



Government
Actuary's
Department

Guernsey Insurance Fund

Actuarial Review as at 31 December 2019

15 December 2020

Martin Clarke



THE SOCIAL INSURANCE (GUERNSEY) LAW 1978

REPORT BY THE GOVERNMENT ACTUARY ON THE OPERATION OF THE SOCIAL INSURANCE (GUERNSEY) LAW IN THE PERIOD 1 JANUARY 2015 TO 31 DECEMBER 2019

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

Section 102 of the Social Insurance (Guernsey) Law 1978 (as amended) provides for a review of the operation of that Law at least every five years. The purpose of the review is to consider the financial condition of the Guernsey Insurance Fund and the adequacy of the contributions payable. 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

15 December 2020

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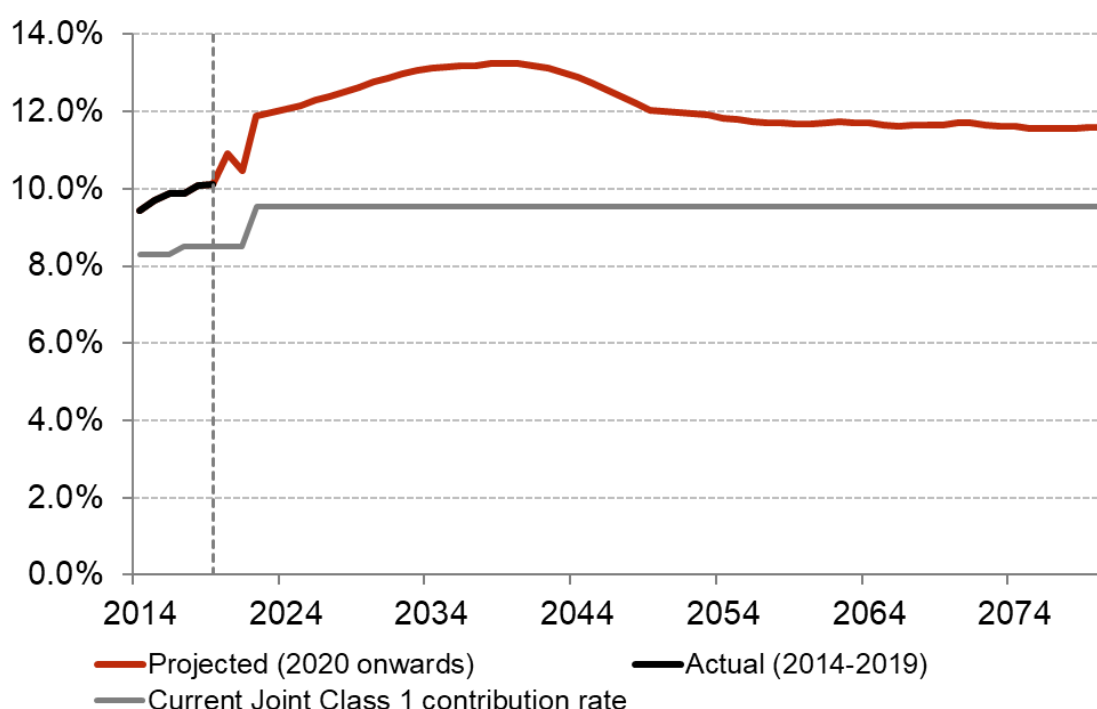
1. Executive Summary

- 1.1 The purpose of this report is to review the financial condition of the Guernsey 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.

Key findings

- 1.3 **The Fund had a balance equivalent to 4.7 times annual expenditure in 2019. However, based on my principal assumptions, the Fund balance is projected to decline if the currently anticipated rates of contribution are maintained¹. The projected balance falls below twice annual expenditure, the Committee’s current target, in 2032, and falls to zero in 2039.**
- 1.4 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
- 1.5 **The currently anticipated rate of contributions payable to the Fund is not adequate, based on the principal assumptions, to cover expenditure over the period to 2080. This is the reason why the Fund balance declines.**
- 1.6 Chart 1.1 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 8.5%, and this is due to rise to 9.55% following reforms to health service funding. As agreed, I have assumed that the contribution increase will apply from January 2022, at the same time that the States grant to the Fund is withdrawn.

¹ For this purpose, allowance is made for the increase in contributions allocated to the Fund and the withdrawal of the States grant as part of the reforms to health service funding. These changes are assumed to apply from 2022.

Chart 1.1: Break-even Class 1 contribution rate (employer plus employee) based on the principal assumptions

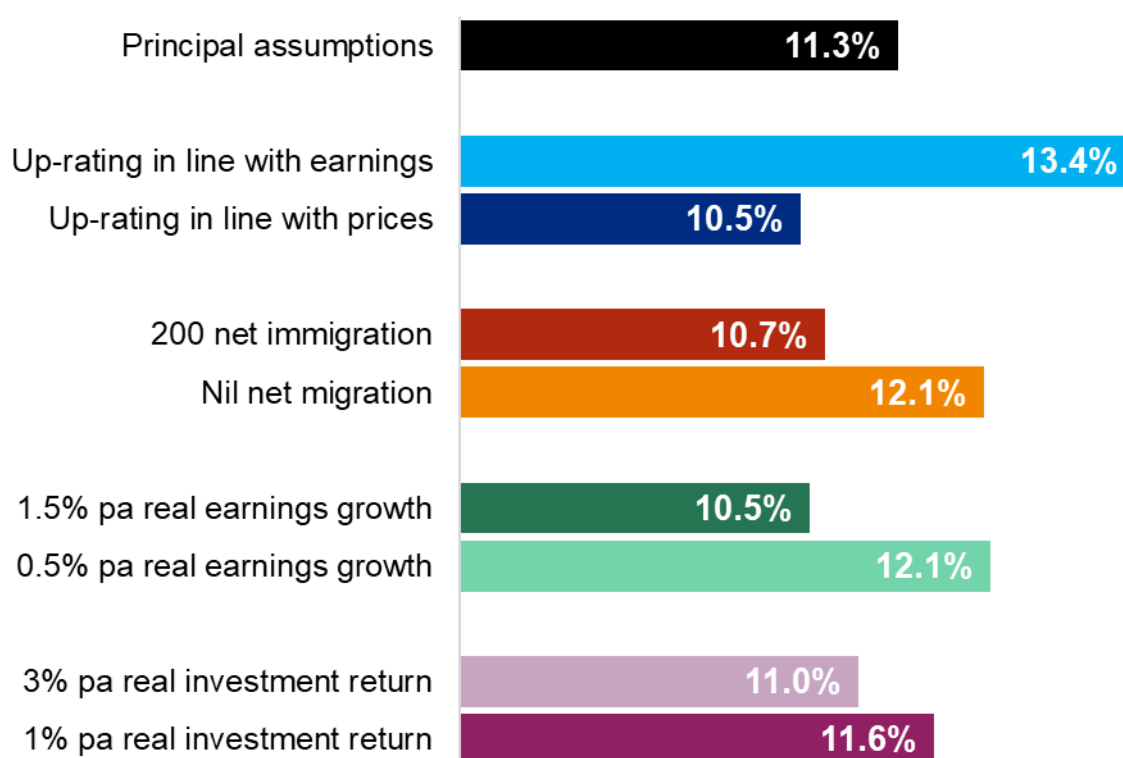
- 1.7 The break-even contribution rate is projected to remain above the currently anticipated rate of contributions throughout the projection period. This means that contribution income is not sufficient to cover expenditure from the Fund. The existing balance held by the Fund can be used to help finance 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.
- 1.8 **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.**
- 1.9 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 11.3% would need to be paid from January 2022 to target a balance of twice annual expenditure in 2080. This compares with the anticipated rate from 2022 of 9.55%.
- 1.10 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 in the table below. For self-employed and non-employed contributors, the break-even contribution rate would follow the same pattern, relative to the currently anticipated 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 currently anticipated rate from 2022 is 9.55%

Target Fund balance as multiple of expenditure	Required constant Class 1 contribution rate (employer plus employee)
2x	11.3%
4x	11.6%
6x	11.8%

- 1.11 The constant contribution rates are set to target the balance at the end of the projection period. The balance will not be maintained at this level at all times during the period.
- 1.12 **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.**
- 1.13 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 1.2: Constant contribution rates needed from January 2022 to target balance of twice expenditure in 2080 based on the different assumptions



- 1.14 The currently anticipated contribution rate (9.55% from 2022) would not be adequate to target a balance of twice expenditure in 2080 under any of these variant scenarios.
- 1.15 The results on variant assumptions are not intended to indicate the full range of possible future experience.

Professional standards and limitations

- 1.16 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.
- 1.17 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.

- 1.18 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.
- 1.19 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.

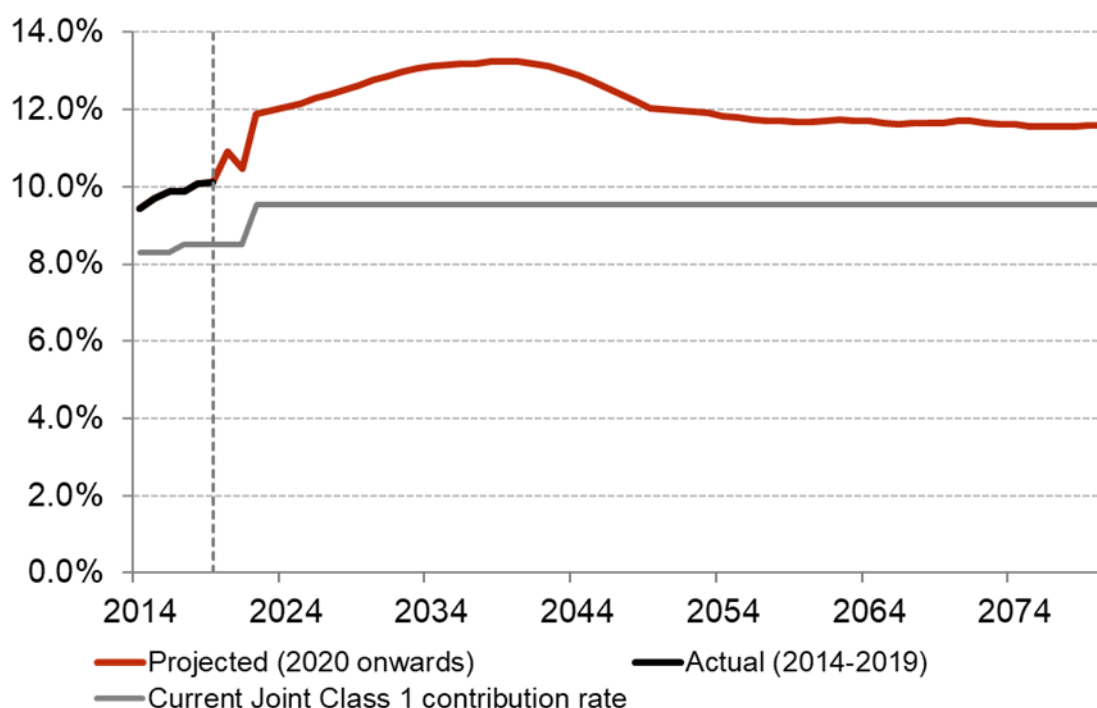
2. Results on principal assumptions

- 2.1 An overview of the Fund is given in Appendix A and 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 balance 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

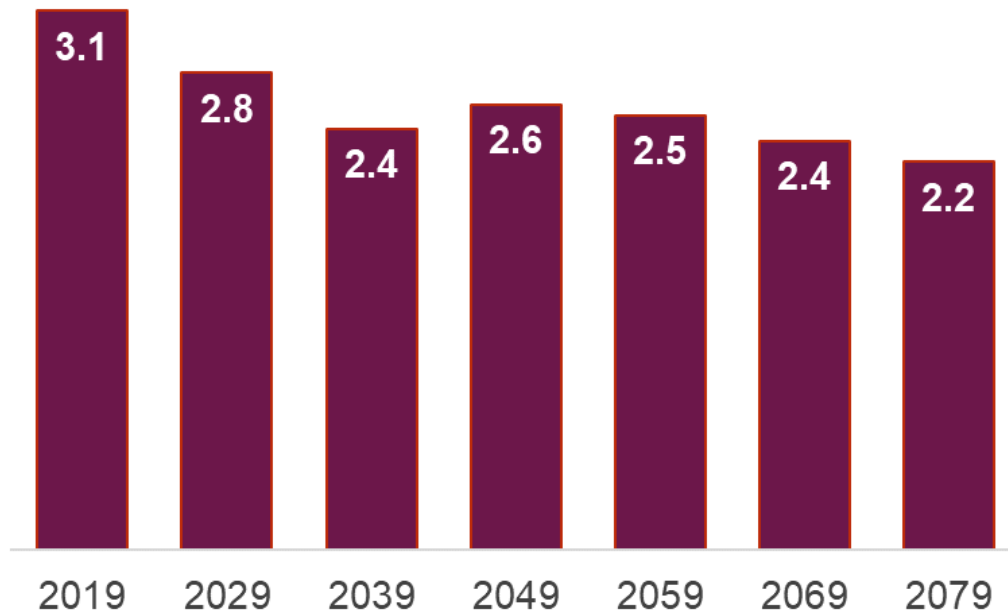
- 2.5 The break-even contribution rate in any year is the contribution rate needed to exactly balance contribution income with expenditure in that year. These contribution rates do not make any allowance for assets held, or the investment returns they earn. If the Fund held no assets, contributions would 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 anticipated rate of contributions payable, which is currently 8.5%, and which is assumed to rise to 9.55% from 2022 as part of the reforms to healthcare financing (see Appendix B).

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 The spike in the break-even rate in 2020 reflects the alignment of contribution income in that year with forecasts made by the States Treasury. This is done to make some allowance for pandemic effects. The jump in the break-even rate in 2022 reflects the assumption that the States grant ceases to be paid from that year. It is anticipated that the contribution rate payable will also increase from that time.
- 2.9 The break-even rate has been above the current rate of contributions in recent years and is projected to remain above this throughout the projection period, even after allowing for the anticipated increase in 2022.
- 2.10 Continuing the trend seen since 2015, the break-even rate increases over the first part of the projection period. This reflects the steep fall in the number of people of working age relative to the numbers over pension age, which is illustrated by the old age support ratio shown in the chart overleaf. The ratio only takes into account the population on the island. It does not therefore represent the complete picture as a significant part of old age pension expenditure is made to those living off the island.
- 2.11 Ignoring other factors, the smaller the value of the old age support ratio, the higher will be the break-even contribution rate required. Between about 2040 and 2050, the ratio increases, which is reflected in a fall in the break-even contribution rate. From 2050, the ratio declines again but gradually. Other things equal, this would lead to a slow increase in the break-even rate. In practice, the break-even rate is broadly flat. This is because contribution income largely increases in line with earnings whereas benefit rates are assumed to increase by less than earnings.

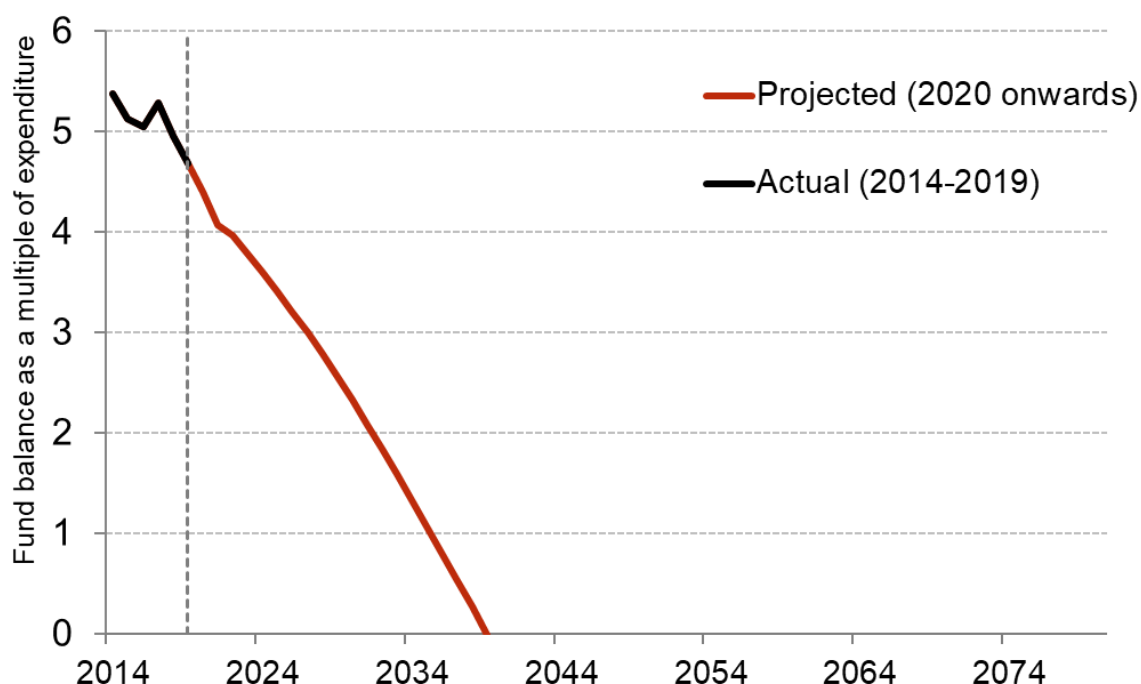
Chart 2.2: Old age support ratio (number of people of working age, age 16 to state pension age, for each person over state pension age) based on assumed inward migration of 100 people a year



- 2.12 The break-even rates shown above start off similar to the rates calculated in the actuarial review as at 31 December 2014. However, in the long-term the rates at this review are higher than those projected in the previous review. This is largely because this review allows for the withdrawal of the States grant and includes a higher assumed rate of benefits increases. This review assumes benefits increase in line with RPIX plus one third of the real increase in earnings, but the 2014 review assumed this level of increase would only apply up to 2024 with increases in line with RPIX only thereafter.
- 2.13 Section 4 provides a comparison of the break-even contribution rates calculated at the 2014 and 2019 actuarial reviews.

Projected Fund balance

- 2.14 In 2019, the Fund held a balance that corresponded to 4.7 times benefit and administration expenditure over the year. Chart 2.3 shows how the balance is projected to change over the next 60 years, assuming the contribution rates remain unchanged following the anticipated increase from 2022. This projection allows for the investment returns earned by the Fund, which are assumed to average 2% a year above RPIX.

Chart 2.3: Projected progress of the Fund balance based on the principal assumptions

- 2.15 The balance is projected to steadily decline as a multiple of expenditure and is projected to be exhausted in 2039. The Committee's current target is to hold a balance of twice expenditure: the balance is projected to fall below this by 2032.
- 2.16 The decline in the Fund balance reflects the shortfall between contribution income (based on the currently anticipated rates) and expenditure. Investment returns on the existing balance will partially offset this shortfall, but they are not enough to prevent the decline of the balance.
- 2.17 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.
- 2.18 At the 2014 review, the balance was projected to be exhausted in 2046. The projection at this review therefore indicates an earlier date. This is largely a consequence of the higher break-even contribution rates shown at this review, which imply a bigger shortfall between income and expenditure, and 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

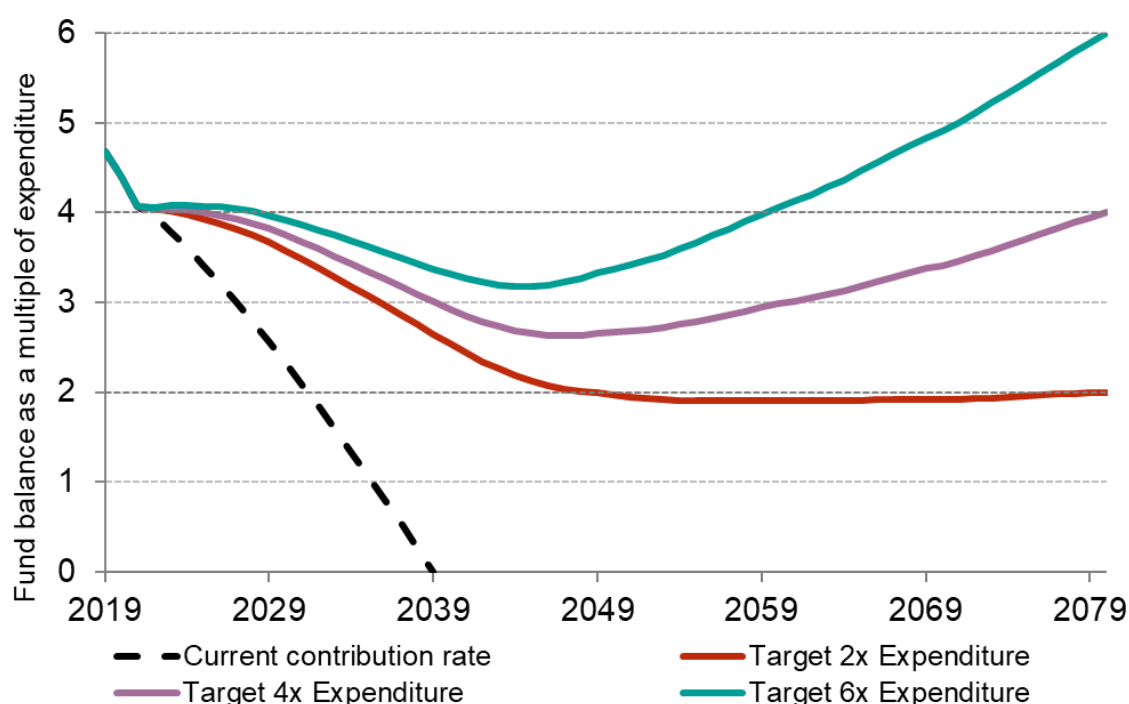
- 2.19 The Committee currently has a target to hold a balance that represents twice annual expenditure. I have therefore calculated the constant level of contributions required from January 2022 to target this balance at the end of the projection period in 2080.
- 2.20 In addition, as requested, I have calculated the constant contribution rates needed to target balances of 4- and 6-times expenditure in 2080.

2.21 These constant Class 1 contribution rates are set out in the table below. For self-employed and non-employed contributors, the break-even contribution rate would follow the same pattern, relative to the currently anticipated 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, compared with the currently anticipated rates.

Table 2.1: Constant contribution rates needed from January 2022 to target specified Fund balance in 2080; the currently anticipated rate from 2022 is 9.55%

Target Fund balance as multiple of expenditure	Required constant Class 1 contribution rate (employer and employee combined)
2 x	11.3%
4 x	11.6%
6 x	11.8%

Chart 2.4: Projected progress of the Fund balance if the contribution rates in Table 2.1 were implemented



2.22 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.

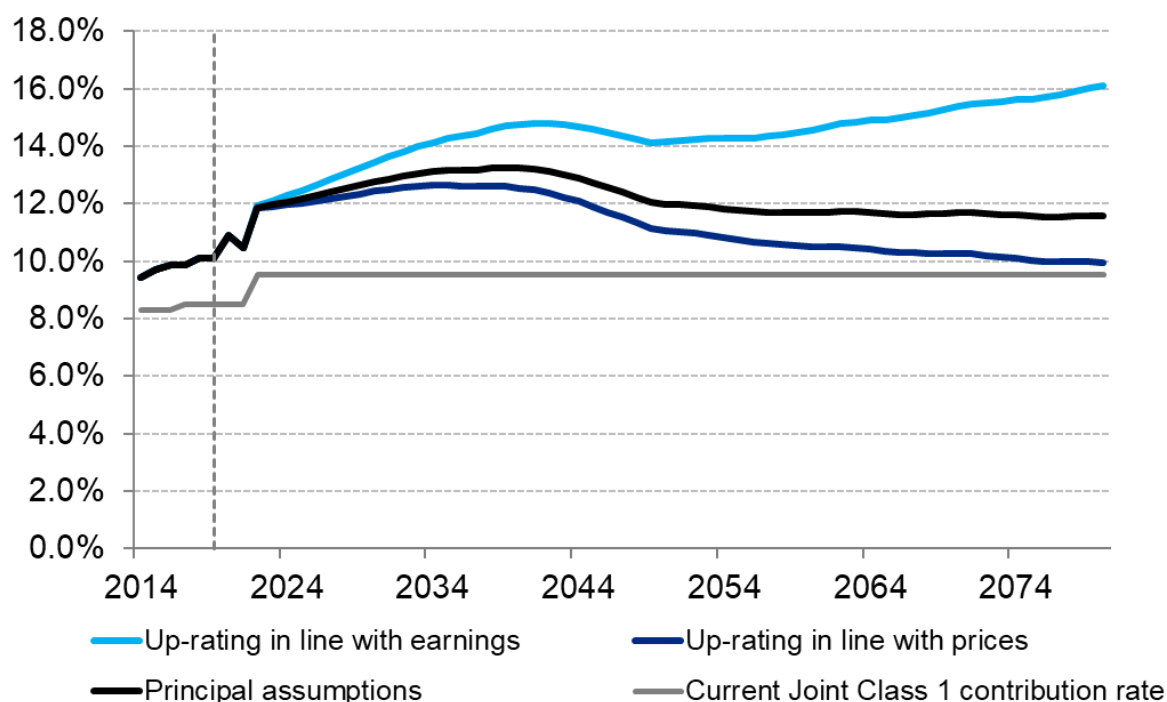
2.23 The balance under the “2x” scenario (the red line) is broadly stable at the end of the projection period. This means that, at that point, income less expenditure is sufficient to allow the balance to grow in line with expenditure. In contrast, for the other two scenarios, the balance is rising at the end of the projection period. This reflects that income less expenditure is sufficient to allow the balance to grow relative to expenditure.

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.

Variant up-rating scenarios

- 3.6 I have made projections assuming benefits and contribution limits are increased:
- > in line with RPIX
 - > in line with earnings
- 3.7 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

3.8 Under the principal up-rating assumption, the balance is projected to be exhausted in 2039. This is brought forward to 2036 assuming earnings up-rating or pushed back to 2041 under price up-rating.

3.9 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 currently anticipated rate from 2022 is 9.55%

Up-rating scenario	Required constant Class 1 contribution rate
Price up-rating	10.5%
Principal assumption	11.3%
Earnings uprating	13.4%

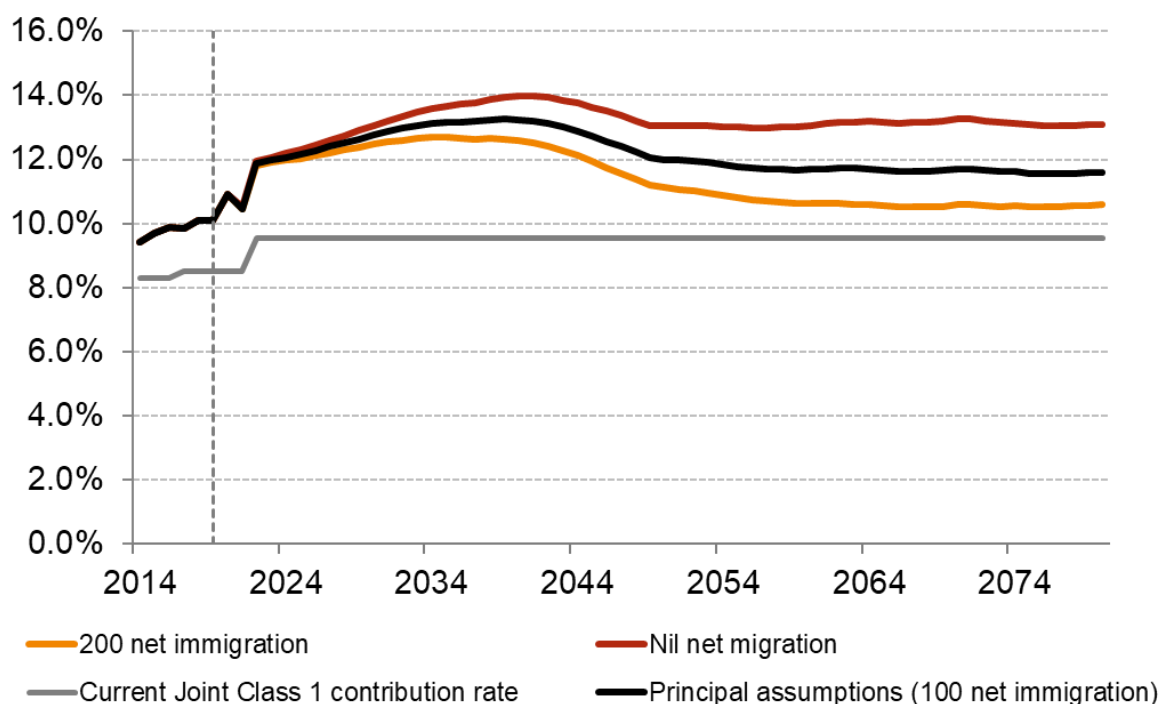
Variant migration scenarios

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

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

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

3.12 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

- 3.13 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 pension age.
- 3.14 Under the principal up-rating assumption, the balance is projected to be exhausted in 2039. This is brought forward to 2038 assuming net nil migration or pushed back to 2040 under the assumption of net inward migration of 200 people a year.
- 3.15 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 currently anticipated rate from 2022 is 9.55%

Migration scenario	Required constant Class 1 contribution rate
Net nil migration	12.1%
Principal assumption (net inward migration of 100 a year)	11.3%
Net inward migration of 200 a year	10.7%

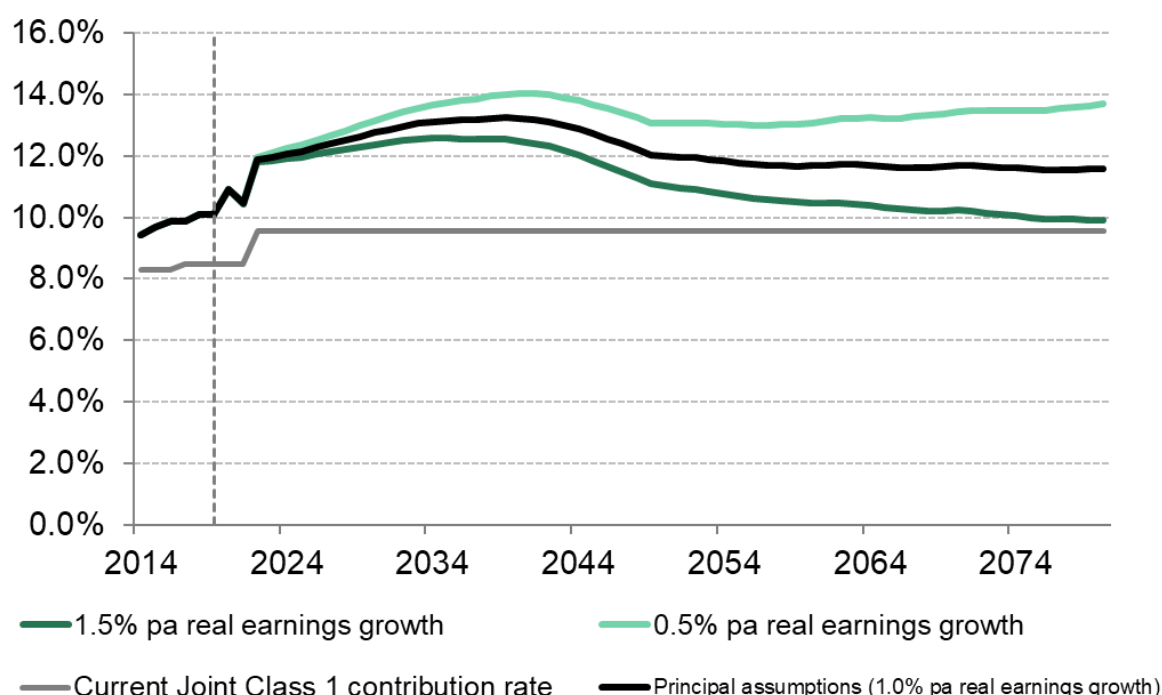
Variant real earnings growth scenarios

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

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

3.17 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



- 3.18 Lower assumed real earnings growth increases the projected break-even contribution rate. This is because this lower growth feeds through fully (apart from the effect of the contribution limits) into contribution income. However, lower 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.
- 3.19 Under the principal up-rating assumption, the balance is projected to be exhausted in 2039. This is brought forward to 2038 assuming lower real earnings growth or pushed back to 2040 under the assumption of higher real earnings growth.
- 3.20 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 currently anticipated rate from 2022 is 9.55%

Real earnings growth scenario	Required constant Class 1 contribution rate
0.5% a year	12.1%
Principal assumption (1.0% a year)	11.3%
1.5% a year	10.5%

Variant investment return scenarios

- 3.21 I have made projections assuming investment return, from 2021, of:
- > 1% a year above RPIX
 - > 3% a year above RPIX
- 3.22 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.
- 3.23 Under the principal up-rating assumption, the balance is projected to be exhausted in 2039. This is brought forward to 2038 assuming lower investment returns or pushed back to 2041 under the assumption of higher returns.
- 3.24 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.

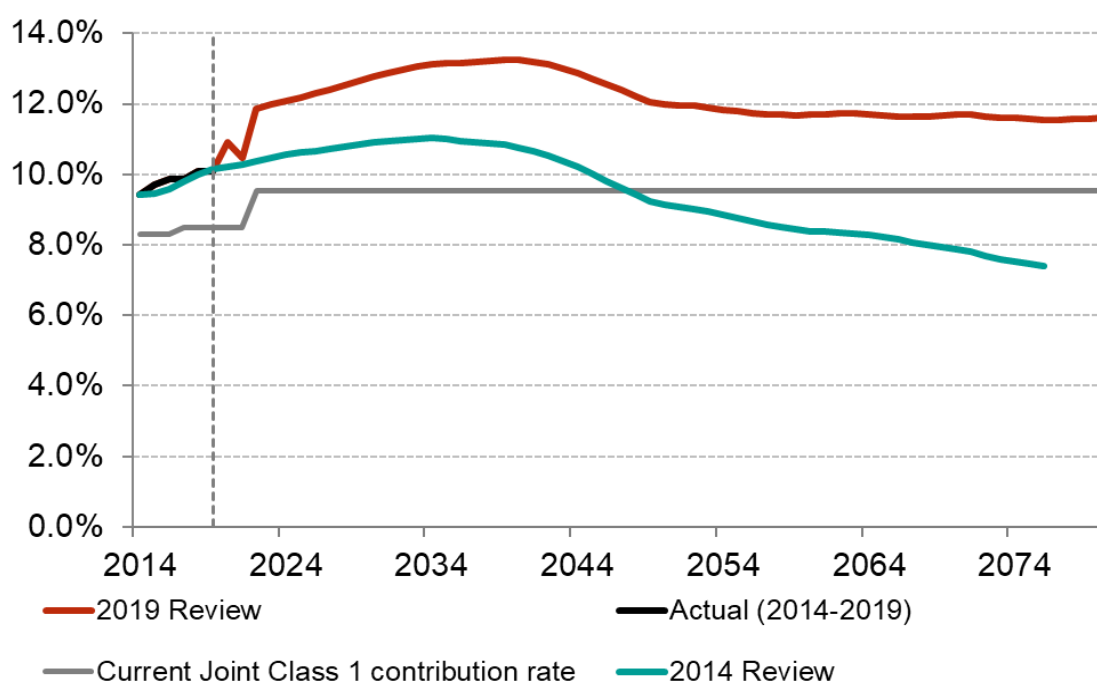
Table 3.4: Constant contribution rates needed from January 2022 to target a Fund balance of twice annual expenditure in 2080; the currently anticipated rate from 2022 is 9.55%

Investment return scenario	Required constant Class 1 contribution rate
1% a year	11.6%
Principal assumption (2% a year)	11.3%
3% a year	11.0%

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 higher 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	10.6%	11.0%	10.0%	8.8%	8.2%	7.5%
Change in up-rating assumption	0.0%	0.5%	0.9%	1.1%	1.4%	1.5%
Cessation of the States grant	1.6%	1.7%	1.6%	1.5%	1.4%	1.3%
Change in population projections	-0.5%	-0.7%	-0.7%	-0.7%	-0.8%	-0.4%
Reduction in real earnings growth	0.4%	0.8%	1.1%	1.4%	1.6%	1.9%
Change in contribution assumptions	-0.4%	-0.4%	-0.4%	-0.3%	-0.3%	-0.3%
Change in OAP assumptions	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%
Other changes	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%
2019 Review¹	12.2%	13.2%	12.7%	11.8%	11.7%	11.6%

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: At 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. At the 2014 review, it was assumed that this level of up-rating only applied up to 2024, and thereafter increased in line with RPIX only. The higher up-rating assumption at the 2019 review leads to higher break-even contribution rates.
- > States grant: the 2019 review allows for the States grant to be withdrawn from 2022. This means contributions need to finance all Fund expenditure and so increases the break-even contribution rate. I understand that the contribution rate to the Fund will be increased at the time the States grant is withdrawn.
- > Population projection: 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 pension age and this acts to reduce the break-even rate.
- > 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 lower earnings growth increases 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.
- > OAP assumptions: the updated assumptions on the proportions of the population drawing an OAP lead to an increase in the break-even contribution rate.
- > Other changes: these include the adjustments to the projection of contribution income in 2020 to make allowance for the coronavirus pandemic and changes to the assumptions for sickness and other benefits.

Appendix A: Overview of the Guernsey Insurance Fund

- A.1 The Guernsey Insurance Fund is a contributory social security scheme providing a range of benefits including old age, sickness, and unemployment benefits.
- 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 £741 million, which is equivalent to about 4.7 times annual expenditure.
- A.4 Appendix B provides a summary of the contributions payable and the benefits provided. For some benefits, it is not a requirement to be a Guernsey resident to receive the benefit and, in practice, the old age pension is paid to many individuals who do not remain on the Island in retirement.
- A.5 Contributions are paid by employers, employees, the self-employed and the non-employed. Contributions are not payable beyond pension age, except by the employer. The States also make a grant to the Fund, which is currently set at 14.7% of total contributions, but as part of healthcare reforms the grant is being withdrawn (see below).

Changes since the 2014 actuarial review

- A.6 With effect from January 2017, the Fund provides a wider range of parental benefits on the birth or adoption of a child. At the same time, the employer and employee contribution rates were each increased by 0.1%.
- A.7 As part of reforms to the funding of healthcare provision, the States has agreed at the meeting on 13 June 2019 the following changes that affect the Insurance Fund²:
- > The Fund should no longer receive a States grant
 - > To offset the withdrawal of the States grant, the overall rate of contributions paid to the Fund should be increased (with a corresponding reduction in health service contributions, so that the total contribution rate paid by individuals and employers is unchanged)
 - > The Fund should no longer pay the travelling allowance grant
- A.8 I have agreed with the social security department to assume that these changes take effect from January 2022.

² See the resolutions made on 13 June 2019 following consideration of the policy letter on “Reform of Health Care funding” dated 2 May 2019.

- A.9 Guernsey signed a reciprocal social security agreement with Latvia in September 2020. This will make it easier for individuals who have worked in Guernsey and Latvia to qualify for a Guernsey pension. The agreement is expected to come into force in 2021. I have made a broad allowance for this in the review, based on cost estimates provided by the Social Security department.

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. Guernsey has reciprocal social security agreements with a number of countries, whereby individuals who have contributed to a social security scheme in another country may receive small, part benefits from that country. This review does not allow for any impact from possible new future agreements. 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 employers, employees, the self-employed and the non-employed. Contributions are paid by, and on behalf of, employees earning above the lower earnings limit, with contributions payable on total earnings up to the upper earnings limit. Contributions are payable by the self-employed, subject to the same limits.
- 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 earnings limit but subject to the non-employed income allowance.
- B.4 As part of reforms to healthcare funding, the rates of contributions paid to the Fund are being amended³. These changes are assumed to apply from 2022.
- B.5 The table below shows the contribution rates applicable since 2015, including the assumed changes in 2022.

Table B.1: Contribution rates payable

	2015	2016	2017	2018	2019	2020	2021	2022 onwards
Employer	4.90%	4.90%	5.00%	5.00%	5.00%	5.00%	5.00%	6.60%
Employee	3.40%	3.40%	3.50%	3.50%	3.50%	3.50%	3.50%	2.95%
Total Employed	8.30%	8.30%	8.50%	8.50%	8.50%	8.50%	8.50%	9.55%
Self Employed	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	7.35%
Non-employed (Under state pension age)	5.70%	5.70%	5.70%	5.70%	5.70%	5.70%	5.70%	6.60%

- B.6 Employee, self-employed and non-employed contributions are payable until pension age. Employer contributions remain payable in respect of employees over pension age.

³ The revised rates have been taken from Table 6.1 in the policy letter on the reform of healthcare funding dated 2 May 2019 (P2019/37).

- B.7 Central funding is currently provided to the Fund by way of the States grant. The grant reduced from 15.0% to 14.7% of total contributions from January 2017. As part of the reforms to healthcare funding, the grant is being withdrawn, and this is assumed to apply from 2022.
- B.8 The above contribution rates are in respect of the Guernsey Insurance Fund only. Additional contributions are payable to the Long-term Care Insurance Fund and for health services. This review assumes that contribution income to the Insurance Fund is in line with contribution rates above and no allowance is made for any potential re-allocation of overall contributions.

Benefits

- B.9 Benefits are payable to “insured” persons, that is, those who are paying or have paid contributions to the Guernsey Insurance Fund.
- B.10 Old age pension is the most significant benefit, accounting for around 85% of total expenditure in 2019. Incapacity Benefit is the second largest element of expenditure and accounted for less than 6% of total expenditure in 2019. All other benefits each accounted for less than 3% of total benefit expenditure in 2019.
- B.11 The table below shows the weekly rates of benefit for the most significant benefits.

Table B.2: Benefit rates payable

Weekly rate	2015	2016	2017	2018	2019	2020
Old age pension						
Main rate	£201.03	£204.45	£206.09	£212.27	£217.36	£222.58
Addition for dependents ⁴	£100.70	£102.41	£103.23	£106.33	£108.88	£111.49
Incapacity benefit						
Full rate	£177.80	£180.81	£182.28	£187.74	£192.22	£196.84
Sickness benefit						
Full rate	£147.91	£150.43	£151.62	£156.17	£159.95	£163.80

Old age pension

- B.12 Old age pension is a weekly benefit payable to men and women on reaching pension age, currently age 65. Eligibility and the level of benefit payable are both dependent on the beneficiary's contribution record.
- B.13 To receive a pension at the full benefit rate, an average of at least 50 contributions must be paid each year over a 45-year period. A proportionately reduced benefit is paid where this condition is not met. However, no pension is payable if the yearly average is less than 10, unless assisted by a Reciprocal Agreement.

⁴ Addition for dependants is payable only to certain existing recipients.

B.14 Different rules applied for women married before 1 January 2004. There remain some transitional arrangements whereby a woman married before 1 January 2004 may be able to use part of her husband's record to improve her rate of pension.

B.15 Pension age is due to increase to age 70 between 2020 and 2049.

Incapacity benefits

B.16 There are a number of different benefits that may be payable on illness or injury:

- Sickness Benefit is a weekly benefit payable for up to six months if an individual is incapable of work due to illness or injury.
- Industrial Injury Benefit is a weekly benefit payable for the first six months of an illness which is connected with an injury at work.
- Incapacity Benefit (previously called Invalidity benefit) is a weekly benefit payable after Sickness Benefit or Industrial Injury Benefit has been paid for six months.
- Industrial Disablement Benefit is a weekly benefit payable if an individual has a long-term disability which is a direct result of an accident at work or certain diseases or conditions contracted at work.
- Industrial Medical Benefit is a one-off payment or series of payments to meet the cost of treatment connected with an accident at work or certain diseases or conditions contracted at work.

B.17 Payment of sickness benefit and invalidity benefit is subject to at least 26 contributions having been paid at any time and at least 26 contributions having been paid or credited in the relevant contribution year. No benefit is paid in respect of illness of fewer than 4 days and partial weeks are paid proportionately. The amount received depends on the contribution record.

Bereavement benefits

B.18 There are three bereavement benefits that may be payable on the death of a spouse:

- Bereavement Payment is a lump sum payment payable to all widows and widowers.
- Widowed Parent's Allowance is a weekly benefit payable to widows and widowers with dependent children.
- Bereavement Allowance is a weekly benefit, payable for up to one year, to widows and widowers below pension age who do not have dependent children.

B.19 Payment of bereavement benefits is subject to the same contribution conditions as for old age pension, based on the late spouse's record at date of death, rather than at pension age.

B.20 Bereavement benefits changed with effect from 1 January 2004. Different rules continue to apply to those widowed before 1 January 2004 but only a small number of legacy cases remain.

Travelling allowance grant

- B.21 A Travelling Allowance Grant (TAG) provides funding and reimbursement of travel expenses for patients visiting Jersey or the UK when medical treatment is not available in Guernsey or Alderney, and also for Alderney patients requiring treatment in Guernsey.
- B.22 Following reforms to healthcare funding, the States has decided that the TAG should no longer be provided from the Insurance Fund. As agreed with the social security department, we have assumed that the Fund ceases to finance the TAG from 2022.

Unemployment benefit

- B.23 Unemployment benefit is a weekly benefit payable for up to 210 days if an individual is registered as unemployed and seeking work with an employer. Payment of unemployment benefit is subject to at least 26 contributions having been paid at any time as an employed person and at least 26 contributions having been paid or credited as an employed person in the relevant contribution year. Generally, contributions paid as a self-employed person or non-employed person do not count for Unemployment Benefit.
- B.24 To receive the full benefit rate, at least 50 contributions must be paid in the relevant contribution year. A proportionately reduced benefit is paid where this condition is not met.

Parental benefits

- B.25 From January 2017, Maternity Benefits were replaced with new Parental Benefits. The benefits provided from January 2017 are:
- Maternity Grant – a lump sum payable to all mothers of newborn children regardless of whether or not they are eligible for any other maternity/parental benefits
 - Maternal Health Allowance – a weekly benefit payable to women in the pre-birth or initial post-birth period for a minimum two week period.
 - Newborn Care Allowance – a weekly benefit payable following the end of the compulsory two week maternal health allowance period, payable to either parent at the same rate as Maternal Health Allowance. Maternal Health Allowance and Newborn Care Allowance are payable for maximum combined period of 26 weeks
- B.26 In addition, the 2017 reform introduced benefits payable upon the adoption of a child:
- Adoption Grant – a lump sum payable to either adoptive parent on the adoption of a child, payable at the same rate as the Maternity Grant
 - Parental Allowance – a weekly benefit payable to either parent following the adoption of a child, payable at the same rate as Maternal Health Allowance and Newborn Care Allowance. Parental Allowance is payable for a maximum period of 26 weeks.
- B.27 Payment of Maternal Health Allowance, Newborn Care Allowance and Parental Allowance is subject to at least 26 contributions having been paid at any time as an employed or self-employed person and at least 26 contributions having been paid or credited as an employed or self-employed person in the relevant contribution year.

B.28 To receive the allowance benefits at the full rate, at least 50 contributions must be paid in the relevant contribution year. A proportionately reduced benefit is paid where this condition is not met.

B.29 Prior to 2017, the two maternity benefits were:

- Maternity Allowance – a weekly benefit payable to expectant mothers for a maximum of 18 weeks, subject to same contribution conditions as for sickness benefit and invalidity benefit
- Maternity Grant – a lump sum payment made to insured expectant mothers who are not entitled to Maternity Allowance or who opt for Maternity Grant instead.

Death grant

B.30 Death Grant is a one-off payment paid as a lump sum to help with funeral expenses. It is payable on the death of an insured person, their spouse or child, with payment subject to contribution conditions similar to those for old age pension, based on the deceased's record, or the parent's record in the case of a child.

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	702,100	676,837	731,249	769,278	712,516
Income					
Contributions	100,117	102,035	106,582	109,764	113,860
States Grant	15,018	15,305	15,668	16,135	16,737
Total Income	115,135	117,340	122,250	125,899	130,597
Outgo					
Benefits	129,809	134,649	137,246	144,918	150,745
Administration Costs	4,656	4,860	4,579	4,611	4,409
Total Outgo	134,465	139,509	141,825	149,529	155,154
Operating Surplus / Deficit	-19,330	-22,169	-19,575	-23,630	-24,557
Return on Investments	-5,933	76,581	57,604	-33,132	52,840
Balance at 31 December	676,837	731,249	769,278	712,516	740,799

C.2 Although expenditure has exceeded income from contributions and the States grant, the Fund balance has increased over the period 2015 to 2019. This is largely due to high investment returns achieved in 2016, 2017 and 2019.

C.3 Since 2014, benefit expenditure has increased on average by about 4% a year. Increases in benefit expenditure are largely driven by increases in old age pension benefits. Expenditure on parental benefits also increased significantly in 2017 due to the new, more generous benefits.

C.4 Overall, the growth in the balance has not kept pace with the increase in expenditure. Therefore, the Fund balance as a proportion of expenditure has decreased from 5.4 in 2014 to 4.7 in 2019.

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
Old Age Pension	110,708	115,436	117,477	123,455	128,742
Sickness Benefit	3,597	3,778	3,862	4,134	4,519
Industrial Injuries Benefit	213	185	181	267	254
Incapacity Benefit	8,118	8,095	7,990	8,577	8,843
Industrial Disablement Benefit	533	512	496	528	526
Industrial Medical Benefit	130	101	128	139	169
Bereavement Benefits	1,517	1,550	1,551	1,498	1,405
Travel Allowance Grant	2,095	2,070	2,043	2,785	2,524
Unemployment Benefit	1,356	1,373	998	898	940
Parental Benefits	1,194	1,208	2,130	2,268	2,481
Death Grant	310	346	373	350	350
Other	38	-5	17	19	-9
Total	129,809	134,649	137,246	144,918	150,745

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 data⁵ - 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

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

	2015	2016	2017	2018	2019
Old Age Pension	17,230	17,524	17,828	18,121	18,389
Incapacity Benefit	871	862	853	870	878
Industrial Disability Benefit	189	178	168	164	163
Bereavement Allowance and Widowed Parent's Allowance	168	157	157	142	123

⁵ These figures exclude "deficiency notices" and "accounts".

Table D.3: Summary of beneficiaries' data (number of new awards)

	2015	2016	2017	2018	2019
Sickness Benefit	9,319	9,613	9,109	10,293	9,984
Unemployment Benefit	1,020	940	762	635	579
Parental Benefits ⁶ (inc. adoption)	418	409	448	446	450
Maternity/Adoption Grant	68	72	410	502	520
Industrial Illness Benefit	469	427	365	443	520
Industrial Medical Benefit	900	762	795	909	979
Bereavement Payment	232	282	285	284	303
Death Grant	568	653	681	614	625
Travel Allowance Grant	1,014	875	923	953	945

- 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.

⁶ Figures for 2015 and 2016 are for the previous maternity allowance/maternity grant. See Appendix B for details on the changes to parental benefits in 2017.

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, benefits and 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

drawbacks⁷ 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.
- 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 2020⁸, 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.

⁷ 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/>

⁸ See <https://obr.uk/fsr/fiscal-sustainability-report-july-2020/>

- 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 document⁹).
- 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

⁹ This refers to the target being based on 3-month LIBOR, but we understand that this should 6-month LIBOR.

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%¹⁰ of administration costs are salary-

¹⁰ The equivalent assumption was 75% at the 2014 review.

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.92 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 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

Old age pension

- E.54 Old age pension currently accounts for around 85% of the expenditure on benefits from the Fund. The key assumptions underlying the projections of old age benefit expenditure are:
- > the proportions of the population assumed to receive a pension in future years
 - > the proportion of the full benefit rate expected to be paid on average
- E.55 The data provided on the numbers of old age pensions in payment, together with the population data, allowed us to calculate the proportion of the Guernsey population that is in receipt of an old age pension for each year from 2015 to 2019. The proportions exceed 100% as in practice pensions are paid to many individuals who do not remain on the Island in retirement.
- E.56 It is assumed that the proportions of the Guernsey population in receipt of an old age pension in 2020 is equal to the average proportion shown in the data for the years 2015 to 2019. These are shown in the following table, together with the corresponding proportion assumed at the 2014 review.

Table A.3: Assumed proportion of the population receiving old age pension in 2020

Age group	2014 Review Proportion in 2020	2019 Review
65-69	140%	130%
70-74	140%	145%
75-79	155%	155%
80-84	140%	140%
85-89	130%	130%
90+	120%	115%

- E.57 Our analysis indicates that the proportion of the population in receipt of an old age pension at ages 65-69 and 90 and over in recent years has been lower than the assumptions made at the previous review, with the proportion at ages 70-74 being higher. The assumptions are the same for the other ages shown.

- E.58 The above age-specific proportions for 2020 are applied on a cohort basis¹¹ over the projection period. A proportion of 130% is assumed to apply to all future cohorts reaching state pension age.
- E.59 The proportion of the full pension rate paid depends on individuals' contribution records. Data on amounts of old age pension paid has been provided. The data reflect all payments made within a calendar year, including payments in respect of new awards and cessations in the year. Using these data directly, including pensions that were in payment for only part of the year, would provide for a deflated average proportion of the standard benefit rate in payment. We have made some adjustments to the data to remove new awards and cessations in the year.
- E.60 We have analysed the adjusted data by age, comparing amounts paid by age against the corresponding number of benefits in payment for each year to calculate the proportion of the standard benefit rate paid. This shows that the proportions have varied by age. We have not been able to analyse the proportions by sex as data by sex were not readily available.
- E.61 Our analysis indicates that the proportion of the standard benefit rate paid in recent years is higher for those aged 65 to 74 than the assumptions made at the previous review and lower for older ages.
- E.62 It is assumed that the proportion of the standard benefit rate payable in 2020 is equal to the average proportion shown in the data for the years 2015 to 2019. These are shown in the following table, for selected ages together with the corresponding proportion assumed at the 2014 review.

Table A.4: Assumed proportion of the old age pension standard benefit rate paid in 2020

Age group	2014 Review Proportion in 2020	2019 Review
65-69	62%	67%
70-74	62%	60%
75-79	57%	56%
80-84	57%	59%
85-89	60%	62%
90+	65%	67%

- E.63 As with the proportions of the population receiving a pension, the above age-specific proportions for 2020 are applied on a cohort basis over the projection period. A proportion of 67% is assumed to apply to all future cohorts reaching state pension age.
- E.64 The assumed proportions are higher than the assumptions made for the previous review for most age groups except 70-79, where they are lower.
- E.65 Expenditure on old age pension is projected by multiplying together (by age group) the assumed proportions receiving a pension, the projected population, the assumed average

¹¹ For example, the proportion at age 70 in 2020 applies to age 71 in 2021 and 72 in 2022 etc.

proportion of the full benefit rate payable and the 2020 pension rate allowing for the assumed rate of pension increases.

Incapacity benefits

E.66 The key assumptions underlying the projections of expenditure on incapacity benefits are:

- > the expected number of awards each year per head of the insured population
- > the expected duration of each claim
- > the average proportion of the standard benefit rate expected to be paid

E.67 The table below details the assumptions adopted for each of the incapacity benefits. These assumptions are based on data provided detailing the number of beneficiaries, the current benefit rates and the expenditure shown in the accounts on these benefits in recent years. The figures in brackets show the corresponding assumptions adopted in the 2014 review.

	Expected number of awards each year per head of the insured population	Expected duration of claim (including allowance for average proportion of the standard benefit rate expected to be paid)
Sickness benefit	New awards: Males – 23% (25%) Females – 33% (35%)	19.0 days (16.5 days)
Industrial injury benefit	New awards: Males – 2% (2%) Females – 1% (1%)	22.5 days (21.5 days)
Invalidity benefit	Average number in payment: Males - 1% (1%) at age 20, increasing to 7% (9%) by age 65. Females - 1% (1%) at age 20, increasing to 7% (6%) by age 65.	Paid throughout the year at 100% (95%) of the standard benefit rate.
Industrial disablement benefit	Average number in payment: 0.5% (0.6%)	Paid throughout the year at 35% (35%) of the standard benefit rate.
Industrial medical benefits	New awards: 2.4% (2.8%)	One-off payment. Average payment in 2019 assumed to increase in line with the principal up-rating assumption.

E.68 These assumptions are assumed to persist throughout the projection period.

E.69 Expenditure on incapacity benefits is projected by combining the future numbers of beneficiaries, based on the projected insured population, with the assumed average proportion of the full benefit rate payable and the expected duration of payment and the 2020 benefit rate allowing for the assumed rate of benefit increases.

Bereavement benefits

- E.70 The key assumptions underlying the projections of expenditure on bereavement benefits are:
- > the proportion of the population assumed to be widowed in future years
 - > the proportion of those widowed receiving each bereavement benefit
 - > the average proportion of the full benefit rate expected to be paid
- E.71 The proportion of the population assumed to be widowed in the future is based on the Great Britain 2008 marital status projections for the proportions of widows and widowers in the population. These proportions are age-specific and are projected to change over time. These proportions are applied to the assumed Guernsey population projections.
- E.72 We have adopted age- and sex-specific assumptions for the proportions of those widowed receiving each benefit.
- E.73 The number of Bereavement Payment awards is assumed to range from 15% of the male widowed population aged 30, decreasing to 3% by age 95 and from 15% of the female widowed population aged 25, decreasing to 1% by age 95. The assumptions are generally similar to or slightly higher than those adopted for the 2014 review, except for younger females.
- E.74 The average number of Widowed Parent's Allowance awards assumed to be in payment is assumed to range from 15% for widowed males aged 30, increasing to 30% for ages 45-49 and decreasing to 5% by age 64. The corresponding assumptions for females is 20% for widowed females aged 25, increasing to 75% for ages 40-44 and decreasing to zero by age 60. The assumptions are generally slightly higher than or similar to those adopted for the 2014 review for males. For females the assumptions are generally higher, except for younger ages 25-34 where they are lower.
- E.75 The average number of Bereavement Allowance awards is assumed to be 5% of the male widowed population aged 40 to 44, 10% for ages 45-49, then 5% for ages up to 64 and 5% of the female widowed population aged 30 to 49, increasing to 30% by age 60. The assumptions are generally the same as those adopted for the 2014 review for males. For females the assumptions are slightly higher at younger ages 30-44 and lower for older ages.
- E.76 All awards are assumed to be paid at 72% of the standard benefit rate with the average number of Widowed Parent's Allowance and Bereavement Allowance awards assumed to be paid throughout the year. This is the same percentage as assumed for the 2014 review.
- E.77 Expenditure on bereavement benefits is projected by combining the future numbers of beneficiaries, based on the projected numbers widowed and proportions receiving each benefit, with the assumed average proportion of the full benefit rate payable and the 2020 benefit rates allowing for the assumed rate of benefit increases.

Travelling allowance grant

- E.78 The key assumptions underlying the projections of expenditure on the travelling allowance grant are:
- > the proportions of the population assumed to receive a Travelling Allowance Grant
 - > the average benefit expected to be paid

It is assumed that, on average, 1.5% of the population will receive this benefit in each year (compared to 1.6% assumed for the 2014 review).

- E.79 Expenditure on the travelling allowance grant is projected by combining the future numbers of grants, based on the projected population, with the average cost per grant in 2019 increased in line with the principal up-rating assumption. Travelling allowance grants will no longer be paid from the Fund from 1st January 2022 onwards.

Unemployment benefit

- E.80 The key assumptions underlying the projections of expenditure on unemployment benefits are:
- > the proportions of the insured population assumed to receive unemployment benefit
 - > the expected duration of each claim (including allowance for the average proportion of the standard benefit rate expected to be paid)
- E.81 It is assumed that the average number of awards in payment per head of the insured population will be 2.2% and that each award will be paid for 9.3 weeks at the full standard benefit rate (compared with 3.2% and 8.5 weeks payment assumed for the 2014 review). The changes partly reflect removal from the data of ineligible claims, which it was not possible to do with the data for the 2014 review. These assumptions are assumed to persist throughout the projection period.
- E.82 Expenditure on unemployment benefit is projected by combining the future number of beneficiaries, based on the projected insured population, with the assumed average proportion of the full benefit rate payable and the expected duration of payment and the 2020 benefit rate allowing for the assumed rate of benefit increases.

Maternity benefits

- E.83 The key assumptions underlying the projections of expenditure on maternity and parental benefits are:
- > the proportion of births giving rise to a maternity grant
 - > the proportion of births giving rise to parental benefits (introduced in 2017)
 - > the average expected duration of each parental benefit award (assuming the standard benefit rate is paid in full for each claim).
- E.84 It is assumed that 100% of births will give rise to a maternity grant, reflecting the introduction in 2017 of new parental benefits, with all awards assumed to be paid at the full benefit rate.
- E.85 84% of births are assumed to give rise to a maternity allowance or corresponding parental benefits. The average expected duration of each award, assuming the standard benefit rate is paid in full for each claim, is 22.5 weeks. The corresponding assumptions made for the 2014 review were 82% of births and 23 weeks payment.
- E.86 Expenditure on maternity benefits is projected by combining the number of births, based on the population projections, the proportion giving rise to each of the benefits and the assumed duration of maternity allowance and the 2020 benefit rate allowing for the assumed rate of benefit increases.

Adoption benefit

- E.87 Payments of grants and parental allowances on adoption were introduced in 2017. There is very little data on which to base assumptions for future expenditure on these. Based on the number of cases in 2018 and 2019 it is assumed that there will be 6 payments of adoption grant and 4 payments of parental allowance on adoption per annum in future. The average expected duration of each award of allowance, assuming the standard benefit rate is paid in full for each claim, is assumed to be the same as for maternity allowance, i.e. 22.5 weeks.

Death grant

- E.88 The key assumptions underlying the projections of expenditure on death grant benefits are:
- > the proportion of deaths giving rise to a grant
 - > the average proportion of the full benefit rate expected to be paid
- E.89 It is assumed that 108% of deaths will give rise to the award of death grant (meaning that some grants are awarded in respect of deaths occurring outside Guernsey) and that, on average, 92% of the full benefit rate will be paid. The corresponding assumptions made for the 2014 review were 90% of deaths and 96.5% of the full payment.
- E.90 Death grant expenditure is projected by combining the number of awards, based on the projected population and the proportion giving rise to a grant, and the average proportion of the full benefit rate expected to be paid, and the 2020 benefit rate allowing for the assumed rate of benefit increases.

Alignment with accounts

- E.91 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.92 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.
- F.6 The charts also show the old age support ratio (OASR). This is defined as the number of people of working age (age 16 and above) as a multiple of the number of people over pension age (in each case only considering the population in Guernsey and Alderney). The charts allow for the planned increase in the pension age from 65 to 70 between 2020 and 2049.
- F.7 The OASR is particularly relevant to social security systems that are financed on a pay-as-you-go basis. This is because, under this financing system, income from current contributors covers the current benefit and administration expenditure. Therefore, the smaller the number of people of working age for each person who has reached pension age, the higher the required contribution rate (other things being equal). However, this relationship is less strong for Guernsey as a large proportion of pensions are payable outside the island.

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

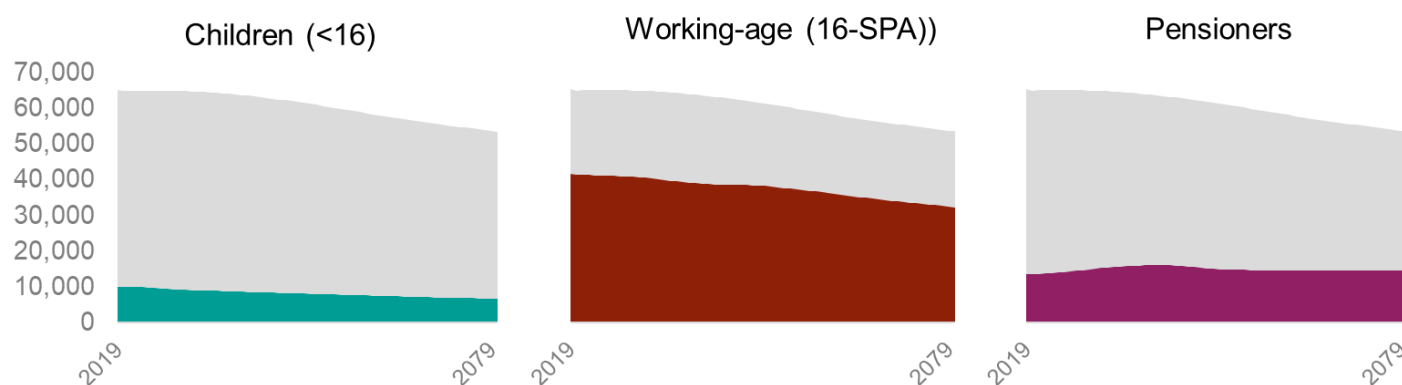


Chart F.2: Projection of Guernsey population assuming net inward migration of 200 a year

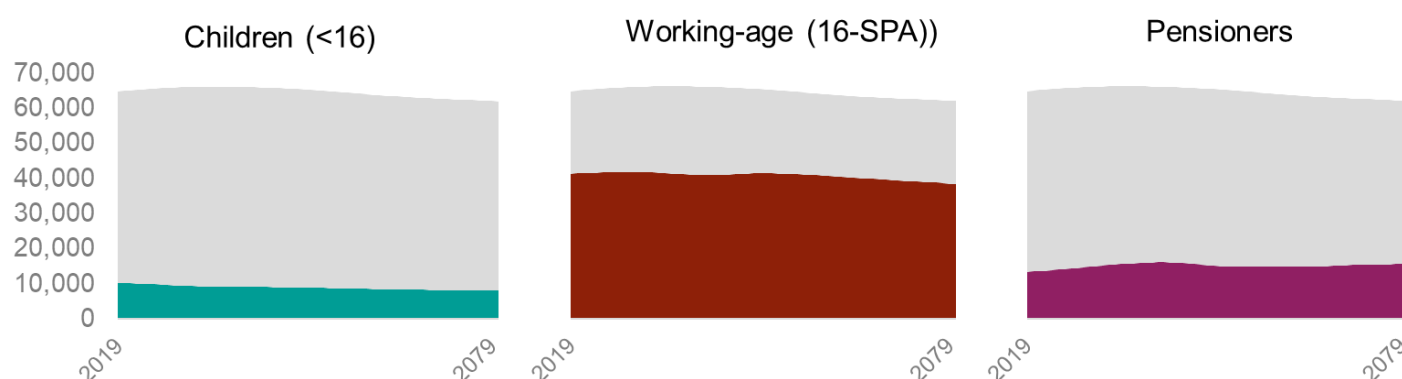


Chart F.3: Projection of Guernsey population assuming net nil migration

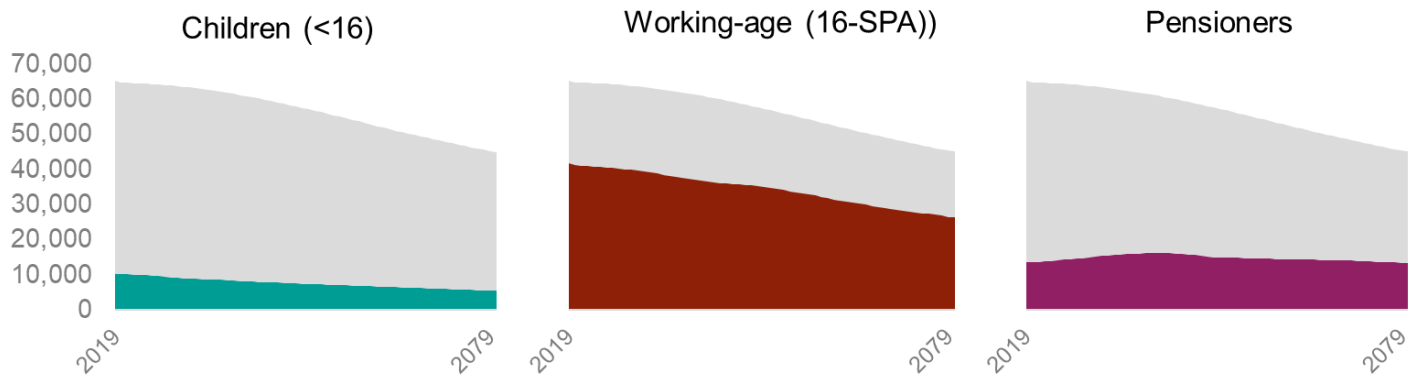
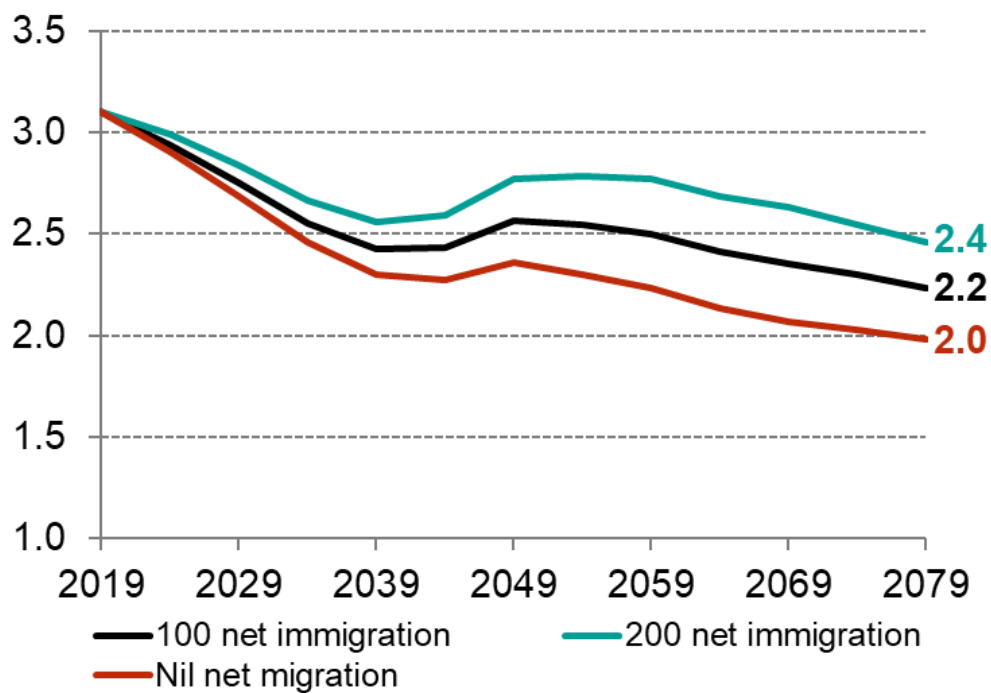


Chart F.4: Projected Old Age Support Ratio



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	740.8	662.3	560.8	-	-	-	-	-
Contribution income:	109.1	151.1	174.8	235.9	323.0	428.3	564.0	748.2
Class 1	99.1	136.6	157.9	213.0	289.4	383.8	506.1	672.2
Class 2	8.9	12.7	14.7	19.9	28.6	37.7	49.0	64.0
Class 3	1.1	1.8	2.2	3.0	4.9	6.8	8.9	12.0
States grant	16.9	-	-	-	-	-	-	-
Total income	126.0	151.1	174.8	235.9	323.0	428.3	564.0	748.2
Benefit expenditure:	157.1	186.8	227.1	317.9	393.0	506.5	666.8	875.0
Old age pension	133.5	162.6	199.6	283.5	347.9	449.7	596.3	786.2
Sickness, incapacity and injury benefits	14.4	17.0	19.5	24.4	32.3	40.9	50.8	64.0
Other benefits	9.1	7.2	8.1	10.0	12.8	16.0	19.7	24.8
Administration	4.6	5.6	6.6	9.1	12.6	17.5	24.3	33.6
Total expenditure	161.7	192.4	233.6	327.0	405.6	524.0	691.0	908.6
Excess (shortfall) of income over expenditure	(35.7)	(41.3)	(58.8)	(91.1)	(82.7)	(95.8)	(127.0)	(160.4)
Investment return	(23.4)	29.2	24.2
Closing fund balance	681.7	650.3	526.2	-	-	-	-	-
Average balance as multiple of expenditure	4.4	3.4	2.3	-	-	-	-	-
Break-even contribution rate	10.9%	12.2%	12.8%	13.2%	12.0%	11.7%	11.7%	11.6%



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16 December 2020

Dear Ellen

Actuarial review of the Guernsey Insurance Fund as at 31 December 2019: additional Fund balance projections

In Malcom Nutley's e-mail of 26 November 2020, he requested on behalf of the Committee that we rework the results of the actuarial review of the Insurance Fund as at 31 December 2019 to show the impact of a higher contribution rate. He further clarified the scope in his e-mail of 4 December 2020.

The results of the actuarial review were set out in our report dated 15 December 2020 ("the actuarial report"). The contribution rates assumed for that review were described in Appendix B of the report. In particular, employer contributions were assumed to be 5% in 2020 and 2021, before rising to 6.6% in 2022 and beyond, and employee contributions were assumed to be 3.5% in 2020 and 2021, before falling to 2.95% in 2022 and beyond.

Contribution scenarios

As agreed, there are four contribution rate scenarios considered in this letter:

1. Employer and employee contributions each increase by 0.2% a year over five years; self-employed and non-employed contributions each increase by 0.4% a year over five years
2. Employer and employee contributions each increase by 0.1% a year over ten years; self-employed and non-employed contributions each increase by 0.2% a year over ten years
3. Employer and employee contributions each increase by 0.2% a year over five years; self-employed and non-employed contributions each increase by 0.2% a year over five years
4. Employer and employee contributions each increase by 0.1% a year over ten years; self-employed and non-employed contributions increase by 0.1% a year over ten years

It is assumed that the contribution rate rises start in January 2022.

Under Scenarios 1 and 2, by the end of the phasing-in period, the employer and employee contribution rates would each be 1% higher, and the self-employed and non-employed contribution



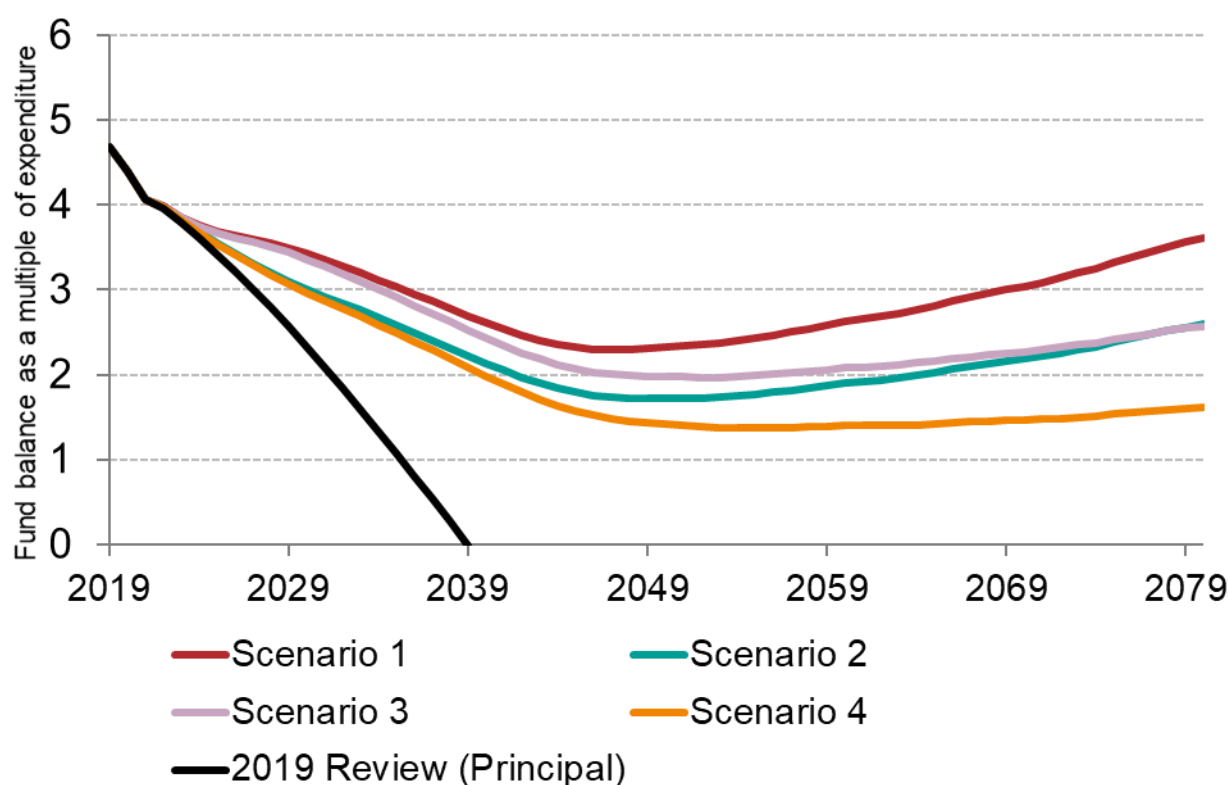
rates would be 2% higher than assumed in the actuarial report. Under Scenarios 3 and 4, by the end of the phasing-in period, the employer, employee, self-employed and non-employed contribution rates would each be 1% higher.

Results

We have updated the principal results from the actuarial review (as set out Section 2 of the actuarial report) to reflect the four new contribution scenarios. Apart from the assumed contribution rates, the calculations are the same as those for the principal results of the review. This letter should therefore be read in conjunction with the actuarial report which gives further information on the approach adopted and the financial condition of the Fund.

The different contribution scenarios do not change the break-even contribution rates or the constant contribution rates required to target a specified Fund balance in 2080 that are set out in Section 2 of the actuarial report. However, the projected Fund balance is affected. The following chart shows how the Fund balance is projected to develop under each contribution scenario. For comparison, the chart also shows the principal projection from the actuarial report (see Chart 2.3 of that report).

Chart 1: Projected progress of the Fund balance based on the principal assumptions for the 2019 actuarial review and each contribution scenario



The principal results of the actuarial review indicated that the Fund balance would decline steadily from 4.7 times annual expenditure in 2019 until it was exhausted in 2039.

Under the four contribution scenarios, the balance also declines over the first part of the projection period, but more slowly than under the principal results of the actuarial review. However, before it is exhausted, the balance levels off and then starts to grow in the later part of the projection

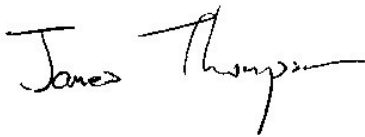
period. In 2080, the average balance is projected to be 3.6 times expenditure in that year under Scenario 1, 2.6 times under Scenarios 2 and 3, and 1.6 times under Scenario 4.

The chart shows that at the end of the projection period the balance is rising as a multiple of expenditure. This reflects that, at that point, income less expenditure is sufficient to allow the balance to grow relative to expenditure.

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.

Please let me know if you have any questions.

Yours sincerely

A handwritten signature in black ink, appearing to read 'James Thompson', with a long horizontal flourish extending to the right.

James Thompson
Actuary