be taken to include also the islands of Alderney, Herm and Jethou, whose residents are covered by the Social Insurance Law.

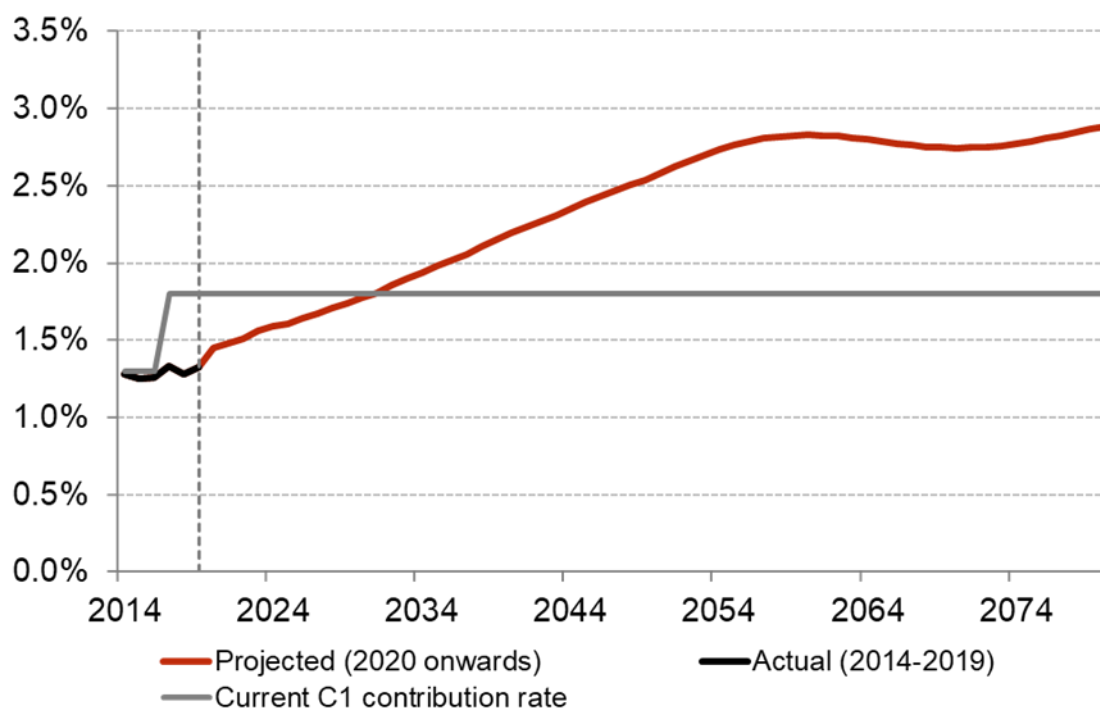
2. Results on principal assumptions

- 2.1 An overview of the Fund is given in Appendix A. At their meeting on 19 August 2020, the States passed a number of resolutions on long-term care benefits. I have included allowance for some of these changes, as described in Appendix A. A summary of the benefits paid from, and the contributions payable to, the Fund is set out in Appendix B. Appendix C summarises the Fund accounts for the five years to 31 December 2019.
- 2.2 For my review, I have projected the income and expenditure cash-flows to and from the Fund. As agreed with the Committee, these projections cover the period up to 2080. The data used in my calculations is summarised in Appendix D, and the methodology and assumptions adopted are described in Appendices E and F. The key assumptions include:
- > Net inward migration of 100 people a year
 - > Benefit rates and contribution limits increase in line with the RPIX index plus one third of the real increase in median earnings above RPIX inflation
 - > Earnings growth in excess of RPIX inflation of 1% a year
 - > Investment return in excess of RPIX inflation of 2% a year
- 2.3 The effect of varying these assumptions is shown in Section 3.
- 2.4 Detailed results for sample years are shown in Appendix G. This report concentrates on three main sets of results:
- > The projected “break-even” contribution rates
 - > The projected balances in the Fund, as a multiple of expenditure, assuming that the current rates of contribution remain unchanged
 - > Estimates of the constant contribution rate required to be paid over the projection period such that the projected average balance of the Fund is equal to twice projected expenditure at the end of the projection period

Break-even contribution rate

- 2.5 The break-even contribution rate in any year is the contribution rate needed to exactly balance contribution income with expenditure in that year. These contribution rates do not make any allowance for assets held, or the investment returns they earn. If the Fund held no assets, contributions would need to be payable at at least the break-even rate in order to cover expenditure.
- 2.6 The projected break-even contribution rate for Class 1 contributors (jointly for employees and employers) is illustrated in the following chart, together with the equivalent out-turn figures for the five years 2015 to 2019. The chart also shows the current rate of contributions payable of 1.8%.

Chart 2.1: Break-even contribution rate (paid on earnings up to the upper earnings limit) based on principal assumptions



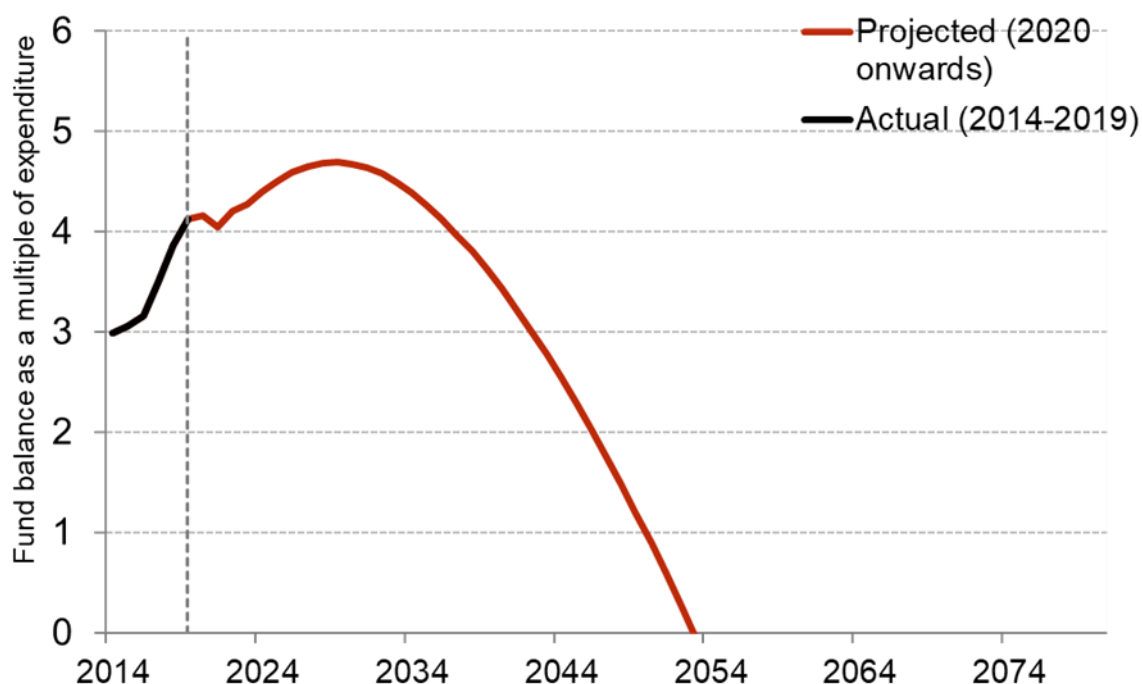
- 2.7 For self-employed and non-employed contributors, the break-even contribution rate would follow the same pattern, relative to the actual contribution rate, as for Class 1 contributions.
- 2.8 Following an increase of 0.5% in the contribution rate, effective from 2017, the break-even rate has been below the current rate of contributions in recent years but is projected to exceed the current rate in 2031 and remain higher throughout the rest of the projection period.
- 2.9 The break-even rate increases strongly over the first part of the projection period as benefit expenditure increases faster than contribution income. Contribution income rises broadly in line with earnings but is offset by the fall in the numbers of contributors at working ages. In contrast, benefit expenditure rises in response to increases in benefit rates and increases in the projected number of beneficiaries and the combination of these generally exceeds the increase in contribution income. In later years, smaller increases in the number of beneficiaries are projected, slowing the rate of increase in benefit expenditure. The reduction in the break-even contribution between 2060 and 2070 reflects falls in the projected numbers of beneficiaries.
- 2.10 The break-even rates shown above start off similar to the rates calculated at the actuarial review as at 31 December 2014. However, in the long-term the rates at this review are lower than at the previous review. Section 4 provides a comparison of the break-even contribution rates calculated at the 2014 and 2019 actuarial reviews.

Projected Fund balance

- 2.11 In 2019, the Fund held a balance that corresponded to 4.1 times benefit and administration expenditure over the year. Chart 2.2 shows how the balance is projected to change over the next 60 years, assuming the contribution rates remain unchanged from current levels.

This projection allows for the investment returns earned by the Fund, which are assumed to average 2% a year above RPIX.

Chart 2.2: Projected progress of the Fund balance based on the principal assumptions



- 2.12 Over the first ten years of the projection, the balance generally increases as a multiple of expenditure. The fall in 2023 reflects the targeting of specific benefit rates in that year. Thereafter, the balance is projected to steadily decline as a multiple of expenditure, and is projected to be exhausted in 2053. The Committee's current target is to hold a balance of twice expenditure: the balance is projected to fall below this by 2047.
- 2.13 The short-term increase in the Fund reflects the current rate of contributions being higher than the break-even rate. However, over the longer-term the Fund balance declines, reflecting the shortfall between contribution income (based on current rates) and expenditure from 2031 onwards. Investment returns on the existing balance will partially offset this shortfall, but they are not sufficient to prevent the decline of the balance.
- 2.14 Once the balance is exhausted, contributions would need to rise to at least the break-even rate in order to cover expenditure. In practice, to the extent that part of the balance is not readily convertible into cash (for example, some property investments) and to maintain a working cash balance, it would be necessary to increase the contribution rate or take alternative action before the balance is exhausted.
- 2.15 At the 2014 review, the balance was projected to be exhausted in 2031. A variant projection allowing for contribution increases in 2017, which have since been implemented, projected the Fund to be exhausted in 2047. This review therefore indicates a later date before the Fund is exhausted. This is largely a consequence of the lower break-even contribution rates shown at this review, which imply a smaller shortfall between income and expenditure, and the higher value of the Fund at the end of 2019. This is offset by the assumption of lower investment returns (2.0% over RPIX compared with 2.5% over RPIX).

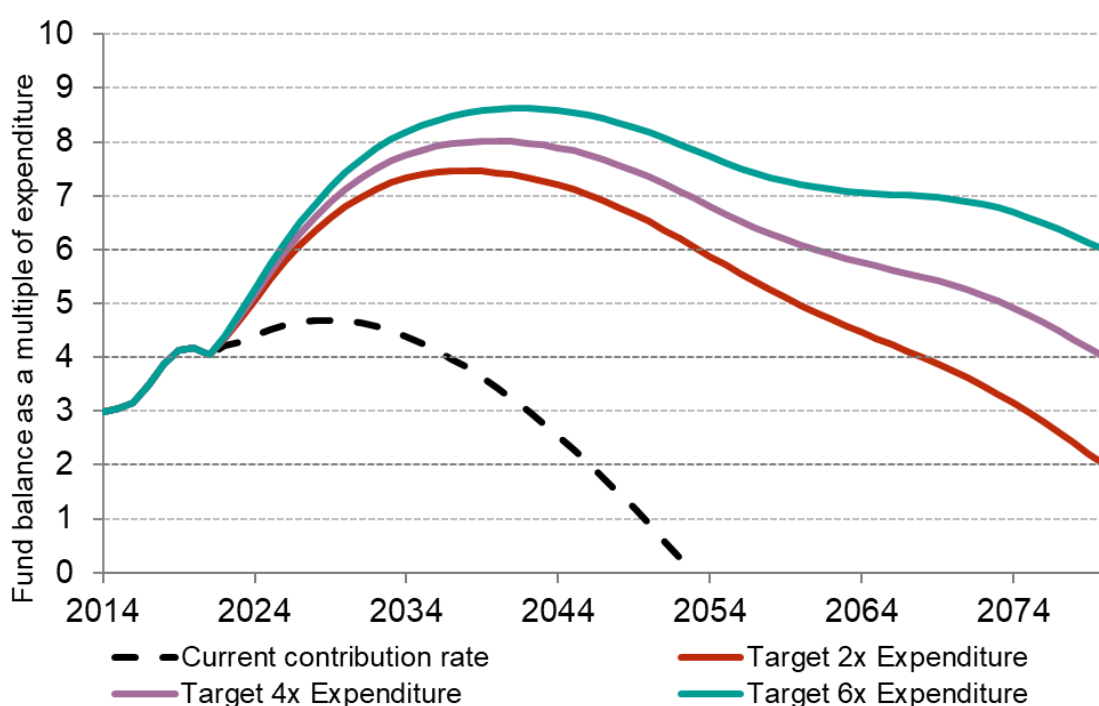
Constant contribution rate to target a specified Fund balance in 2080

- 2.16 The Committee currently has a target to hold a balance that represents twice annual expenditure. I have therefore calculated the constant level of contributions required from January 2022 to target this balance at the end of the projection period in 2080.
- 2.17 In addition, as requested, I have calculated the constant contribution rates needed to target balances of 4- and 6-times expenditure in 2080.
- 2.18 These constant Class 1 contribution rates are set out the table below. For self-employed and non-employed contributors, the break-even contribution rate would follow the same pattern, relative to the current contribution rate, as for Class 1 contributions. The chart that follows shows how the balance is projected to develop if these contribution rates were implemented.

Table 2.1: Constant contribution rates needed from January 2022 to target specified Fund balance in 2080; the current rate is 1.8%

Target Fund balance as multiple of expenditure	Required constant Class 1 contribution rate
2 x	2.22%
4 x	2.28%
6 x	2.35%

Chart 2.3: Projected progress of the Fund balance if the contribution rates in Table 2.1 were implemented



- 2.19 The constant contribution rates are set to target the balance at the end of the projection period. As seen from the chart, this does not mean that the balance is at this level throughout the period. In each case the balance will be above the target level at all times during the period to 2080, except for the first few years in the case of the 6-times target balance.
- 2.20 In all three scenarios the balance is decreasing at the end of the projection period, reflecting that expenditure is higher than contributions and investment returns in the long term.

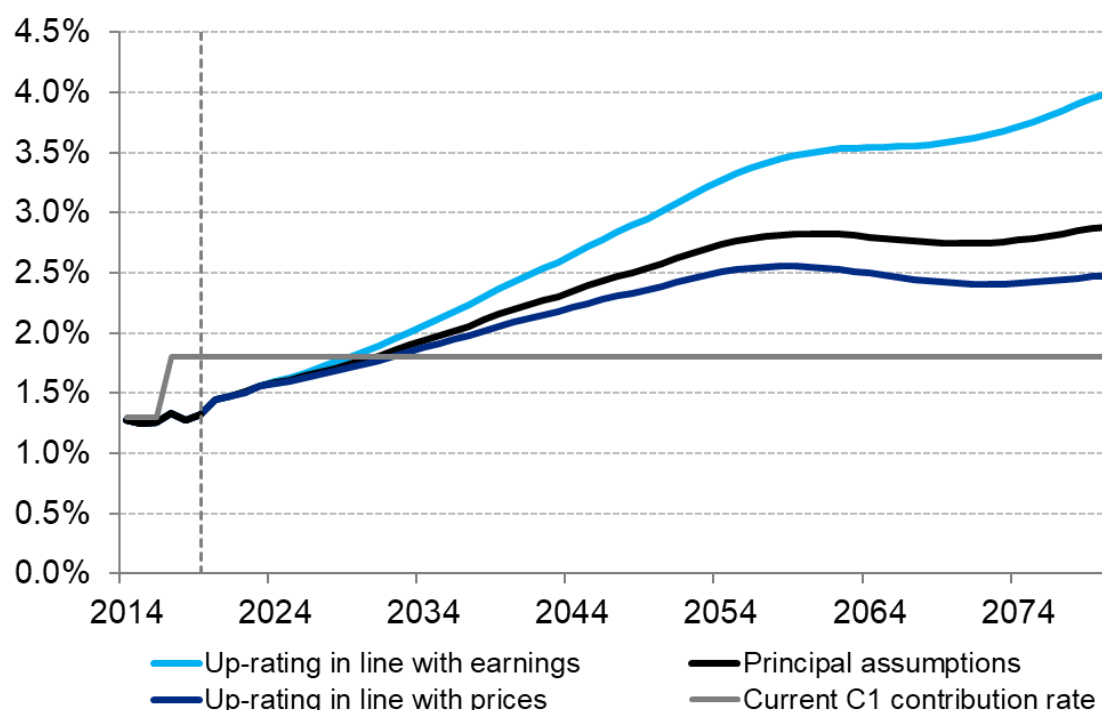
3. Variant projections

- 3.1 The estimates provided in this report depend on assumptions made about the future.
- 3.2 The demographic, economic and benefit-specific assumptions underlying the projections are inevitably subject to a considerable degree of uncertainty, particularly given the long period considered by the review. For example, climate change could have a significant impact on the Fund, affecting the prospects for earnings growth, the population profile, life expectancy and investment returns.
- 3.3 It is therefore important to consider how the results of the review would change if different assumptions were adopted. This section provides alternative projection results based on variant assumptions for:
- > up-rating of benefits and contribution limits
 - > migration
 - > real earnings growth
 - > investment returns
- 3.4 Each variant is considered individually.
- 3.5 The results shown in this section are illustrative only and are not intended to indicate the full range of possible future experience. There is also a variety of other factors that could affect the future progress of the Fund, such as changes in the number of benefit recipients and life expectancy.
- 3.6 At the end of this section, we have considered the impact of allowing for Resolution 11 that was agreed by the States at their meeting on 19 August 2020.

Variant up-rating scenarios

- 3.7 I have made projections assuming benefits and contribution limits are increased:
- > in line with RPIX
 - > in line with earnings
- 3.8 Chart 3.1 shows the Class 1 break-even contribution rate for these two variants, together with the principal results which assume uprating in line with the RPIX index plus one third of the real increase in earnings. The choice of up-rating approach has a significant impact on the break-even contribution rates.

Chart 3.1: Break-even contribution rate based on variant up-rating scenarios



3.9 Under the principal up-rating assumption, the balance is projected to be exhausted in 2053. This is brought forward to 2047 assuming earnings up-rating or pushed back to 2058 under price up-rating.

3.10 Table 3.1 details the constant contribution rate estimated to be required from January 2022 such that the projected average balance of the fund is equal to twice projected expenditure at the end of the projection period for each up-rating scenario.

Table 3.1: Constant contribution rates needed from January 2022 to target a Fund balance of twice annual expenditure in 2080; the current contribution rate is 1.8%

Up-rating scenario	Required constant Class 1 contribution rate
Price up-rating	2.04%
Principal assumption	2.22%
Earnings uprating	2.66%

Variant migration scenarios

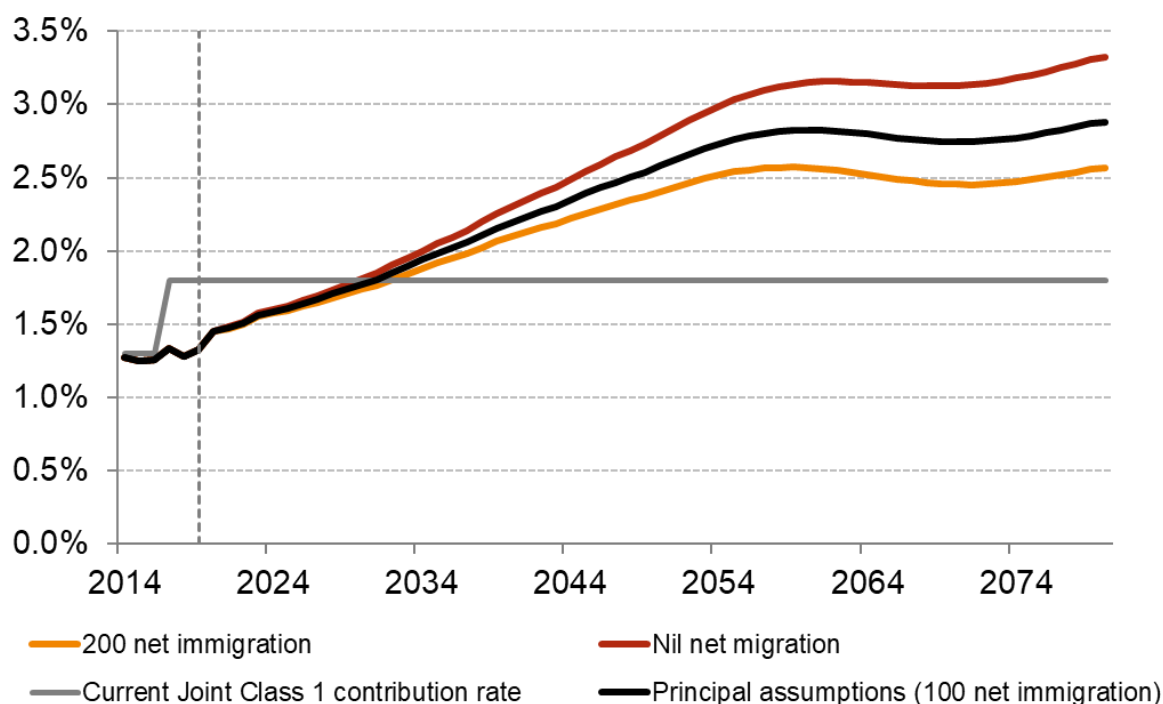
3.11 I have made projections using variant migration scenarios as follows:

- Net nil migration
- Net inward migration of 200 people a year

3.12 These variants were specified by the Committee and the population projections for these variants were supplied by the States Treasury.

3.13 Chart 3.2 shows the Class 1 break-even contribution rate for these two variants, together with the principal results which assume net inward migration of 100 people a year.

Chart 3.2: Break-even contribution rate based on variant migration scenarios



3.14 The path of the break-even contribution rate is broadly similar under each variant. Higher inward migration reduces the rate. This is because higher migration initially increases the number of contributors while having little immediate impact on expenditure. However, the migrants will in due course generate higher expenditure, particularly once they start to reach older ages.

3.15 Under the principal up-rating assumption, the balance is projected to be exhausted in 2053. This is brought forward to 2050 assuming net nil migration or pushed back to 2056 under the assumption of net inward migration of 200 people a year.

3.16 Table 3.2 details the constant contribution rate estimated to be required from January 2022 such that the projected average balance of the fund is equal to twice projected expenditure at the end of the projection period for each migration scenario.

Table 3.2: Constant contribution rates needed from January 2022 to target a Fund balance of twice annual expenditure in 2080; the current contribution rate is 1.8%

Migration scenario	Required constant Class 1 contribution rate
Net nil migration	2.37%
Principal assumption (net inward migration of 100 a year)	2.22%
Net inward migration of 200 a year	2.09%

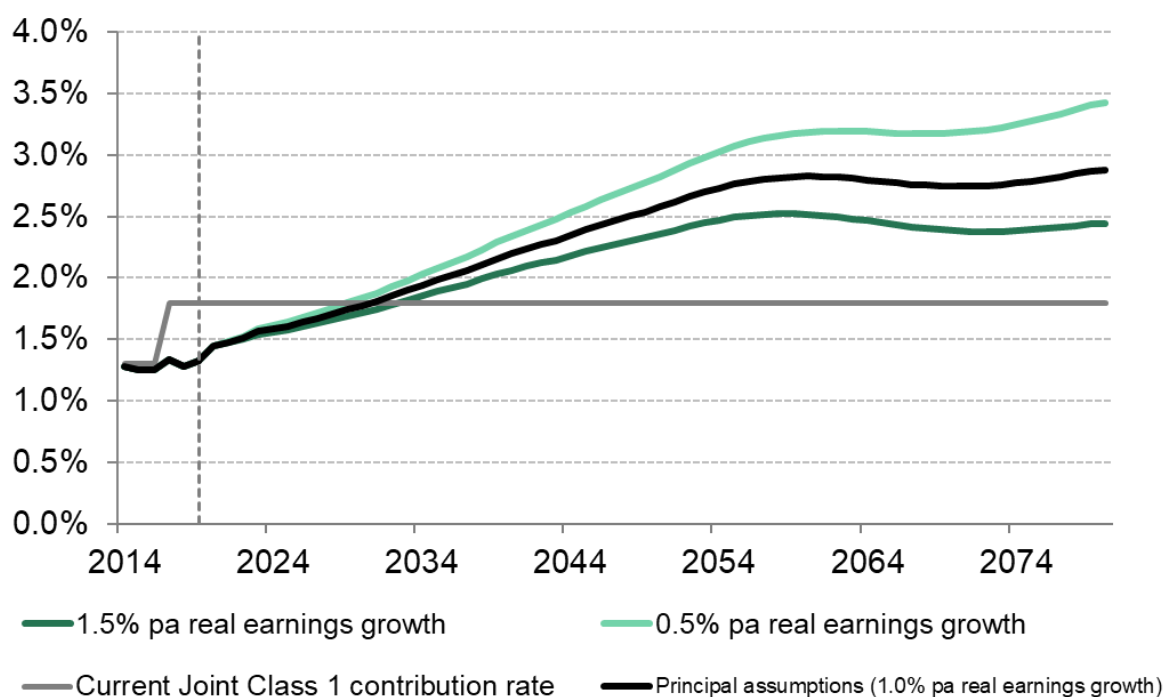
Variant real earnings growth scenarios

3.17 I have made projections assuming real earnings growth, from 2021, of:

- > 0.5% a year
- > 1.5% a year

3.18 Chart 3.3 shows the Class 1 break-even contribution rate for these two variants, together with the principal results which assume real earnings growth of 1.0% a year.

Chart 3.3: Break-even contribution rate based on variant real earnings growth



- 3.19 Higher assumed real earnings growth reduces the projected break-even contribution rate. This is because these higher increases feed through fully (apart from the effect of the contribution limits) into contribution income. However, higher earnings growth has a more limited impact on benefit expenditure, because it is assumed that up-rating is not fully in line with earnings growth.
- 3.20 Under the principal up-rating assumption, the balance is projected to be exhausted in 2053. This is brought forward to 2050 assuming lower real earnings growth or pushed back to 2057 under the assumption of higher real earnings growth.
- 3.21 Table 3.3 details the constant contribution rate estimated to be required from January 2022 such that the projected average balance of the fund is equal to twice projected expenditure at the end of the projection period for each earnings growth scenario.

Table 3.3: Constant contribution rates needed from January 2022 to target a Fund balance of twice annual expenditure in 2080; the current contribution rate is 1.8%

Real earnings growth scenario	Required constant Class 1 contribution rate
0.5% a year	2.38%
Principal assumption (1.0% a year)	2.22%
1.5% a year	2.07%

Variant investment return scenarios

3.22 I have made projections assuming investment return, from 2021, of:

- > 1% a year above RPIX
- > 3% a year above RPIX

3.23 The investment return assumption only affects the projection of the Fund balance. As the calculation of the break-even contribution rate ignores the impact of the Fund balance, the investment return assumption has no effect on the break-even contribution rates.

3.24 Under the principal up-rating assumption, the balance is projected to be exhausted in 2053. This is brought forward to 2050 assuming lower investment returns or pushed back to 2056 under the assumption of higher returns.

3.25 Table 3.4 details the constant contribution rate estimated to be required from January 2022 such that the projected average balance of the fund is equal to twice projected expenditure at the end of the projection period for each investment return scenario.

Table 3.4: Constant contribution rates needed from January 2022 to target a Fund balance of twice annual expenditure in 2080; the current contribution rate is 1.8%

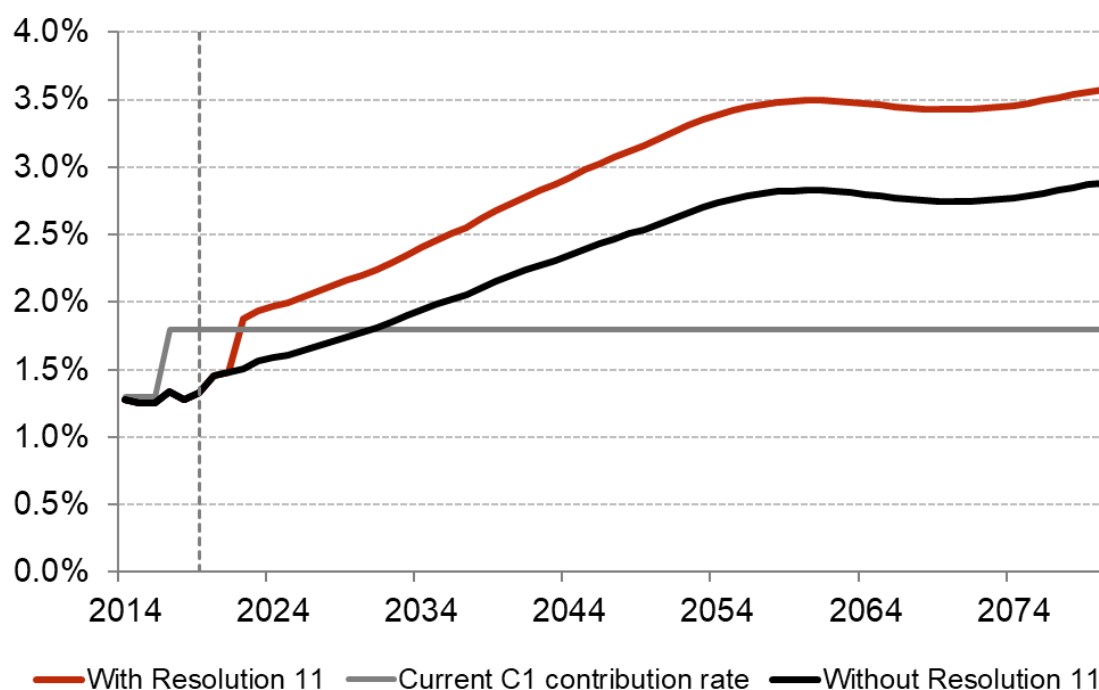
Investment return scenario	Required constant Class 1 contribution rate
1% a year	2.35%
Principal assumption (2% a year)	2.22%
3% a year	2.09%

Resolution 11 scenario

3.26 As described in paragraph A.8, the States have agreed in principle that the Fund benefits should be extended to cover care provided at home, with detailed implementation plans to be developed by June 2022. As agreed with the social security department, this proposal is not included in the main results in Section 2.

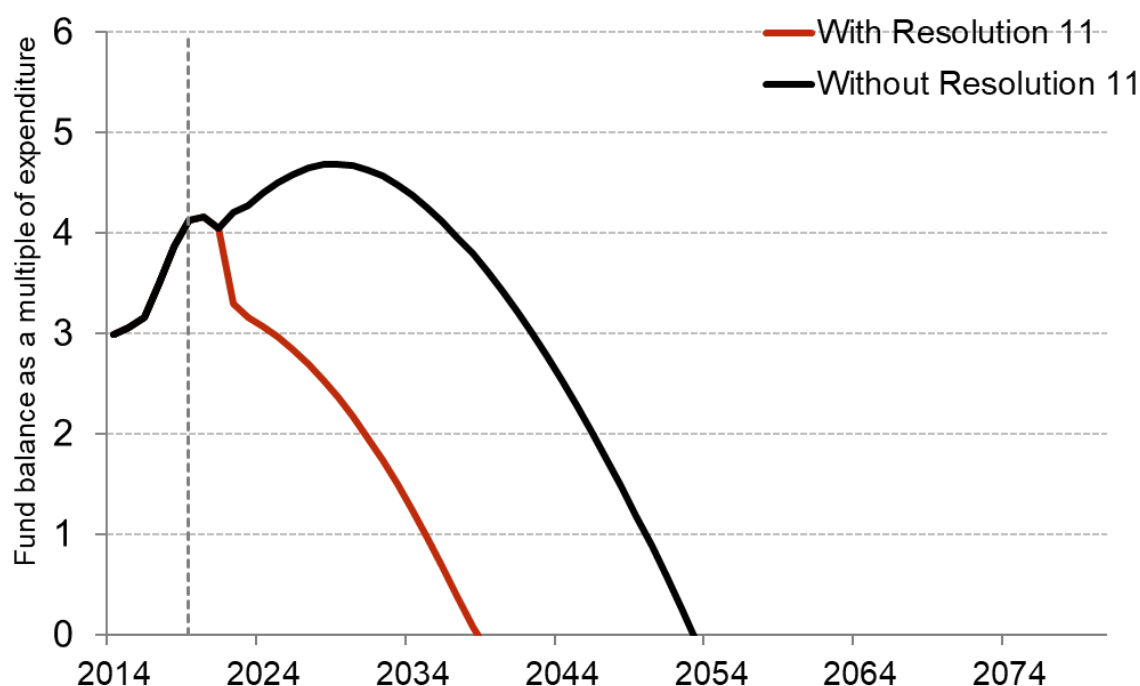
- 3.27 I have been supplied with estimated costs for these benefits for selected years, as calculated by the States Treasury, to use for this scenario. I understand these costs allow for the effect of population ageing. It has been indicated by the States Treasury that there is a large degree of uncertainty around these costs and I have not reviewed them. I have adjusted these costs to reflect our price inflation assumption of 2.5% a year and uprating to be in line with RPIX plus one third of the real increase in median earnings above RPIX. Costs for intermediate years have been obtained by interpolation. I have assumed that the benefits will be introduced from 1 January 2022.
- 3.28 These adjusted annual costs have then been added to the projected annual expenditure using the principal assumptions to project the effect on the Fund balance and break-even contribution rates if home care benefits were introduced. It is assumed that the costs supplied are net costs to the scheme and that there is no effect on the level of demand for the other benefits provided through the Fund or the supply of residential and nursing home care.
- 3.29 Chart 3.4 shows the Class 1 break-even contribution rate under this scenario, together with the principal results. For self-employed and non-employed contributors, the break-even contribution rate would follow the same pattern, relative to the actual contribution rate, as for Class 1 contributions.

Chart 3.4: Break-even contribution rate based on Resolution 11 scenario



- 3.30 The break-even rate is projected to be nearly 0.4% percentage points higher than the principal projection in 2022, rising to nearly 0.7% higher by 2080.
- 3.31 Chart 3.5 shows the projected Fund balance as a multiple of annual expenditure under this scenario, assuming the contribution rates remain unchanged from current levels, together with a comparison with the main results in Section 2.

Chart 3.5: Projected progress of the Fund balance based on the principal assumptions



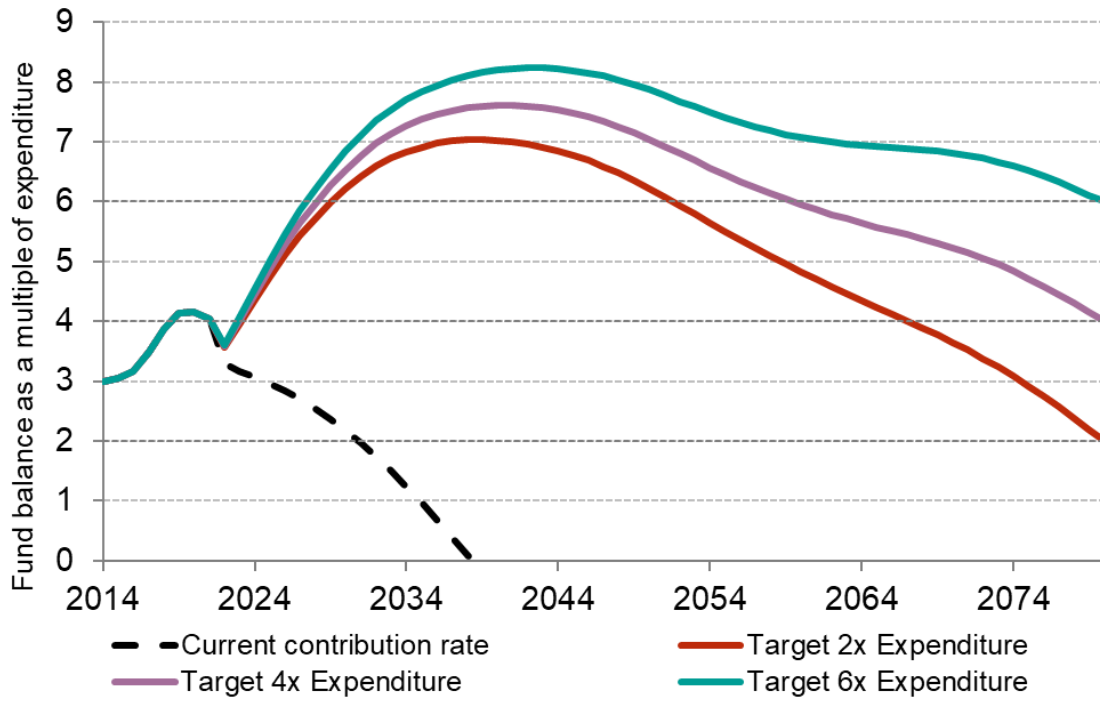
3.32 Under the principal up-rating assumption, the balance is projected to be exhausted in 2053. This is brought forward to 2038 under the Resolution 11 scenario.

3.33 Table 3.5 details the constant contribution rate estimated to be required from January 2022 such that the projected average balance of the fund is equal to twice, 4-times and 6-times projected expenditure at the end of the projection period. For self-employed and non-employed contributors, the break-even contribution rate would follow the same pattern, relative to the current contribution rate, as for Class 1 contributions. The chart that follows shows how the balance is projected to develop if these contribution rates were implemented.

Table 3.5: Constant contribution rates needed from January 2022 to target specified Fund balance in 2080 under the Resolution 11 scenario; the current rate is 1.8%

Target Fund balance as multiple of expenditure	Required constant Class 1 contribution rate
2 x	2.80%
4 x	2.87%
6 x	2.95%

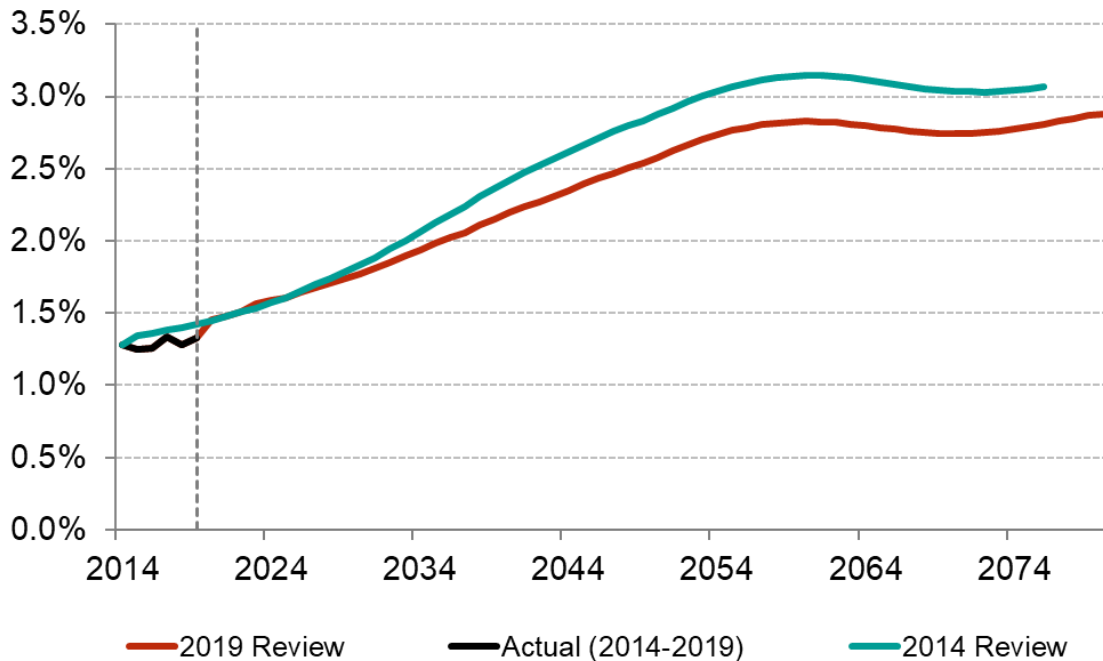
Chart 3.6: Projected progress of the Fund balance if the contribution rates in Table 3.5 were implemented



4. Changes in projections from the 2014 review

4.1 Chart 4.1 shows the break-even contribution rates calculated at this review and at the previous review as at 31 December 2014.

Chart 4.1: Break-even contribution rate based on principal assumptions at the 2019 and 2014 actuarial reviews



4.2 Overall, the 2019 review shows lower break-even contribution rates than those calculated at the 2014 review. Table 4.1 provides an approximate breakdown of the main reasons for the changes between the two reviews.

Table 4.1: Comparison of 2019 Review projected break-even contribution rate and 2014 Review projected break-even contribution rate

	2025	2035	2045	2055	2065	2075
2014 Review	1.6%	2.1%	2.7%	3.1%	3.1%	3.1%
Change in up-rating assumption	0.0%	0.0%	0.0%	-0.1%	-0.1%	-0.2%
Change in population projections	-0.1%	-0.1%	-0.2%	-0.2%	-0.3%	-0.1%
Reduction in real earnings growth	0.0%	0.1%	0.2%	0.3%	0.4%	0.5%
Change in contribution assumptions	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
Change in benefit assumptions	-0.1%	-0.1%	-0.2%	-0.2%	-0.2%	-0.2%
Other changes	0.2%	0.1%	0.0%	0.0%	0.0%	-0.1%
2019 Review¹	1.6%	2.0%	2.4%	2.8%	2.8%	2.8%

Figures may not sum to totals due to rounding.

4.3 I comment on each element of the change in the break-even contribution rate as follows:

- > Up-rating assumption: for the 2019 review, it is assumed that benefits and contribution limits would increase in line with the RPIX index plus one third of the real increase in median earnings above RPIX inflation. This is the same benefit uprating as assumed for the 2014 review. However, at the 2014 review, it was assumed that this level of up-rating only applied up to 2024 for contribution limits, and thereafter they increased in line with RPIX only. The higher up-rating assumption at the 2019 review for contribution limits leads to lower break-even contribution rates.
- > Population projection: most recipients of long-term care benefits are aged over state pension age. Compared with the 2014 review, the population projections used for the 2019 review imply a slightly greater number of people at working ages relative to those over state pension age and this acts to reduce the break-even rate, even after allowing for those over state pension age to be paying contributions.
- > Real earnings growth: assumed real earnings growth has reduced from 1.5% a year at the 2014 review to 1.0% a year at the 2019 review. As commented in paragraph 3.18, assuming higher earnings growth reduces the break-even contribution rate.
- > Contribution assumptions: the 2019 review includes updated assumptions on the proportion of the population that contributes to the Fund and allowed for new data on earnings distributions. These changes reduce the break-even contribution rate.
- > Benefit assumptions: The introduction of a higher benefit rate for complex cases and assumed higher proportions of beneficiaries receiving EMI benefits increase the break-even contribution rate. However, this has been more than offset by the reduction in the proportions assumed to receive long-term care benefits resulting in a reduction in the break-even contribution rate.
- > Other changes: these reflect the difference between the previous projections up to 2019 and the actual outturn, the adjustment of contribution income in 2020 to make allowance for the coronavirus pandemic and the targeting of specific benefit rates in 2023.

Appendix A: Overview of the Guernsey Long-term Care Insurance Fund

- A.1 The Long-term Care Insurance Fund provides weekly benefits towards the cost of private nursing or residential care on either a permanent or respite basis.
- A.2 The Fund is financed broadly on the pay-as-you-go principle. Under this approach, contribution income in a year is intended to cover expenditure in the year, and no significant fund of assets would be built up out of which to finance future expenditure. This means contribution rates may change significantly over time owing to changes in the benefits provided, the profile of the population or the economic environment.
- A.3 However, a fund is maintained to act as a reserve to meet unforeseen contingencies and to help smooth required increases in the contribution rate. As at 31 December 2019, the balance of the Fund was £92.7 million, which is equivalent to about 4.1 times annual expenditure.
- A.4 Appendix B provides a summary of the contributions payable and the benefits provided.
- A.5 Contributions are paid by employees, the self-employed and the non-employed. Contributions are not payable by employers. No central funding is provided to the Fund by way of a States grant.

Changes since the 2014 actuarial review

- A.6 With effect from January 2017, all rates of contribution to the Fund were increased by 0.5% each.
- A.7 As part of the Supported Living and Ageing Well Strategy: Extending the Life of the Long-term Care Insurance Scheme, the States passed a number of resolutions on long-term care benefits at their meeting on 19 August 2020. Following discussion with the social security department, I have included allowance for the following in the calculations for this review¹:
- > Increases to the benefit rates to be applied from 5 October 2020 (Resolution 3)
 - > targeting specific benefit rates in 2023 (Resolution 7)
 - > Introduction of a new higher benefit rate for complex and exceptional cases, assumed to be implemented from January 2022 (Resolution 9)
- A.8 Details of these changes are given in Appendix B.

¹ See the resolutions made on 19 August 2020 following consideration of the policy letter on “Supported Living and Ageing Well Strategy: Extending the Life of the Long-term Care Insurance Scheme” dated 29 June 2020.

A.9 Resolution 11 agreed in principle that the Fund should be extended to cover care provided at home with detailed implementation plans to be developed by June 2022. This resolution is not included in the main projections, but I have considered its impact in Section 3. For those results, the projected costs of the additional benefits payable have been based on figures supplied by the States Treasury.

Appendix B: Summary of contributions and benefits

B.1 This appendix provides a brief overview of the contributions, benefits and qualifying conditions as at 31 December 2019, noting any future changes that have also been allowed for in this review. Further information on contributions and benefits is available from the States of Guernsey Social Security (www.gov.gg).

Contributions

B.2 Contributions are paid by employees, the self-employed and the non-employed. There are no employer contributions payable. Contributions are paid by employees and self-employed individuals earning above the lower earnings limit, with contributions payable on total earnings up to an upper earnings limit. Employee and self-employed contributions are payable until pension age.

B.3 Contributions are paid by non-employed individuals with income above the lower income limit. These contributions are based on total income up to the upper income limit but subject to the non-employed income allowance. Contributions continue to be payable by non-employed individuals after pension age, based on personal income.

B.4 The table below shows the contribution rates applicable since 2015.

Table B.1: Contribution rates payable

	2015	2016	2017	2018	2019	2020 onwards
Employee	1.3%	1.3%	1.8%	1.8%	1.8%	1.8%
Self-employed	1.3%	1.3%	1.8%	1.8%	1.8%	1.8%
Non-employed (understate pension age)	1.4%	1.4%	1.9%	1.9%	1.9%	1.9%
Non-employed (over state pension age)	1.6%	1.6%	2.1%	2.1%	2.1%	2.1%

B.5 There is no central funding is provided to the Fund by way of a States grant.

B.6 These contribution rates are in respect of the Long-term Care Insurance Fund only. Additional contributions are payable to the Guernsey Insurance Fund and for health services. This review assumes that contribution income to the Long-term Care Insurance Fund is in line with published contribution rates and no allowance is made for any potential re-allocations between the funds.

Benefits

- B.7 Weekly benefits are payable on behalf of those assessed as being in need of care and who are currently being provided care in a private residential or nursing home. Benefits can be provided on either a permanent or respite basis. Respite benefits can normally be provided for up to four weeks a year.
- B.8 Payments are made directly to the care home and all benefits are paid at the standard rate; no proportionate amounts are payable.
- B.9 To receive a benefit, the individual must have lived in Guernsey for a continuous period of 5 years and have lived in Guernsey for at least 12 months immediately prior to claiming Long-term Care Benefit.
- B.10 Individuals receiving permanent care are required to pay an additional 'co-payment' towards the cost of care from their own funds. The co-payment is financed from the Long-term Care Insurance Fund in respect of respite care. Where an individual cannot afford the co-payment, Income Support may be provided. Income Support is funded centrally and not from the Long-term Care Insurance Fund and is not considered as part of this review.
- B.11 Benefits are not payable on behalf of those being cared for in a home run by the States.

Table B.2: Weekly benefit rates payable

	2015	2016	2017	2018	2019	2020 (Jan- Oct)	2020 (Oct- Dec)
Private residential home	£422.66	£429.87	£432.46	£444.57	£455.21	£463.89	£521.00
Private residential home with EMI care	£556.92	£566.37	£569.80	£585.76	£599.83	£611.24	£681.00
Private nursing home	£789.11	£802.55	£807.38	£829.99	£849.94	£866.11	£940.00
Co-payment	£190.75	£193.97	£195.16	£200.62	£205.45	£209.37	£229.37

Future changes

- B.12 Resolutions 3, 6 and 7 agreed at the States meeting on 19 August 2020 (see paragraph A.7) related to the benefit rates over the next few years. Resolution 9 provided for a higher rate of benefit payable for complex and exceptional cases of £1,112.00 a week in 2020 terms. It is assumed this benefit is introduced from January 2022 and that any recipients of this benefit would otherwise have been in receipt of permanent nursing care.
- B.13 Table B.3 shows the benefit rates and co-payments assumed for 2021, 2022 and 2023. The rates from 2021 are those set out in resolution 3 and are assumed to be payable from 5 October 2020.

- B.14 The benefit rates for 2022 are assumed to be those payable in 2021, increased in line with the long-term uprating assumption of RPIX plus one-third of the real increase in median earnings. The higher rate benefit is assumed to be equivalent to £1,112.00 increased by the assumed uprating for 2021 and for 2022.
- B.15 The assumed benefit rates in 2023 are those specified in resolutions 6 and 7 (£801.00 for permanent residential care, £961 for residential dementia care, £1,220 for Nursing care and £280 co-payment) increased in line with RPIX for the 3 years to 2023. The higher complex care benefit is also assumed to rise in line with the other benefits in 2023. The assumed weekly higher rate payable in 2023 has been derived by applying the percentage increase in the private nursing home rate between 2020 and 2023 to £1,112.00.
- B.16 The benefit rates and co-payments for later years are those shown for 2023 increased on each 1 January by RPIX plus one-third of the real increase in earnings.

Table B.3: Assumed weekly benefit rates payable from 2021

	2021	2022	2023
Private residential home	£521.00	£535.81	£561.06
Private residential home with EMI care	£681.00	£700.35	£733.36
Private nursing home	£940.00	£966.71	£1,012.28
Higher rate	N/A	£1,172.19	£1,299.67
Co-payment	£229.37	£235.89	£301.53

Appendix C: Fund accounts from 2015 to 2019

C.1 The table below provides details of income, expenditure and the balance of the Fund for the period 2015 to 2019.

Table C.1: Income, expenditure and Fund balance from 2015 to 2019 (£000s)

	2015	2016	2017	2018	2019
Balance at 1 January	55,564	55,832	62,930	75,013	79,211
Income					
Contributions	18,940	19,433	26,590	28,038	28,277
States Grant	0	0	0	0	0
Total Income	18,940	19,433	26,590	28,038	28,277
Outgo					
Benefits	17,913	18,450	19,416	19,632	20,402
Administration Costs	299	325	311	308	425
Total Outgo	18,212	18,775	19,727	19,940	20,827
Operating Surplus / Deficit	728	658	6,893	8,098	7,450
Return on Investments	-460	6,440	5,220	-3,900	6,080
Balance at 31 December	55,832	62,930	75,013	79,211	92,741

C.2 The balance of the Fund has increased in cash terms over the period since the last review. The Fund has run an operating surplus in each of the years since 2015, in particular since the increase to contribution rates in 2017. This was bolstered by good investment returns in 2016, 2017 and 2019, but partially offset by investment losses in 2015 and 2018.

C.3 As a result of these operating surpluses, the Fund balance as a multiple of expenditure has increased over the 5 year period from 3.0 in 2014 to 4.1 in 2019.

C.4 Increases in benefit expenditure are largely driven by increases in permanent residential and permanent nursing benefits. Benefit expenditure has increased on average by about 2.7% each year.

C.5 The table below provides details of expenditure on each benefit for the period 2015 to 2019.

Table C.2: Benefit expenditure from 2015 to 2019

£000s	2015	2016	2017	2018	2019
Permanent Residential Care	5,579	5,543	6,119	6,460	6,222
Permanent Residential Care with EMI Supplement	2,897	2,907	3,570	4,043	4,319
Respite Residential Care	159	144	103	65	103
Respite Residential Care with EMI Supplement	11	21	47	36	45
Permanent Nursing Care	9,146	9,708	9,471	8,985	9,644
Respite Nursing Care	121	127	106	43	69
Total	17,913	18,450	19,416	19,632	20,402

Appendix D: Summary of data

D.1 A summary of the membership data supplied for this actuarial review is set out below.

Table D.1: Summary of contributor data² - average numbers over the calendar year

	2015	2016	2017	2018	2019
Class 1 - men	14,789	14,823	14,787	14,858	14,928
Class 1 - women	14,047	14,031	14,193	14,263	14,349
Class 2 – men	2,145	2,052	1,997	1,911	1,833
Class 2 - women	657	652	649	648	659
Class 3 – men (under pension age)	429	415	397	363	352
Class 3 – women (under pension age)	653	648	644	606	592
Class 3 – men (over pension age)	2,994	2,987	3,009	3,050	3,057
Class 3 – women (over pension age)	1,491	1,514	1,603	1,622	1,679

Table D.2: Summary of beneficiaries' data (Average number of awards in payment)

	2015	2016	2017	2018	2019
Permanent Residential Care	256	256	270	272	259
Permanent Residential Care with EMI Supplement	99	99	111	128	133
Permanent Nursing Care	223	230	217	204	208

² These figures exclude “deficiency notices” and “accounts”.

Table D.3: Summary of beneficiaries' data (Number of new awards in payment)

	2015	2016	2017	2018	2019
Respite Residential Care	120	114	88	62	77
Respite Residential Care with EMI Supplement	7	17	40	25	43
Respite Nursing Care	67	56	48	24	34

- D.2 Our calculations rely on the accuracy of the data. Our checks on the data were limited to overall reasonableness and consistency. We have discussed with the social security department some specific issues we noted in the data. However, overall, the data appeared to be of good quality and sufficient for the purposes of the review.
- D.3 If any of the data used for the calculations is materially incorrect or incomplete, this could have a significant effect on the results.

Appendix E: Methodology and assumptions

Methodology

- E.1 This review has been carried out using a projected cashflow approach, given the partially funded nature of the Fund. As such, the financial condition of the Fund has been assessed in terms of the average Fund balance relative to annual expenditure, reflecting that, although a reserve is held, assets are not expected to be sufficient to cover the full accrued liabilities.
- E.2 The calculations involve projecting contribution income, benefit expenditure and administration expenses over the 60 years from 2020 to 2080. The projections have been prepared on an open group basis. This means that the review allows for future contributors to the Fund and not only those currently contributing to, or receiving benefits from, the Fund.
- E.3 Three main sets of results are presented in this report:
- > The projected “break-even” contribution rates
 - > The projected balances in the Fund, as a multiple of expenditure, assuming that the current rates of contribution remain unchanged
 - > Estimates of the constant contribution rate required to be paid over the projection period such that the projected average balance of the Fund is equal to twice projected expenditure at the end of the projection period
- E.4 The break-even contribution rates are the rates that would be required in order for contribution income in each year to equal expenditure on benefits and administration costs in that year.
- E.5 The projection of the Fund balance gives an indication of the extent to which the build-up of assets in the Fund can be used to delay increases to contribution rates that might otherwise be required. If no fund of assets had been built up, the contribution rate would need to follow the break-even rates.
- E.6 We believe that this methodology is appropriate for the review and consistent with actuarial principles.

Population projections

- E.7 A key driver of the results of the actuarial review is the assumed size and profile of the Guernsey population over the projection period.
- E.8 The population projections adopted for the main results of this review (as set out in Section 2) were provided by the States’ Treasury and were prepared by the States’ Data and Analysis division. Separate projections were provided for Guernsey and Alderney: these

projections were added together for the purpose of the actuarial review as the Fund covers the population in both islands.

- E.9 Appendix F contains further details on this, and on the assumptions used in the population projections.

Assumptions

- E.10 In addition to the population projections, it is necessary to make a large number of other assumptions about likely future experience. The assumptions determine the future numbers of beneficiaries and contributors, the average level of benefits payable and the average earnings of contributors.
- E.11 The assumptions adopted are based on data and information provided by the Committee for Employment & Social Security. We have relied on the accuracy of these data and GAD does not accept responsibility for advice based on wrong or incomplete data or information provided.
- E.12 Since the effective date of the review, the world has been struck by the COVID-19 pandemic. The pandemic has already had an impact on many economies, although its ultimate impact will not be known for some time. Given the long-term nature of the actuarial review, the short-term impact of the pandemic may have only a limited effect on the results of the review. Nevertheless, we have incorporated an indicative allowance for the pandemic in developing some of the economic assumptions.
- E.13 It should be recognised that great uncertainty remains around the ultimate effect of COVID-19 and therefore our assumptions about this represent just one possible scenario. There is a range of other, plausible scenarios that could have a more or less favourable impact on the Fund.
- E.14 The results of the review are sensitive to the assumptions adopted. Although the assumptions as a whole are considered to form a reasonable basis for the review, in practice, it is not possible to predict the future with certainty and therefore the Fund's future experience may differ from that assumed. It is therefore important to consider how the results of the review would change if experience followed a different set of assumptions and this is illustrated in Section 3 of this report.
- E.15 A summary of the assumptions adopted for this review, together with a brief explanation of how they were determined, is given below. We have set the assumptions (apart from the population projections) in order to represent best estimates of the future experience of the Fund, and therefore they do not incorporate any margins for optimism or pessimism, except where stated otherwise. The population projections were specified by the States.

Policy assumptions

- E.16 As agreed with the Committee, it is generally assumed that the Fund will continue to operate as it does currently. However, it is necessary to make specific assumptions about how benefits and contribution limits will be increased in future.
- E.17 As instructed by the Committee, it is assumed that benefits and contribution limits increase in line with the RPIX index plus one third of the real increase in median earnings above RPIX inflation. In contrast, at the 2014 review, whilst long-term care benefits were also

assumed to increase in line with the RPIX index plus one third of the real increase in median earnings above RPIX inflation, contribution limits were assumed to increase in line with the RPIX index plus one third of the real increase in earnings above RPIX inflation until 2024 and thereafter in line with RPIX index only.

- E.18 We understand that the RPIX index is constructed in a similar way to the corresponding index for the UK. However, the RPI indices are regarded as having some technical drawbacks³ and are largely being phased out in the UK in favour of the Consumer Prices Indices. If the RPIX index in Guernsey were also to be replaced, an alternative measure for increasing benefits and contribution limits would need to be found.

Economic assumptions

Price inflation

- E.19 The level of assumed price inflation is not a financially significant assumption because all cash-flow items are linked to price inflation either directly or indirectly. It therefore has little impact on the calculated contribution rates or the Fund balance as a multiple of expenditure.
- E.20 RPIX has been chosen as the States' preferred measure of price inflation: this is designed to measure "core" price inflation excluding mortgage interest payments.
- E.21 Over the ten years to 31 December 2019, RPIX price inflation has averaged 2.1% a year, although in recent years it has been slightly higher, averaging 2.4% a year over the three years to 31 December 2019. The Guernsey inflation bulletin for the quarter ended 30 June 2020 has indicated that RPIX inflation was 2.4% a year (compared with 2.5% for the quarter ended 31 March 2020).
- E.22 Overall, it is assumed that price inflation will be 2.5% a year in all future years, which we understand is consistent with other financial projections made by the States. The long-term assumption at the 2014 review was that price inflation would average 3% a year.

Real earnings growth

- E.23 The level of assumed real earnings growth (in excess of RPIX price inflation) is a significant assumption.
- E.24 Data provided on earnings growth shows that over the ten years to 31 December 2019, real earnings (relative to RPIX) grew on average by 0.2% a year. Over the three years to 31 December 2019, real earnings growth also averaged 0.2% a year, but higher growth of over 0.5% a year was seen in 2018 and 2019.
- E.25 In principle, real earnings growth would be expected to reflect real GDP growth, which has averaged at around 1.1% pa over the nine years to 2018 (the latest year for which we have data). However, the precise relationship between earnings and GDP is complex, reflecting factors like changes in the total number of hours worked and the average hours worked per employee, the proportion of GDP attributable to employment earnings and changes in the structure of remuneration.

³ In particular, the use of arithmetic means. More background on the UK RPI can be found in the consultation document issued by the UK Government and the UK Statistics Authority: <https://consultations.ons.gov.uk/rpi/2020/>

- E.26 It is also useful to look at expectations of earnings growth in the UK. In their 2020 Fiscal Sustainability Report (FSR) published in July 2020⁴, the OBR assumed that long-term growth in average earnings would be about 1% a year in excess of RPIX inflation. Although the construction of inflation indices can vary, we understand that the Guernsey RPIX index is broadly consistent with the UK RPIX index.
- E.27 The COVID-19 pandemic is likely to have some impact on real earnings growth. The OBR's analysis in the 2020 FSR assumes, under the central scenario, that UK GDP will fall by around 10% in 2020, before recovering but by 2024 it would remain about 3% below the level that was projected before the pandemic. They also assume that average earnings would be broadly static in 2020 (after allowing for the UK Government's interventions in the labour market).
- E.28 We have seen no analysis of how earnings are likely to be affected in Guernsey. However, from discussions with officers in the States' Treasury, we understand that in the long-term GDP is assumed to be about 1½% lower than it would have been without the pandemic. This is smaller impact than for the UK which might reflect the shorter lockdown experienced by Guernsey and greater weighting towards financial services.
- E.29 Overall, it is assumed that in real terms (relative to RPIX), average earnings would be unchanged in 2020 and then grow by 1% in each subsequent year. This therefore implies that earnings will be permanently 1% lower than if we had made no allowance for the economic slowdown in 2020.
- E.30 At the 2014 review, it was assumed that real earnings would grow by 1.5% a year. The lower assumption adopted for this review reflects a less favourable outlook for future earnings growth.

Real investment return

- E.31 The Guernsey Committee for Employment & Social Security has asked us to adopt a long-term assumption for real investment returns of 2% a year over RPIX, to be applied throughout the projection period. This is lower than the assumption made for the 2014 review of 2.5% a year over RPIX and is net of investment expenses levied within the Common Investment Fund.
- E.32 Investment returns on the fund have been variable in recent years, with negative returns emerging in 2015 and 2018. We have estimated that, over the five years to 31 December 2019, the combined funds earned an investment return of about 2.1% a year over RPIX price inflation.
- E.33 The Governance Framework Document for the Common Investment Fund dated May 2018 sets out the strategic asset allocation for the Common Investment Fund (see section 4.8). This includes a 15% allocation to equities and 32% to fixed income with the balance in a range of alternative investment funds.
- E.34 The Governance document indicates that the overall target return is the 6-month LIBOR rate plus 3.5%. This is stated to be broadly equivalent to the expected return on equities (see section 4.7 of the Governance document⁵).

⁴ See <https://obr.uk/fsr/fiscal-sustainability-report-july-2020/>

⁵ This refers to the target being based on 3-month LIBOR, but we understand that this should 6-month LIBOR.

- E.35 Overall, we consider that the assumption of 2% a year above RPIX is consistent with the target return and lies within the range of reasonable investment return assumptions. However, to illustrate the uncertainty around this assumption, we have also prepared results on alternative investment return assumptions.
- E.36 The COVID-19 pandemic has had a significant impact on the financial markets. Northern Trust's report on the performance of the Common Investment Fund up to 31 July 2020 indicates that in the first seven months of 2020 the fund actually achieved a return of minus 5%. Our calculations allow for this actual return before switching to the assumption of 2% a year over RPIX.

Table A.1: Economic assumptions

	2019 (actual)	2020	2021	2022 onwards
RPIX price inflation	2.4%	2.5%	2.5%	2.5%
Real earnings growth (net of RPIX price inflation)	0.6%	0.0%	1.0%	1.0%
Real investment returns (net of RPIX price inflation)	2.0%	(5.6%)	2.0%	2.0%

Administration expenses

- E.37 The administration expenses relate to the collection of contribution income, the payment of benefit claims and general management costs. Investment expenses are taken into account through a reduction from the investment return earned by the Common Investment Fund (CIF) and this is reflected in the investment return assumption.
- E.38 Over the period from 2014 to 2019, administrative expenses for the three combined funds (the Insurance Fund, the Health Service Fund and the LTC Fund) have increased by about 1.5% a year, or 1.3% a year if depreciation is included.
- E.39 Up to 2019, administrative costs have been split between the three funds. However, under reforms to healthcare funding that are currently being implemented, the Health Service Fund will cease to operate and therefore all administrative costs will need to be borne by the Insurance Fund and the LTC Fund. This may lead to higher administrative costs for the two remaining funds, for example because fixed overheads are now spread between two rather than three funds. We have discussed this with the Social Security Department and, taking into account their comments, we have assumed that administrative costs for both funds will increase by 4% in 2022 (in addition to any inflationary increase).
- E.40 At previous reviews, it has been the practice to treat part of the administrative cost as salary-related, and therefore projected in line with earnings, and the balance as increasing in line with prices.
- E.41 The accounts for recent years show the total administrative costs across the three combined funds, together with a breakdown for each fund. They also show how the total cost is split between different cost types. For some items, e.g. staff costs, it is obvious that they are salary-related, but in other cases it is less clear e.g. charges paid to other Committees may contain a mix of salary-related and price-related costs. It is also likely that the mix of salary- and price-related costs will vary over time.

- E.42 We have calculated that, for the combined funds over the period 2015 to 2019, the salary-related costs represented just under 80% of the administration costs including depreciation but excluding the charges paid to the Committees.
- E.43 In theory, different assumptions might be made for the different funds, but given the uncertainties, a single assumption has been adopted for both the Insurance Fund and Long-term Care Fund. This assumption is that 80%⁶ of administration costs are salary-related and therefore are projected to increase from the 2019 level in line with earnings, with an additional 4% increase in 2022. All other administration costs are projected to increase from the 2019 level in line with prices, again with an additional 4% increase in 2022.

Contribution assumptions

- E.44 The key assumptions underlying the projections of contribution income are:
- proportions of the population assumed to be paying contributions in future years
 - future contribution rates and earnings limits
 - the distribution of future earnings
- E.45 Table A.2 below illustrates the assumptions adopted for the proportions of the population assumed to be making Class 1 contributions, together with the corresponding assumptions from the 2014 review. The 2019 assumptions were derived from the data supplied on the number of contributors combined with the population data. They represent the average proportions contributing (by age and sex) for the years 2015 to 2019.

Table A.2: Proportions of the population assumed to be making Class 1 contributions

Age	Men		Women	
	2014 review	2019 review	2014 review	2019 review
20	0.70	0.70	0.63	0.66
30	0.82	0.82	0.72	0.77
40	0.75	0.76	0.71	0.73
50	0.69	0.70	0.70	0.72
60	0.46	0.49	0.42	0.47

- E.46 These proportions are assumed to apply in all years. No adjustment is made to allow for the impact of the pandemic on employment. However, as noted in paragraph E.74 below, we have aligned the contribution income for 2020 with the latest forecasts for this received from the States' Treasury.
- E.47 These proportions are generally slightly higher than those used for the 2014 review, particularly for women and at older ages.
- E.48 Corresponding data were provided in respect of self-employed and non-employed contributors, which again allowed us to calculate the proportions paying Class 2 (self-employed) and Class 3 (non-employed) contributions over the period 2015 to 2019. These proportions are similar to those adopted for the 2014 review except that for this review it is

⁶ The equivalent assumption was 75% at the 2014 review.

assumed that a slightly lower proportion of men pay Class 2 contributions. Class 2 and 3 contributions are much less significant elements of overall contribution income.

- E.49 The proportions contributing are assumed to persist throughout the projection period, adjusted appropriately for the planned increase in pensionable age from age 65 in 2020 to age 70 in 2049.
- E.50 In projecting the development of the Fund balance, it is assumed that the current rates of contribution are maintained, unless stated otherwise. As stated above, contribution earnings limits are assumed to increase in line with the RPIX index plus one third of the real increase in median earnings above RPIX inflation.
- E.51 The contributor data supplied to GAD allowed us to derive a distribution of earnings of contributors. These provide information on earnings up to the upper earnings limit.
- E.52 The earnings distributions are considered separately by contribution class, sex, and age band and are assumed to remain constant at the 2019 distribution in future allowing for earnings inflation.
- E.53 Contribution income is projected by combining the future numbers of contributors, based on the relevant population projections, with the assumed earnings distribution allowing for the assumed up-rating of contribution limits and the relevant contribution rate.

Benefit assumptions

- E.54 The numbers in receipt of benefits are relatively small and the numbers and age profile can vary from year to year. This experience could change further over time, perhaps suggesting the use of alternative assumptions for future reviews. Experience may also change in light of developments arising from the Supported Living and Ageing Well Strategy. In order to reflect recent experience we have adopted age- and sex-specific assumptions for the proportions of the population in receipt of permanent and respite care based on the data provided for the years 2015 to 2019.

Permanent care

- E.55 Permanent care benefits account for nearly all of the benefit expenditure from the Fund. The key assumptions underlying the projections of permanent care benefit expenditure are:
- > the proportions of the population assumed to receive permanent care in future years
 - > the rate of benefit payable
- E.56 Table B.1 below outlines the assumptions for the proportion of the population assumed to be in receipt of permanent nursing care used for the 2014 and 2019 reviews for selected ages. The assumptions for the 2019 review are similar to those adopted for the 2014 review at younger ages and generally lower at ages 80 and over, for both males and females. These proportions are before offsetting those cases that are assumed to qualify for the higher rate of benefit for complex and exceptional cases (see below).

Table B.1: Proportion of the population receiving permanent nursing care

Age	Previous Review (2014)		Current Review (2019)	
	Males	Females	Males	Females
70	0.0030	0.0026	0.0041	0.0020
75	0.0050	0.0080	0.0064	0.0080
80	0.0130	0.0180	0.0110	0.0170
85	0.0270	0.0450	0.0260	0.0370
90	0.0700	0.0900	0.0520	0.0800
95	0.1000	0.1500	0.0800	0.1450
100	0.1250	0.2250	0.1200	0.1950

E.57 Table B.2 below outlines the assumptions for the proportion of the population in receipt of permanent residential care (including those also receiving the EMI supplement) used for the 2014 and 2019 reviews for selected ages. The 2019 assumptions for males are similar to those adopted for the 2014 review up to age 80, then higher up to age 89 and lower from age 91 upwards. The 2019 assumptions for females are generally similar to or lower than those adopted for the 2014 except at the oldest ages 97 and above where they are higher.

Table B.2: Proportion of the population receiving permanent residential care (including EMI supplement)

Age	Previous Review (2014)		Current Review (2019)	
	Males	Females	Males	Females
70	0.0040	0.0060	0.0040	0.0030
75	0.0075	0.0150	0.0090	0.0130
80	0.0200	0.0420	0.0200	0.0320
85	0.0330	0.0900	0.0600	0.0800
90	0.0900	0.1900	0.0900	0.1700
95	0.1850	0.2900	0.1550	0.2700
100	0.3600	0.3000	0.3200	0.3200

E.58 Based on the data received, the proportion of permanent residential care beneficiaries receiving the EMI supplement is assumed to be 30% for both males and females (compared to 18% and 30% respectively assumed for the 2014 review).

E.59 These age and sex-specific assumptions are assumed to persist throughout the projection period and will be applied to the projected population to produce projected numbers of beneficiaries. It will be important to review this assumption at future reviews as age-specific assumptions may be observed to vary over time.

E.60 All benefits are paid at the standard rate; no proportionate amounts are payable.

E.61 Expenditure on permanent benefits is projected by combining the future numbers of beneficiaries, determined as proportions of the projected population, with the benefit rate payable allowing for the assumed rate of benefit increases, including allowance for targeting specific benefit rates up to 2023, as described in paragraphs B.12 to B.16.

Respite care

E.62 The key assumptions underlying the projections of respite care benefit expenditure are:

- > the proportions of the population assumed to receive permanent care in future years
- > the rate of benefit payable

E.63 We have set the assumptions for the proportions of the population receiving benefits using the data provided for the years 2015 to 2019. Table B.3 below outlines the assumptions for the proportion of the population assumed to be in receipt of respite nursing care used for the 2014 review and for the 2019 review for selected ages. The 2019 assumptions are the same as those adopted for the 2014 review for up to age 70 and slightly lower at most higher ages, for both males and females.

Table B3: Proportion of the population receiving respite nursing care

Age	Previous Review (2014)		Current Review (2019)	
	Males	Females	Males	Females
70	0.0013	0.0012	0.0013	0.0012
75	0.0035	0.0025	0.0025	0.0022
80	0.0095	0.0050	0.0050	0.0032
85	0.0110	0.0075	0.0075	0.0042
90	0.0140	0.0100	0.0100	0.0053
95	0.0140	0.0125	0.0125	0.0085
100	0.0140	0.0150	0.0140	0.0150

E.64 Table B.4 below outlines the assumptions for the proportion of the population in receipt of respite residential care (including those also receiving the EMI supplement) used for the 2014 and 2019 reviews for selected ages. The 2019 assumptions for males are the same as those adopted for the 2014 review up to age 80, then higher up to age 92 and lower from age 94 upwards. The assumptions for females are the same as those adopted for the 2014 review except for ages 71 to 96, where they are lower.

Table B.4: Proportion of the population receiving respite residential care (including EMI supplement)

Age	Previous Review (2014)		Current Review (2019)	
	Males	Females	Males	Females
70	0.0030	0.0020	0.0030	0.0020
75	0.0060	0.0065	0.0060	0.0050
80	0.0120	0.0170	0.0120	0.0120
85	0.0195	0.0300	0.0240	0.0230
90	0.0280	0.0500	0.0360	0.0370
95	0.0500	0.0500	0.0410	0.0470
100	0.0620	0.0500	0.0460	0.0500

- E.65 Respite benefits can normally be provided for up to four weeks a year. Based on recent experience, the average duration for respite care is assumed to be 2 weeks, for both nursing and residential care (compared to 2.5 weeks assumed for the 2014 review).
- E.66 The proportion of respite residential care beneficiaries receiving the EMI supplement assumed to be 30% for males and 17% for females (compared to 14% and 8% respectively assumed for the 2014 review).
- E.67 These age and sex-specific assumptions are assumed to persist throughout the projection period and will be applied to the projected population to produce projected numbers of beneficiaries.
- E.68 All benefits are paid at the standard rate; no proportionate amounts are payable.
- E.69 Expenditure on respite benefits is projected by combining the future numbers of beneficiaries, determined as proportions of the projected population, with the benefit rate payable and the expected duration of respite benefits, allowing for the assumed rate of benefit increases, including allowance for targeting specific benefit rates up to 2023, as described in paragraphs B.12 to B.16.

Complex and exceptional cases

- E.70 We have been asked to include in the main projection the introduction of a higher rate of benefit payable for complex and exceptional cases of £1,112.00 a week in current terms. We have assumed this benefit is introduced from January 2022 and that any recipients of this benefit would otherwise have been in receipt of permanent nursing care.
- E.71 There is no information available on the number of recipients of this benefit, but the social security section has indicated that they expect around 10 cases a year. In comparison, there were 208 people receiving permanent nursing care benefit in 2019, which implies around 5% (10 divided by 208) of nursing care cases will receive the higher benefit.
- E.72 It has therefore been assumed that this higher benefit will be paid to 5% of the number of people projected to be receiving permanent nursing care benefit.

Alignment with accounts

- E.73 We have compared modelled contribution income and benefit expenditure in recent years with actual income and expenditure as recorded in the accounts. Based on this, we have, calculated alignment factors to bring the modelled amounts into line with the out-turn figures. These alignment factors are then applied, where material, to projected contributions and expenditure in all future years.
- E.74 In addition, in order to make an allowance for the impact of the pandemic, the modelled contribution income in 2020 has been aligned with the forecast contributions for that year estimated by the States Treasury. This adjustment has only been applied to 2020 and modelled contribution income in future years is unchanged.

Appendix F: Population projections

- F.1 The States Treasury provided the population projections adopted for this review. There were separate projections for Guernsey and Alderney, and these were added together to obtain the population covered by the Fund. The projections use an initial baseline population as at March 2019.
- F.2 There are consequently three main assumptions that are needed for projecting the future population:
- > rates of mortality
 - > fertility rates
 - > migration
- F.3 These assumptions were determined by the States and are summarised in the following table.

Table F.1: Summary of assumptions for the population projections

Mortality rates	Based on the England and Wales rates adopted by the Office for National Statistics (ONS) for their 2018-based population projections.
Fertility rates	<p>Total fertility rate (i.e. the number of children born to each woman) of 1.5. This is based on recent experience in Guernsey.</p> <p>A total fertility rate of about 2.1 is needed for a population to reproduce itself over the long-term, ignoring migration. This is greater than 2 because of the need to offset the effect of women who die before completing their reproductive life cycle.</p> <p>For comparison, the ONS central projections for the UK assumed that the total fertility rate in the long-term will average 1.78 for the 2018-based projections.</p>
Migration	<p>Net inward migration of 100 people a year</p> <p>Variant projections assuming net nil migration and net inward migration of 200 people a year</p> <p>Migration has been variable in recent years. Over the five years to 2019, inward migration averaged about 160 a year, whereas for the five years to 2014 there was <i>outward</i> migration that averaged 40 a year.</p>

F.4 We have not made any analysis to review the appropriateness of these assumptions. However, overall, there is no indication that they are unreasonable for the purpose of the actuarial review. Migration is particularly difficult to predict, and is influenced by a range of factors, including economic conditions, in both Guernsey and the migrants' home or destination countries, and the migration policy adopted. Future migration levels are therefore subject to significant uncertainty.

F.5 The charts below show how the population of Guernsey and Alderney is projected to develop over the next 60 years based on the assumptions discussed above, including the variant migration scenarios. The charts allow for the planned increase in the pension age from 65 to 70 between 2020 and 2049.

Chart F.1: Projection of Guernsey population assuming net inward migration of 100 a year

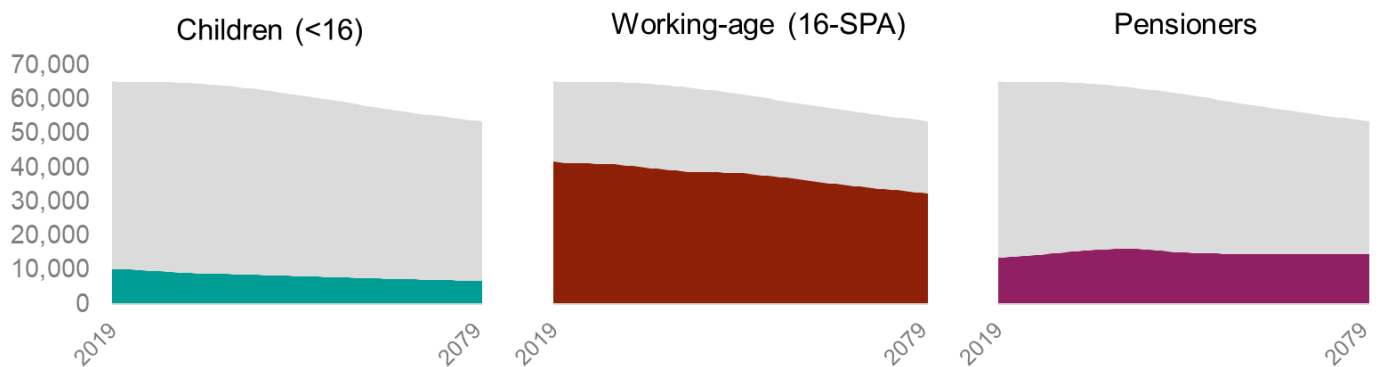


Chart F.2: Projection of Guernsey population assuming net inward migration of 200 a year

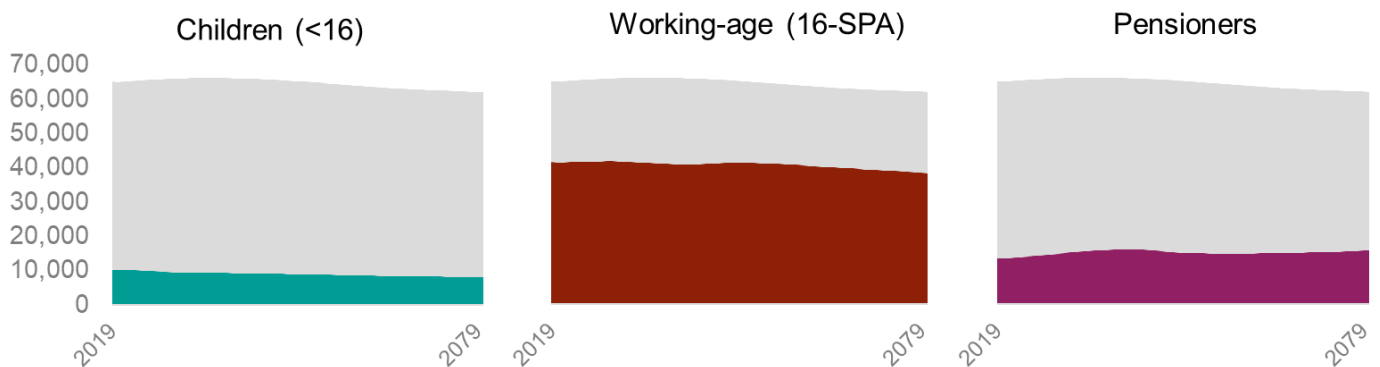
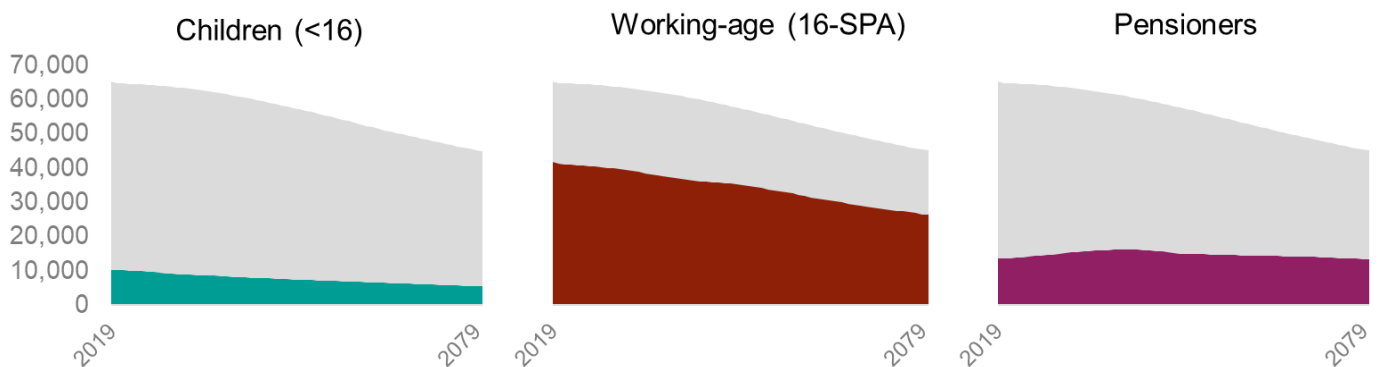


Chart F.3: Projection of Guernsey population assuming net nil migration



Appendix G: Summary of the projections

Table G.1: Summary of income and expenditure and the projected balance based on the principal assumptions (in cash terms)

£ millions	2020	2025	2030	2040	2050	2060	2070	2080
Opening fund balance	92.7	134.1	181.8	233.1	111.4	0.0	0.0	0.0
Contribution income:	28.0	34.5	40.4	55.6	76.3	101.9	136.0	182.4
Total income	28.0	34.5	40.4	55.6	76.3	101.9	136.0	182.4
Benefit expenditure:								
Residential home care	7.0	9.6	12.6	21.8	35.4	52.0	67.3	95.0
Residential home care with EMI	4.1	5.7	7.4	12.8	20.8	30.6	39.6	55.9
Nursing care	10.7	14.4	18.5	31.2	49.8	73.0	94.6	132.7
Exceptional care	0.0	0.2	0.3	0.4	0.7	1.0	1.3	1.9
Respite care	0.3	0.4	0.5	0.9	1.3	1.8	2.4	3.3
Administration	0.4	0.5	0.6	0.9	1.2	1.7	2.3	3.2
Total expenditure	22.6	30.9	39.9	67.9	109.3	160.1	207.4	292.0
Excess (shortfall) of income over expenditure	5.4	3.7	0.6	(12.3)	(33.1)	(58.2)	(71.5)	(109.6)
Investment return	(3.1)	6.2	8.3	10.3	4.3	0.0	0.0	0.0
Closing fund balance	95.1	143.9	190.6	231.1	82.6	0.0	0.0	0.0
Average balance as multiple of expenditure	4.2	4.5	4.7	3.4	0.9	0.0	0.0	0.0
Break-even contribution rate	1.5%	1.6%	1.8%	2.2%	2.6%	2.8%	2.7%	2.9%