



# Government Actuary's Department



## Report by the Government Actuary on the financial condition of the Health Insurance Fund as at 31<sup>st</sup> December 2017

Date: 15<sup>th</sup> March 2019

Author: Martin Clarke



## HEALTH INSURANCE (JERSEY) LAW 1967

Report by the Government Actuary  
on the financial condition of the  
Health Insurance Fund  
as at 31<sup>st</sup> December 2017

To the Minister for Social Security of the States of Jersey

Article 22(1) of the Health Insurance (Jersey) Law 1967 requires the actuary appointed by the Minister to review the operation of the Law at intervals not exceeding five years and to report to the Minister on the financial condition of the Health Insurance Fund and on the adequacy or otherwise of the contributions payable under the Law to support the prescribed benefits. I have been appointed by the Minister to carry out the review as at 31<sup>st</sup> December 2017 and I submit the following report setting out my findings.

Martin Clarke  
Government Actuary  
15<sup>th</sup> March 2019

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## 1 Executive summary

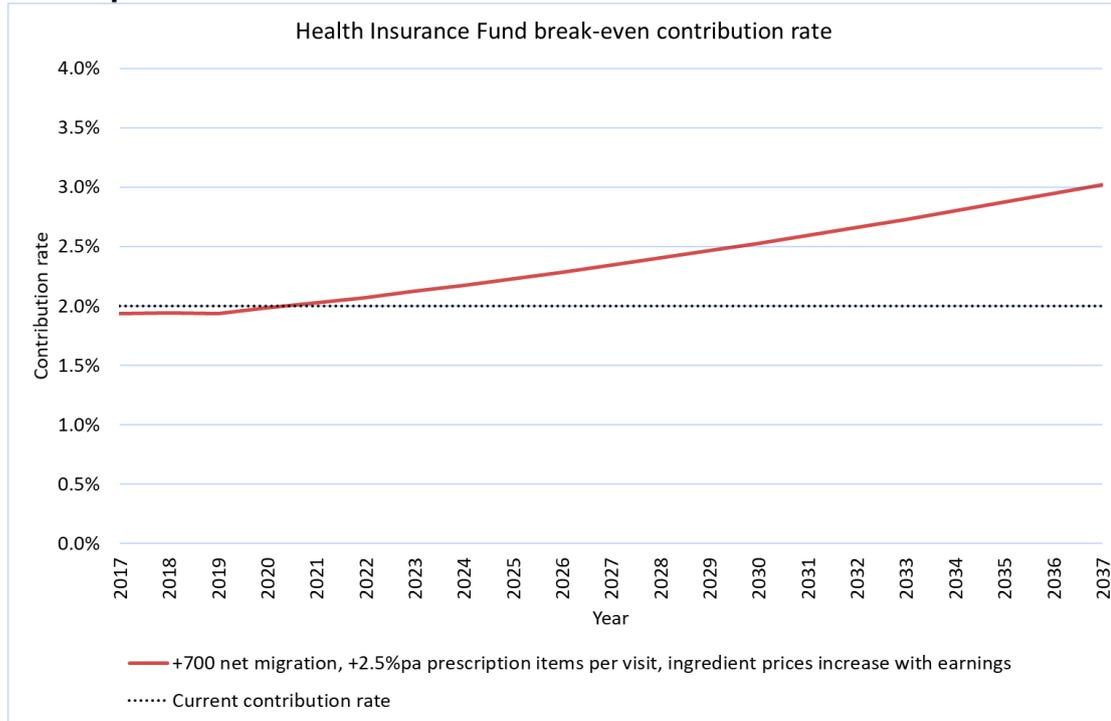
- 1.1 The Health Insurance Fund (“the HIF”) of the States of Jersey is primarily designed to provide financial assistance to Jersey residents who need access to general practitioner (GP) services, in particular by partially offsetting the doctor’s consultation charge and meeting in most cases the full cost of drugs prescribed by the GP. The HIF is financed by a combination of social security contributions from individuals and employers.
- 1.2 As required by Article 22 of the Health Insurance (Jersey) Law 1967 (“the Law”), this is my report on the latest review of the HIF, which has been carried out as at 31<sup>st</sup> December 2017, and it includes projections over the period from 2017 to 2037. This review:
- > considers the financial position of the HIF taking into account changes in legislation and experience since the previous review
  - > projects possible future levels of expenditure from the HIF and the contribution rates required to finance this expenditure
  - > projects the balance in the HIF, which is available to meet its expenditure and help smooth any increase in the required rate of contributions.
- 1.3 Two main sets of results are presented in this report:
- > the projected “break-even” contribution rates; this is the rate that would be required in order for contribution income to equal expenditure on benefits and administration costs, ignoring any balance built up in the two funds
  - > the balance in the HIF, assuming that the current rates of contribution remain unchanged.
- 1.4 A summary of the results of the review based on the “central assumptions” is shown in the following table and charts. The key assumptions include
- > Net immigration will be 700 people a year throughout the projection period
  - > Average earnings growth and retail price inflation (RPIY) are both taken as 3.0% a year for the bulk of the projection period from 2017 to 2037
  - > The rates paid for the medical benefit for a GP consultation and for the dispensing fee to a pharmacist increase in line with RPIY from 2020
  - > The average number of items prescribed is 6 in 2018 and thereafter rises at 2.5% a year, and the average cost of prescribed item is £6.70 in 2018, increasing thereafter in line with earnings
  - > The primary care activities (the Jersey Quality Improvement Framework – JQIF and other HIF contracts) result in payments of £2 million in 2018 increasing in line with RPIY thereafter

Details of the data and assumptions are included in the appendices.



## Results – break-even contribution rate

**Figure 1.1: Projected break-even contribution rates based on the central assumptions**

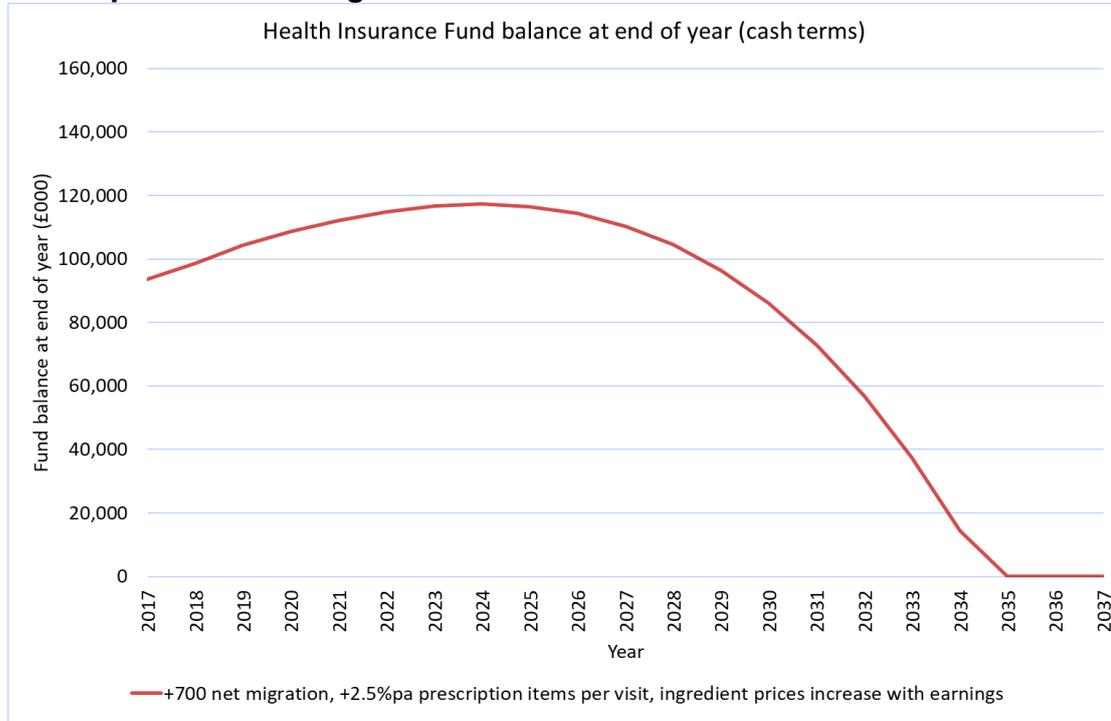


- 1.5 The break-even contribution rate is projected to start off below the current rate of 2.0% but then to rise above this, reaching 3.0% by 2037.
- 1.6 The main driver of the projected increase in the break-even contribution rates over time is the growth in pharmaceutical benefit costs – this is explored more in the section on variant projections below. The ageing of the population has only a limited effect over the time horizon for this review, which is shorter than that for the review of the Social Security Fund.



## Results – fund balance

**Figure 1.2: Projected Fund balance in cash terms based on the central assumptions assuming the current contribution rates are maintained**



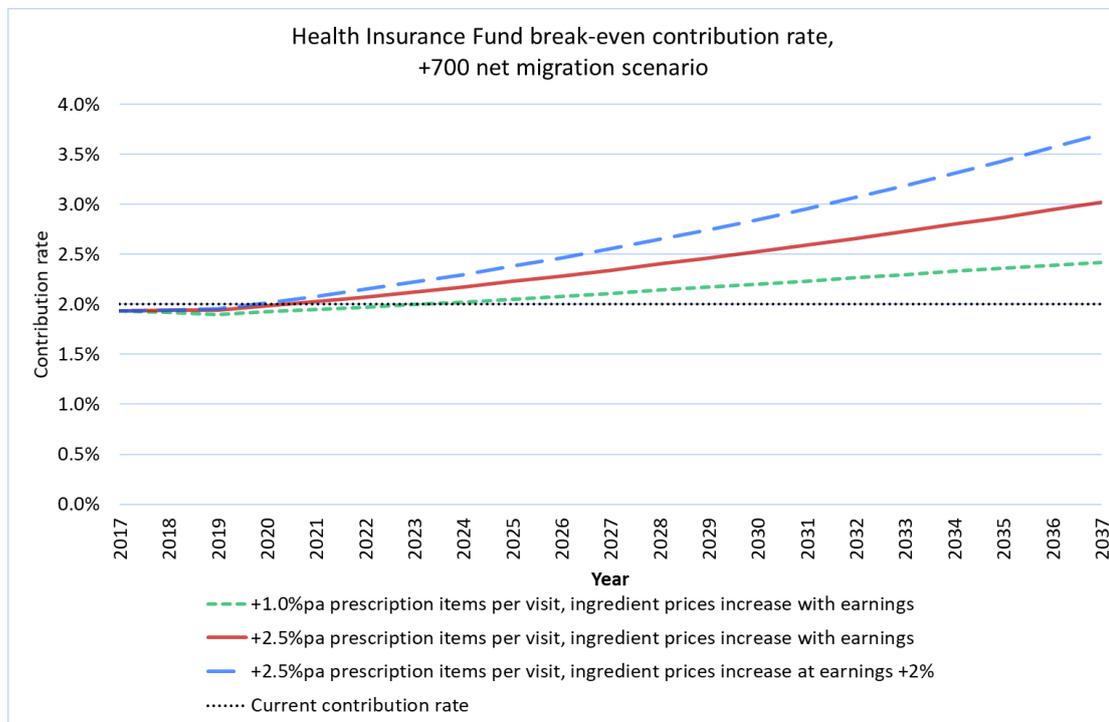
- 1.7 The Fund balance is projected to rise in cash terms from its level as at end December 2017 of around £94 million to around £117 million in the mid-2020s, before starting to fall. This reflects the times when the break-even contribution rate is below the current rate of 2.0% and then above, albeit with a slight lag so that the Fund peaks a little after the break-even contribution rate first exceeds the current rate. The break-even contribution rate being above the actual contribution rate is closely linked to the fund's outgo being above its income. The fund is projected to be exhausted by 2035, two years before the end of the projection period (2037). In terms of months of benefit expenditure covered by the projected Fund balance, this rises very slightly from a current level of 34 months to 35 months in 2018 and 2019, and then falls to zero by 2034.



## Variant assumptions

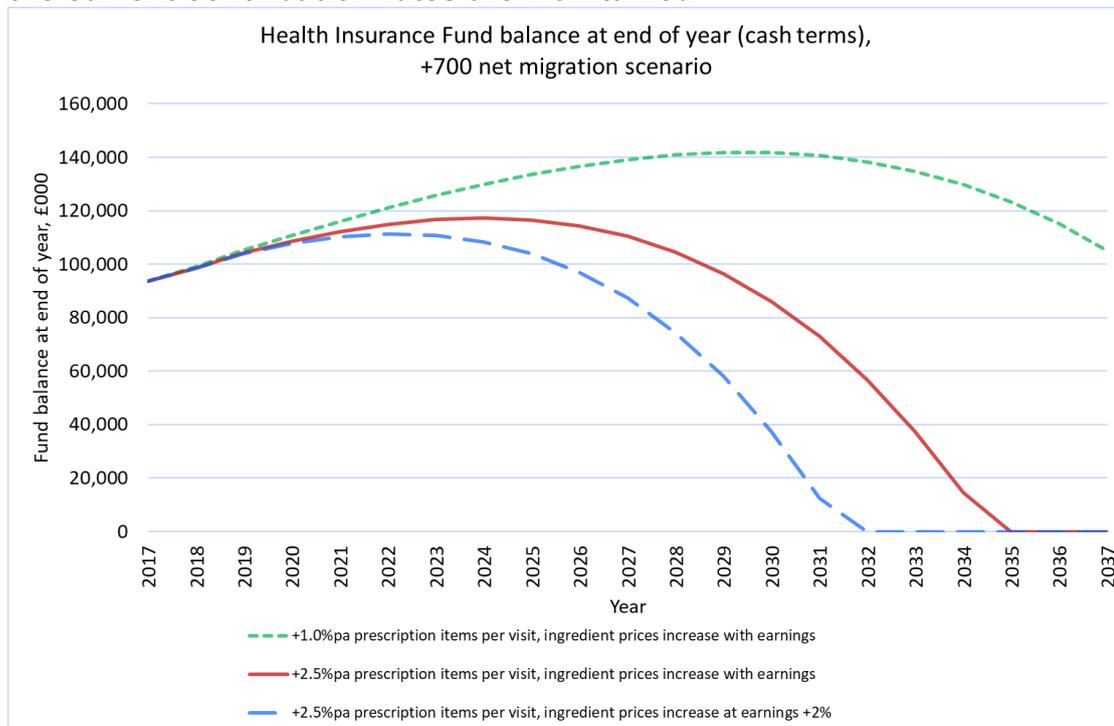
- 1.8 As there is considerable uncertainty about the future development of the HIF it is important for readers of the report not to place undue emphasis on a single set of projection results. It is therefore appropriate to consider how the results of the review would differ if alternative, but still plausible assumptions were adopted. These scenarios are discussed in Section 5.
- 1.9 Variant results were produced on different assumptions about the growth in the cost of pharmaceutical benefits, which are the largest item of expenditure from the HIF. In particular, two alternatives to the main assumptions were investigated
- > That the annual rate of growth of the average number of prescription items per GP consultation would be 1% a year rather than 2.5% a year
  - > That the annual increase in average cost of prescription items would be 2% a year above assumed earnings growth, rather than at assumed earnings growth

**Figure 1.3: Projected break-even contribution rates showing results on variant assumptions for growth in pharmaceutical benefit costs**





**Figure 1.4: Projected Fund balance in cash terms showing results on variant assumptions for growth in pharmaceutical benefit costs assuming the current contribution rates are maintained**



1.10 These variants show that the expenditure on benefits from the HIF, and the future financial status of the HIF, are very dependent on the growth in the number of items dispensed and on the growth in average cost of items dispensed.

- > If growth in prescribed drugs is lower than at present, with an annual rate of growth of the average number of prescription items per GP consultation would be 1% a year, and the average cost of prescribed items increases only in line with earnings, the break-even contribution rate at the end of the projection period (2037) would be 2.4% rather than 3.1%, and the projected fund balance would be a little over £105 million (16 months' benefit expenditure) though falling.
- > Conversely, if there is a continuing increasing reliance on prescribed items, and the average cost of prescribed items increases in line with earnings growth plus 2% a year, the break-even contribution rate increase at the end of the projection period (2037) would be 3.7% rather than 3.1%, and the projected fund balance would have fallen to zero by 2032, earlier than the 2035 projected date of fund exhaustion for the central scenario described above.



1.11 In addition, the report shows projections on the three migration scenarios

- > +325 annual net inward migration
- > +700 annual net inward migration (the central assumption, for which results are given above)
- > +1000 annual net inward migration

However over the 20 year projection period for the HIF review, the effect of different demographic scenarios in relation to the migration assumption makes little difference to the results either in terms of the break-even contribution rate or the projected level of the HIF in 2037.

1.12 The report also shows variant results for different rates of increase in expenditure on primary care activities, and investigates different assumptions for investment return. None of these variants have results significantly different from the central results.

### **Changes since the 2012 review**

1.13 The 2017 review indicates a significantly higher projected Fund balance than the 2012 review – a positive fund balance in 2032 rather than a fund balance that fell to zero by the mid-2020s. The break-even contribution rate is projected to rise far less steeply than in the previous review. This reflects in large part changes in the assumptions about the rate of benefits growth in future, and lower rates of benefit cost growth over the period 2012 to 2017 than assumed in the previous report.

### **Conclusions**

1.14 The financial outlook for the Fund remains healthy in the short to medium term and has slightly improved from that shown at the 2012 review. However, the fund is expected to be exhausted by the mid-2030s, as projected outgo of the Fund is above the projected income for most of the projection period. Once the Fund is exhausted, the contribution rate would need to be raised to at least the break-even rates described above.

1.15 The projected development of Fund balance is very sensitive to the assumptions about growth in pharmaceutical benefit costs. Comparatively small changes in assumptions could see the projected date of fund exhaustion brought forward from the mid-2030s to the early 2030s, or pushed back until after the end of the period covered by the review.



- 1.16 Conversely the projections show far less sensitivity over the period covered to assumptions about demography or the growth in expenditure on primary care activities. The result is also not very sensitive to the assumed rate of investment return because the ratio of the value of the fund to its annual income and outgo is comparatively small (rather less than for the Social Security Fund), and therefore the ability to earn investment return is less significant.
- 1.17 The key aspect to successful management of the HIF over the next 20 years would therefore appear to be management of the rate of growth in expenditure on pharmaceutical benefits, particularly in terms of the number of items prescribed, but also in terms of the average cost of those items.
- 1.18 The position should in any case be reconsidered at the next actuarial review of the Fund. Under current legislation that review would be due no later than the end of 2022, but I understand that it is proposed to carry out the next review with an effective date 4 years after the current review.



## 2 Introduction and scope of the review

2.1 Article 22 of the Health Insurance (Jersey) Law 1967 (“the Law”) makes provision for an actuary to carry out reviews of the operation of the Law. In particular, paragraph (1) of that Article provides that:

*“An actuary, appointed for the purpose by the Minister, shall review the operation of this Law during the period ending with 31<sup>st</sup> December 1972 and thereafter during the period ending with 31<sup>st</sup> December in every fifth year and, on each such review, make a report to the Minister on the financial condition of the Health Insurance Fund and the adequacy or otherwise of the contributions payable under this Law to support the benefits thereunder having regard to its liabilities under this Law”.*

2.2 This is my report on the latest review of the Health Insurance Fund (the HIF), which has been carried out as at 31<sup>st</sup> December 2017, based on the letter of engagement between the Social Security Department of the States of Jersey and the Government Actuary's Department dated 23<sup>rd</sup> May 2018. It includes projections over the period from 2017 to 2037. In order to meet the legislative requirement, this review:

- > Considers the financial position of the HIF taking into account changes in legislation and Fund experience since the previous review
- > Projects possible future levels of expenditure from the HIF and the contribution rates required to finance this expenditure
- > Projects the balance in the HIF, assuming no change in health insurance contribution rates<sup>1</sup>.

2.3 The structure of the rest of this report is as follows:

- |           |   |
|-----------|---|
| Section 3 | A discussion of how the HIF works and the main changes that have occurred since the previous review                                   |
| Section 4 | The results of the projections of the income, expenditure and HIF balance up to 2037, based on the central assumptions for the review |
| Section 5 | The results of the projections based on alternative assumptions   |
| Section 6 | A comparison of the results at this review with those at the previous review  |

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<sup>1</sup> These are the part of social security contributions that are allocated to the Health Insurance Fund. Currently the health insurance contribution rates are 1.2% from employers and 0.8% from employees (or 2.0% where there is no employer).



- 2.4 The appendices provide further background details on the review.
- 2.5 My previous report dated 26<sup>th</sup> August 2014 was based on the period to 31<sup>st</sup> December 2012 and showed that, as that date, a Fund balance had been built up which was a little under three times annual expenditure. This was in compliance with the stated policy aim of maintaining a small working balance in the Fund of at least 12 months' expenditure. It should be recognised, however, that not all of the Fund assets would be available to help meet expenditure because they are not very liquid (for example, debtors).
- 2.6 Under current legislation, the next review of the HIF is due to be carried out as at 31<sup>st</sup> December 2022, or earlier as the Minister may direct. However, I understand that it is intended to carry out the next review with an effective date 4 years after the current review.
- 2.7 The projections in this report are dependent on the data, methodology and assumptions used for the review, which are described later in this report.
- 2.8 This report has been prepared for the Minister for Social Security and it is anticipated that the results in the report will be used by the Government of Jersey for information purposes and for planning the future of the Health Insurance Fund. This report covers an actuarial assessment of the Fund's financial condition over the next 20 years. In making decisions about the Fund, it will also be appropriate to take into account non-actuarial matters such as legal, administrative and policy issues.
- 2.9 The report should be read in conjunction with the important limitations set out in Appendix A.



### 3 How the Health Insurance Fund works

- 3.1 The Jersey Health Insurance Fund (“the HIF”) is designed to provide financial assistance to Jersey residents who need access to general practitioner (GP) services. In particular, where someone covered by the Fund needs to visit their GP, the Fund makes a payment (“the Medical Benefit”) that is used to partially offset the doctor’s consultation charge (the patient meets the balance of the cost). Furthermore, the HIF bears the full cost of any drugs prescribed by the GP, provided those drugs are included on a list drawn up by the Minister.
- 3.2 The Fund is financed by social security contributions. Employees and their employer pay a total of 2% of earnings up to the Standard Earnings Limit (SEL). Similar contributions are paid by self-employed and non-employed persons unless they are exempt. There are no contributions payable to the Fund by the Government of Jersey, and in particular the supplementation rules<sup>2</sup> that apply in the Social Security Fund do not apply to the Health Insurance Fund.
- 3.3 A summary of the benefits provided and the contributions payable to the Fund is given in Appendix B. A summary of the Fund accounts for the years 2012 to 2017 is set out in Appendix C. Appendix D provides a summary of the data used for the review.
- 3.4 There have been a number of changes affecting the operation of the Fund since the previous actuarial review, in particular:
- > The benefit which GPs formerly received for writing “letters of referral” to consultants was removed from 2015.
  - > The HIF now has a range of programmes under the heading “primary care activities” include the Jersey Quality Improvement Framework (JQIF) and contracts for undertaking vaccinations against influenza. The JQIF was introduced in 2015, and makes payments to GP practices under a standard contract with the aim of encouraging high quality outcomes for patients. All GP surgeries participate in the framework, which distributes payments according to whether practices meet some or all of around 35 clinical and organisational measures.

Allowance has been made for these in the review in line with information given by Government of Jersey staff.

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<sup>2</sup> Broadly, under the Social Security Fund, if a member’s earnings are below the Standard Earnings Limit (SEL), they are credited with the difference between contributions based on actual earnings and contributions based on the SEL; this is known as supplementation.



- 3.5 In the early years of the periods since the previous valuation date, transfers from the HIF of £2 million for 2013 and £6 million for each of 2014 and 2015 were made to help finance primary care services. No transfers were made in subsequent years, and none are expected in the period covered by the projections in this report.
- 3.6 Increases in pension age from 65 to 67 over the period from 2020 to 2031 as contained in legislation approved by the States on 17<sup>th</sup> June 2014 have been reflected in the review. However, changes in pension age have comparatively little effect on the projected finances of the HIF.
- 3.7 The Fund has been financed in such a way that the bulk of contribution income in a year should be used to meet expenditure in that year. Therefore no substantial fund is built up out of which to meet future expenditure. However, it is the aim that there should be a small balance in the Fund in order to protect against unexpected fluctuations in income or expenditure and to give appropriate notice to employers and employees of any required changes to the contribution rate.
- 3.8 The policy is currently that the HIF should hold a balance equal to at least 12 months' expenditure, and as at 31<sup>st</sup> December 2017 the assets somewhat exceeded this level, at 34 months' expenditure. However, it should be recognised that not all of the Fund assets would be available to help meet expenditure because they are not very liquid.
- 3.9 The assets of the HIF are invested broadly in line with the stated strategic aim to invest 40% of the Fund in equities, 45% in corporate bonds and the remaining 15% in cash. The results of the projection are not particularly sensitive to the assumption about investment returns, and therefore it seems that the finances of the Fund over the period covered by the projections are not likely to be particularly affected by the chosen asset distribution.



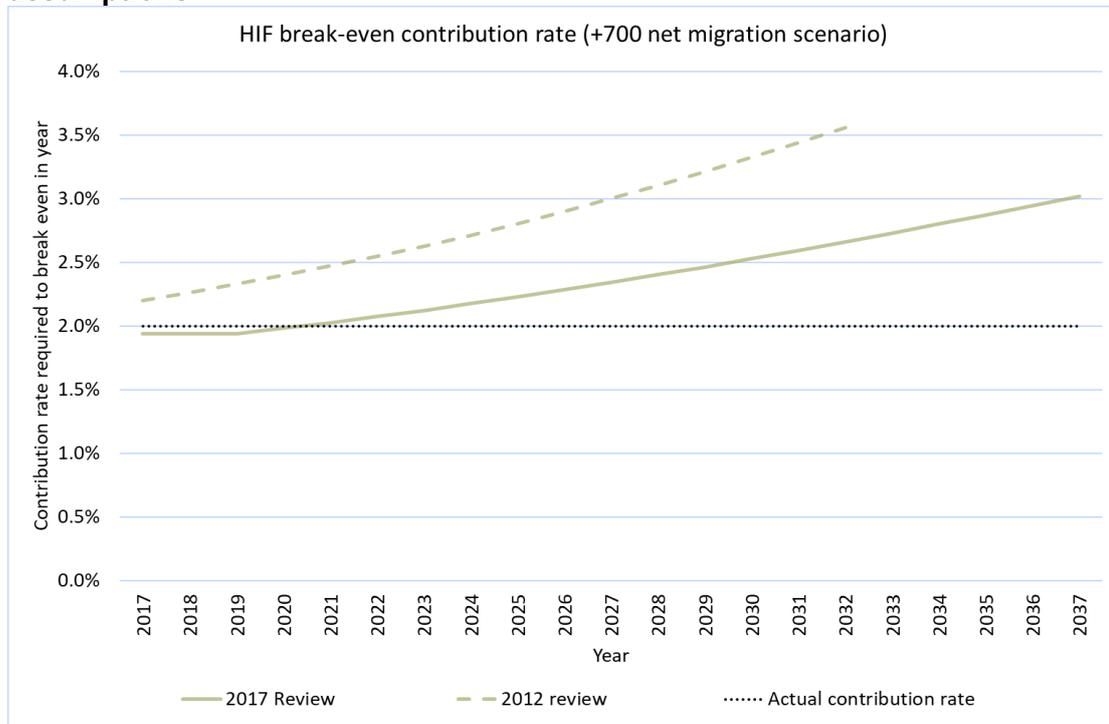
## 4 Results based on the central assumptions

- 4.1 The calculations for this review involve projecting contribution income, benefit expenditure and administration expenses over the 20 years from 2017 to 2037. Two main sets of results are presented in this report:
- > the projected “break-even” contribution rates; this is the rate that would be required in order for contribution income to equal expenditure on benefits and administration costs, ignoring any balance built up in the Fund
  - > the balance in the Health Insurance Fund, as a multiple of monthly expenditure, assuming that the current rates of contribution remain unchanged.
- 4.2 A summary of the results of the review based on the “central assumptions” is shown in the following table and charts. Details of the data and assumptions underlying the results are included in the appendices to this report. But particular note should be made that:
- > The opening fund balance as at 31<sup>st</sup> December 2017 is taken as £93.6 million from the accounts of the Fund as at that date
  - > The central assumption is that net immigration to Jersey will be 700 people a year throughout the projection period (results are based on population projections prepared by Statistics Jersey and provided to GAD on 12<sup>th</sup> June 2018), and that all the population of Jersey are covered for Fund benefits
  - > Average earnings growth and retail price inflation (RPIY) are both taken as 3.0% a year for the bulk of the projection period from 2017 to 2037
  - > Contribution estimates follow those used for the simultaneous review of the Social Security Fund
  - > Investment returns are assumed to be at earnings growth + 0.75% a year
  - > The rates paid for the medical benefit for a GP consultation and for the dispensing fee to a pharmacist increase in line with RPIY from 2020
  - > The average number of consultations per covered person in each 5-year age band remain constant at roughly current levels, albeit with some (downward) adjustments as a result of primary care activity programmes
  - > The average number of items prescribed in a GP visit is 6 in 2018 and thereafter rises at 2.5% a year, in line with recent experience, and the average cost is £6.70 in 2018, increasing thereafter in line with earnings
  - > Primary care activities result in payments of around £2 million in 2018 increasing in line with RPIY thereafter
  - > Administration expenditure is 6% of benefit expenditure (including primary care activities).



## Results – break-even contribution rate

**Figure 4.1: Projected break-even contribution rates based on the central assumptions**

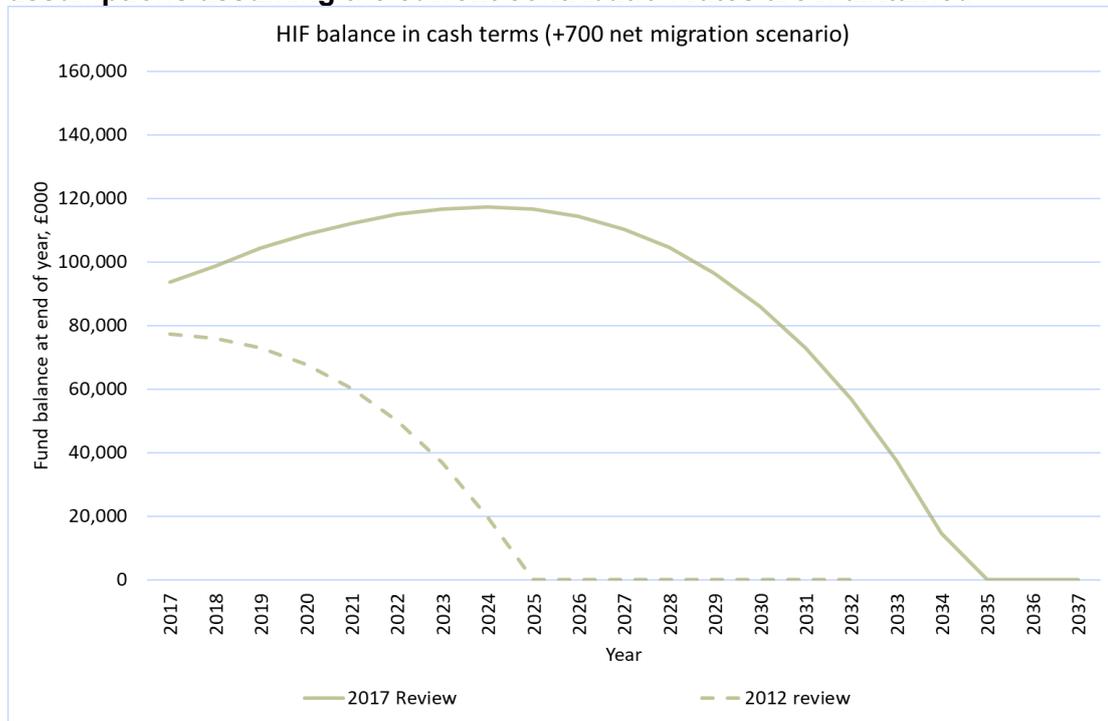


- 4.3 On the central net immigration assumption (of 700 a year), and the central assumption for growth in pharmaceutical benefits, the break-even contribution rate is projected to start off below the current rate of 2.0% but then to rise gradually above this, reaching just over 3.0% by around 2037.
- 4.4 The main driver of the projected increase in the break-even contribution rates over time is the growth in pharmaceutical benefit costs – this is explored more in the section on variant projections below. The ageing of the population has only a limited effect over the time horizon for this review, which is shorter than that for the review of the Social Security Fund.
- 4.5 Comparison of the results with those for the 2012 review are given in section 6.



## Results – fund balance

**Figure 4.2: Projected Fund balance in cash terms based on the central assumptions assuming the current contribution rates are maintained**



- 4.6 On the central net immigration assumption (of 700 a year), and the central assumption for growth in pharmaceutical benefits, the Fund balance is projected to rise in cash terms from its current level of around £94 million to around £117 million in the mid-2020s, before starting to fall. This reflects the times when the break-even contribution rate is below the current rate of 2.0% and then above, albeit with a slight lag so that the Fund peaks a little after the break-even contribution rate first exceeds the current rate (the break-even contribution rate being above the actual contribution rate is closely linked to the fund's outgo being above its income). The fund is projected to be exhausted by 2035, two years before the end of the projection period (2037).
- 4.7 In terms of months of benefit expenditure covered by the projected Fund balance, this rises very slightly from a current level of 34 months to 35 months in 2018 and 2019, and then falls to zero by 2034.
- 4.8 Full details of the projected results are given in tables in Appendix F, with a comparison between the 2012 and 2017 reviews given in section 6.



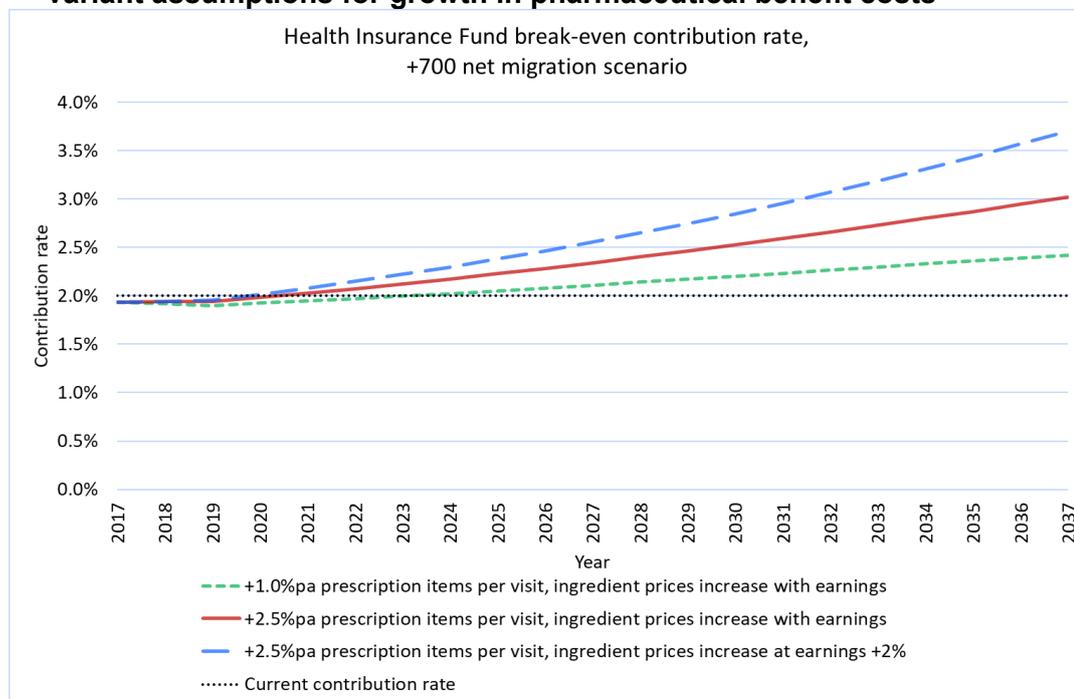
## 5 Illustrative effects on the central results of variations in the assumptions

5.1 The projections of this review are sensitive to the assumptions made.

5.2 The greatest sensitivity investigated was in regards to the rate of growth of the pharmaceutical benefit, which in turn is the largest element of benefit expenditure. In particular, the following alternative scenarios exploring different possibilities for growth in pharmaceutical benefit were projected:

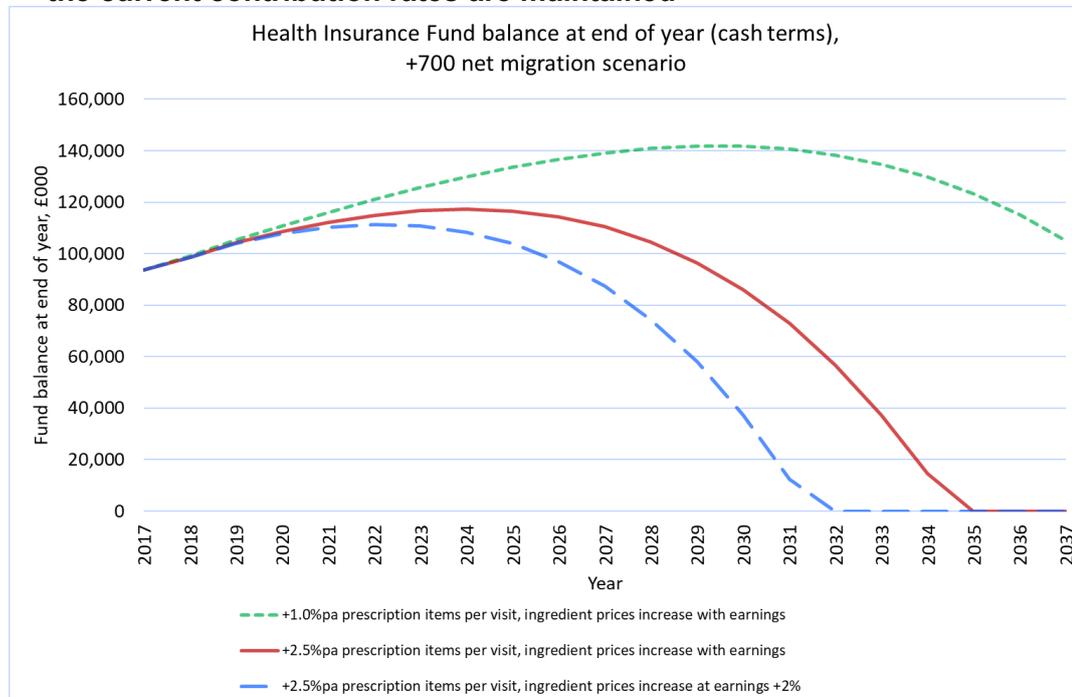
- > The average number of items prescribed is 6 in 2018 and thereafter rises at 1.0% a year, and the average cost of prescribed item is £6.70 in 2018, increasing thereafter in line with earnings (“low assumption for growth in pharmaceutical benefit costs”)
- > The average number of items prescribed is 6 in 2018 and thereafter rises at 2.5% a year, in line with recent experience, and the average cost of prescribed items is £6.70 in 2018, increasing thereafter in line with earnings plus 2% a year (“high assumption for growth in pharmaceutical benefit costs”)

**Figure 5.1: Projected break-even contribution rates showing results on variant assumptions for growth in pharmaceutical benefit costs**





**Figure 5.2: Projected Fund balance in cash terms showing results on variant assumptions for growth in pharmaceutical benefit costs assuming the current contribution rates are maintained**



5.3 These variants show that the expenditure on benefits from the HIF, and the future financial status of the HIF are very dependent on the growth in the number of items dispensed and on the growth in average cost of items dispensed.

- > If growth in prescribed drugs is lower than at present due to changes in health policies, as illustrated in the scenario where the annual rate of growth of the average number of prescription items per GP consultation would be 1% a year, and the average cost of prescribed items increases only in line with earnings, the break-even contribution rate increase at the end of the projection period (2037) would be 2.4% rather than 3.0%, and the projected fund balance would be a little over £105 million (13 months' benefit expenditure) though falling, rather than exhausted as shown in the central scenario in section 4.
- > Conversely, if there is a continuing increasing reliance on prescribed items, and the average cost of prescribed items increases in line with earnings growth plus 2% a year, with a 2.5% a year increase in the average number of prescription items per GP consultation, the break-even contribution rate at the end of the projection period (2037) would be 3.7% rather than 3.1%, and the projected fund balance would have fallen to zero by 2032, earlier than the 2035 projected date of fund exhaustion for the central scenario described in section 4.



### **Demographic variants**

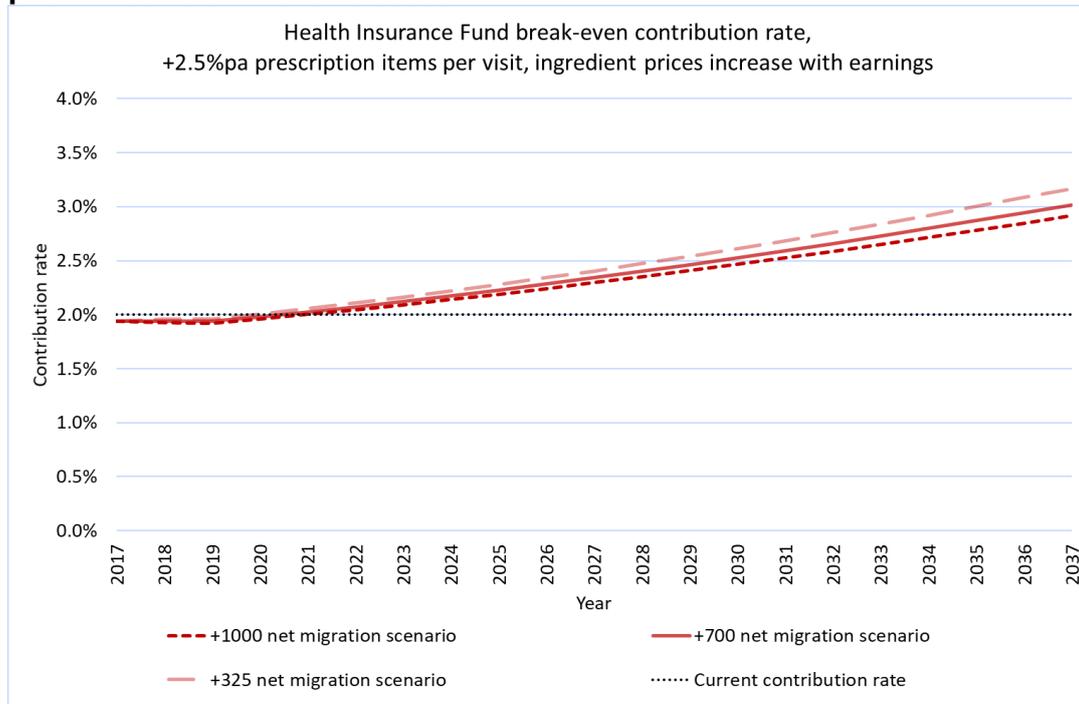
5.4 In addition, the report shows projections on the three migration scenarios

- > +325 annual net inward migration
- > +700 annual net inward migration (the central assumption, for which results are given in section 4 and above)
- > +1000 annual net inward migration

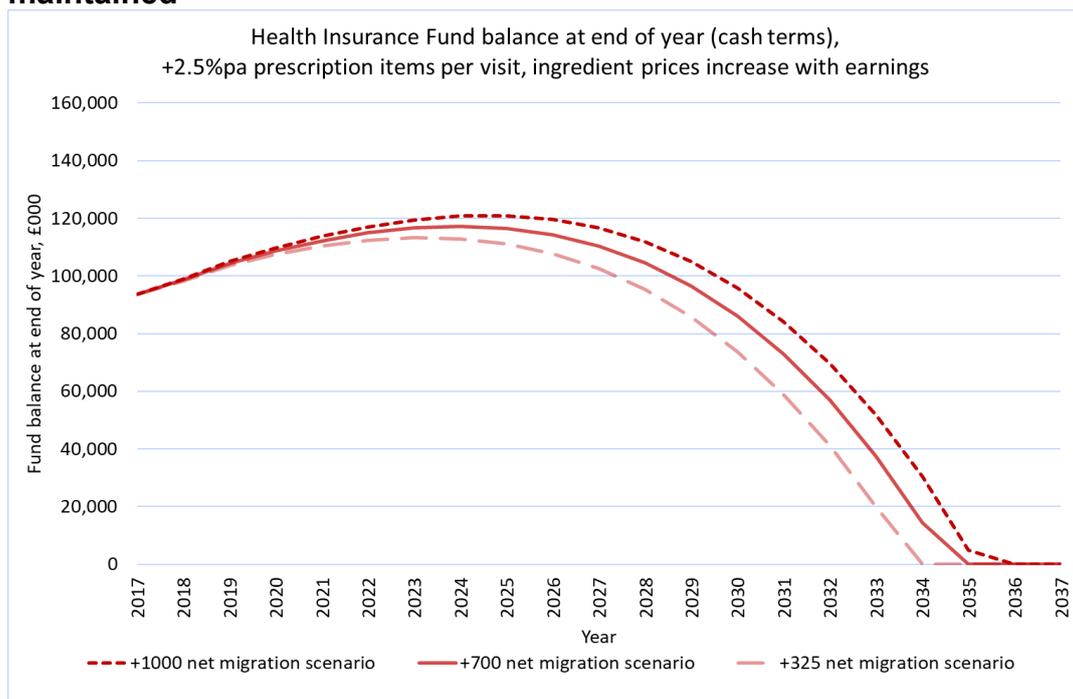
5.5 As the graphs on the next three pages show, over the 20 year projection period for the HIF review, the effect of different demographic scenarios in relation to the migration assumption makes little difference to the results either in terms of the break-even contribution rate or the projected level of the HIF in 2037 (or the date of fund exhaustion).



**Figure 5.3: Projected break-even contribution rates showing results on variant demographic assumptions and central assumption for growth in pharmaceutical benefit costs**

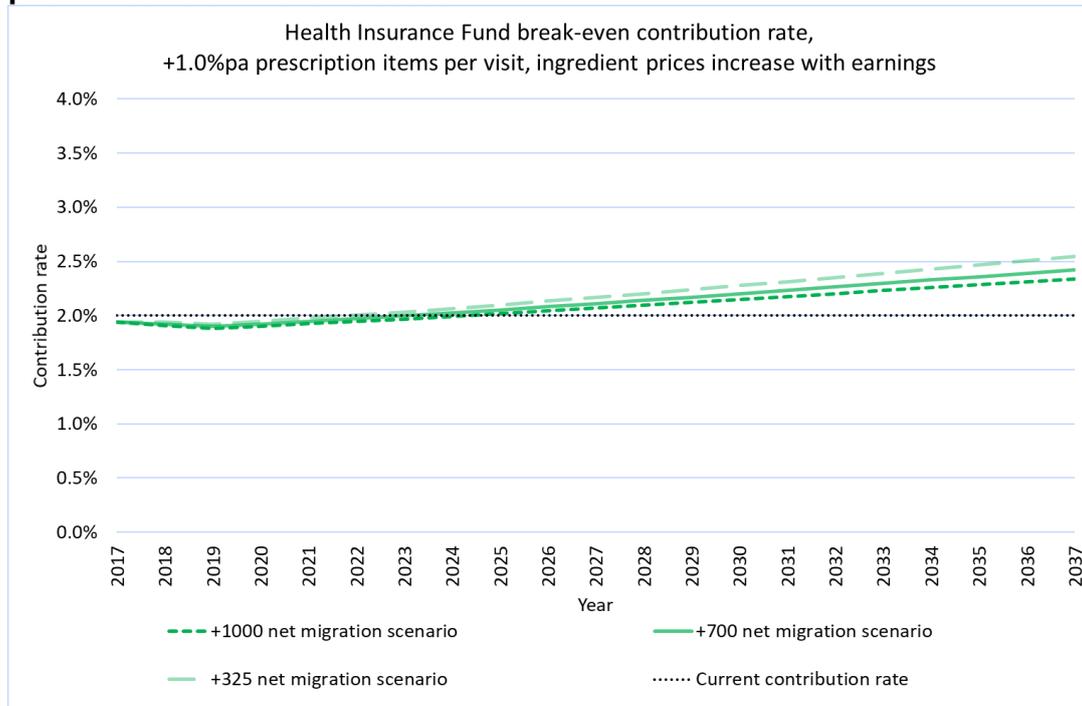


**Figure 5.4: Projected Fund balance in cash terms showing results on variant demographic assumptions and central assumption for growth in pharmaceutical benefit costs, assuming the current contribution rates are maintained**

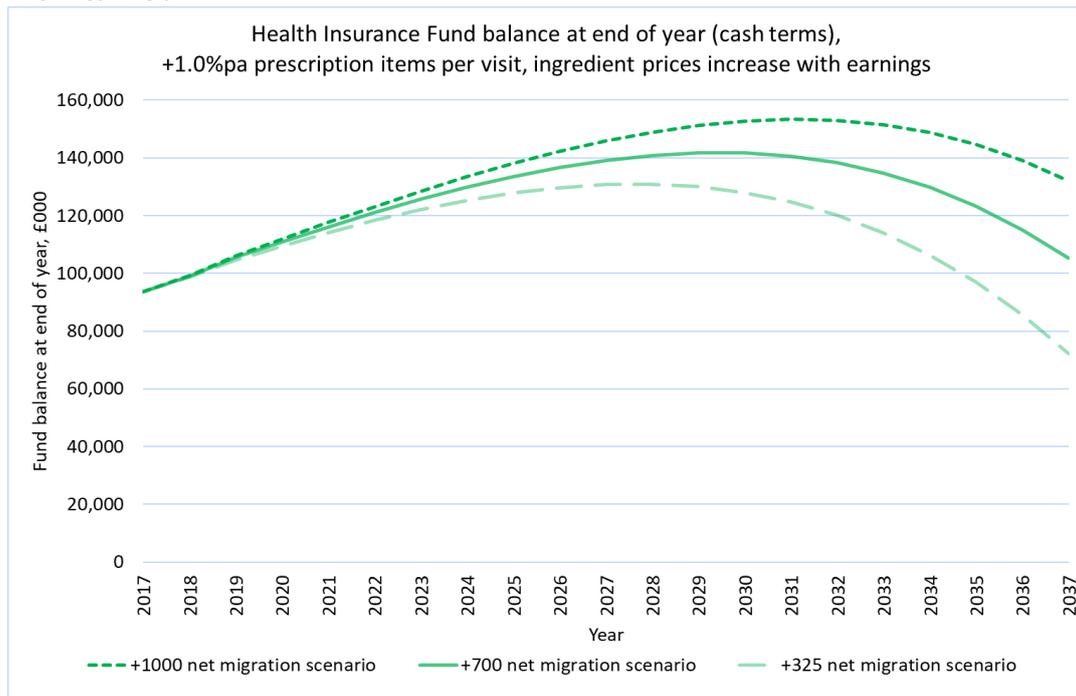




**Figure 5.5: Projected break-even contribution rates showing results on variant demographic assumptions and low assumption for growth in pharmaceutical benefit costs**

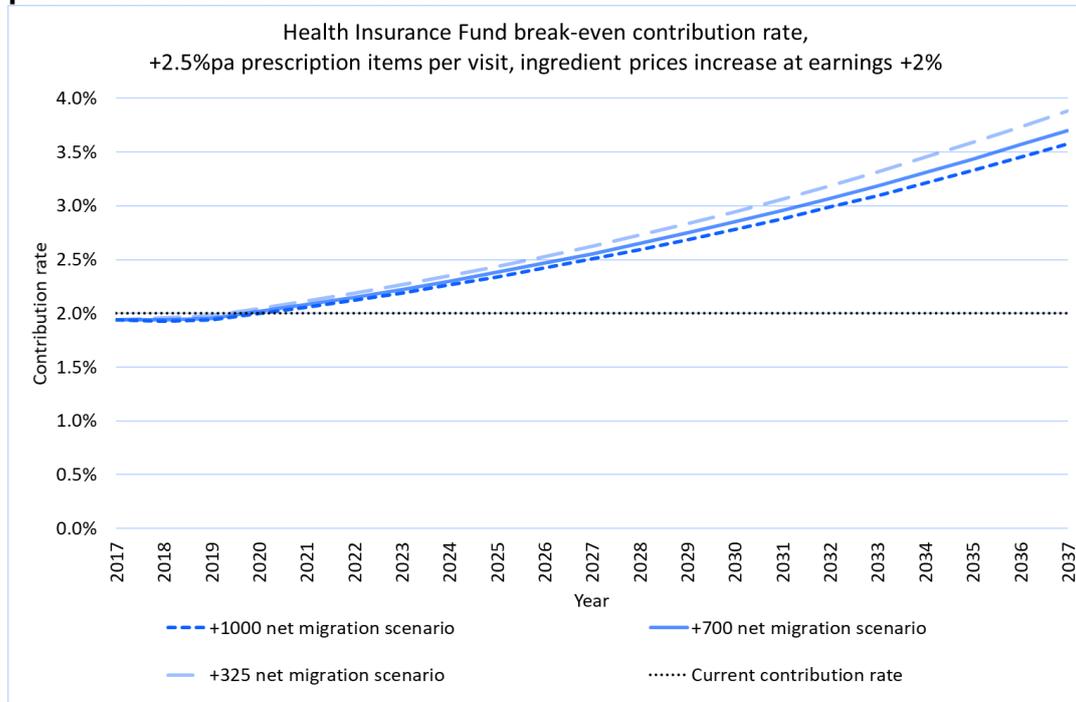


**Figure 5.6: Projected Fund balance in cash terms showing results on variant demographic assumptions and low assumption for growth in pharmaceutical benefit costs, assuming the current contribution rates are maintained**

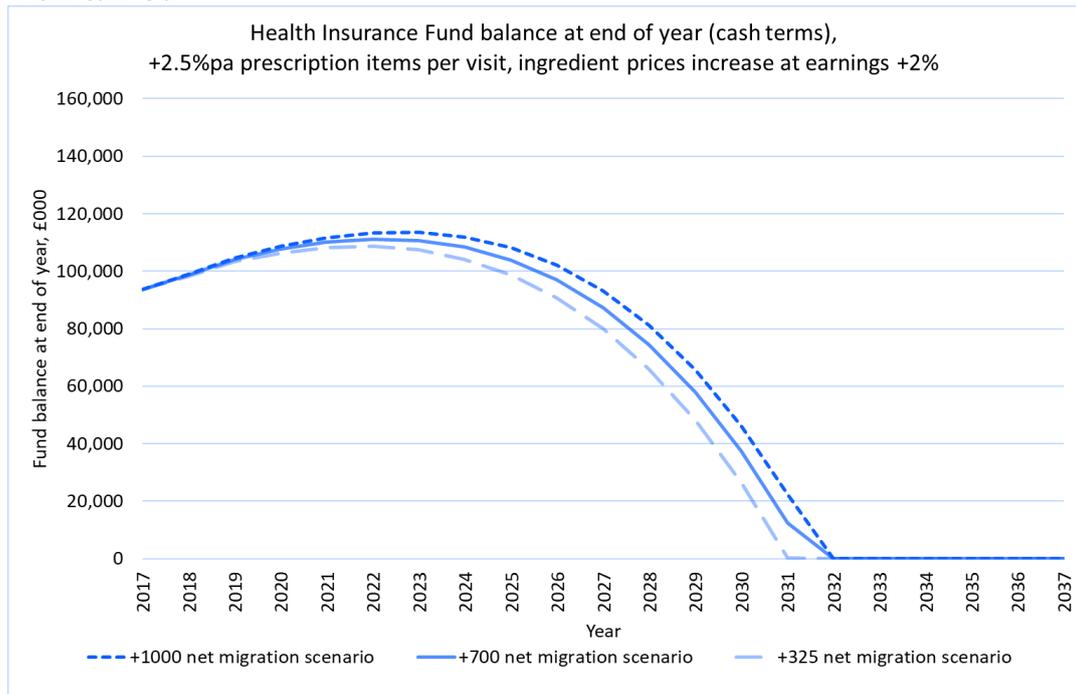




**Figure 5.7: Projected break-even contribution rates showing results on variant demographic assumptions and high assumption for growth in pharmaceutical benefit costs**



**Figure 5.8: Projected Fund balance in cash terms showing results on variant demographic assumptions and high assumption for growth in pharmaceutical benefit costs, assuming the current contribution rates are maintained**



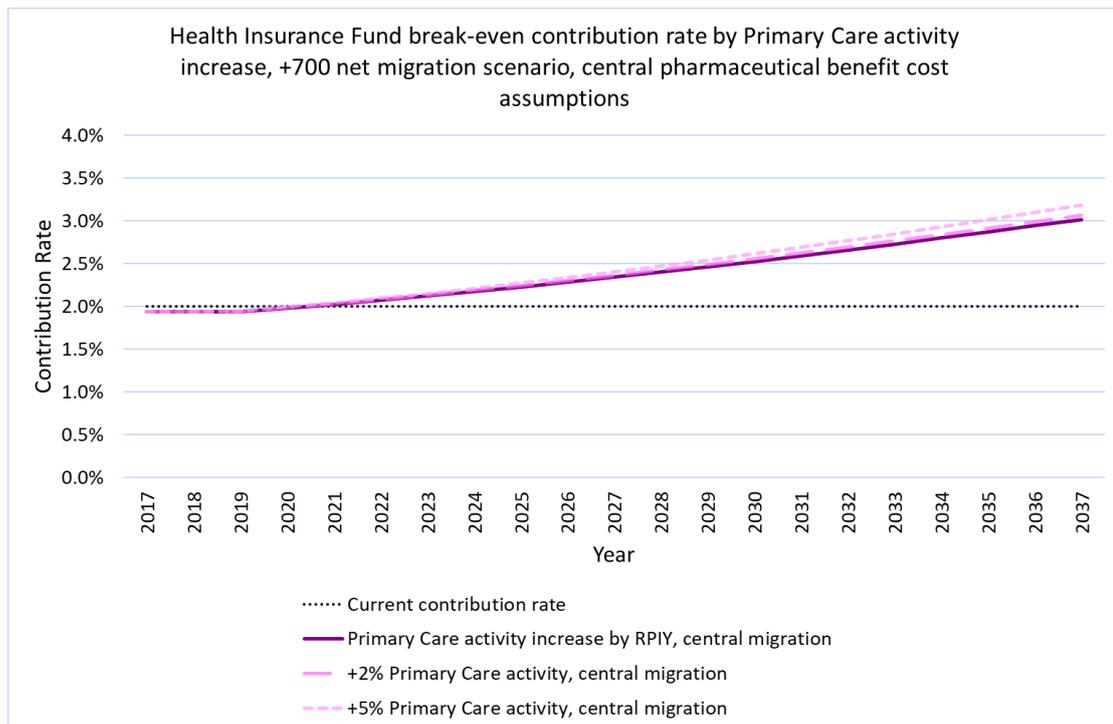


### Primary care activities

5.6 Given the uncertainty about possible growth in primary care activities, it was reasonable to consider two variant assumptions about the growth of expenditure on primary care activities. In the central projections in section 4 and in the projections above, the assumption is that expenditure on primary care activities is £2 million in 2018 and rises thereafter in line with RPIY. Following discussion with Strategic Policy, Performance and Population Department (SPPP) staff I investigated the two alternative assumptions of:

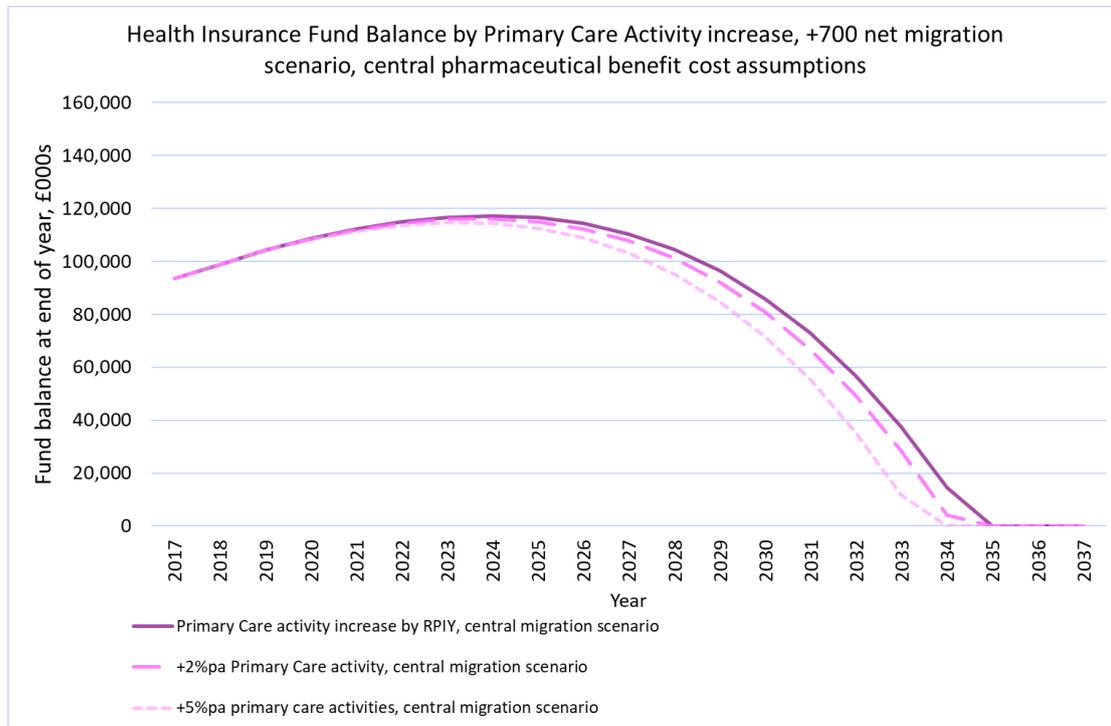
- > Increase in expenditure on primary care activities at RPIY + 2% a year
- > Increase in expenditure on primary care activities at RPIY + 5% a year

**Figure 5.9: Projected break-even contribution rates showing results on variant assumptions for increases in primary care activity expenditure**





**Figure 5.10: Projected Fund balance in cash terms showing results on variant assumptions for increases in primary care activity expenditure**



- 5.7 Primary care activities are only a small part of the expenditure of the HIF as at 2018, and even when they increase faster than prices, they still do not grow to be particularly significant part of total expenditure (around £9 million in 2037 under the RPIY + 5% growth assumption, compared to around £17 million for medical benefit and over £70 million for pharmaceutical benefit). Therefore these variants do not show considerable changes in the projected results in terms of higher break-even contribution rates or earlier dates of exhaustion of the assets of the HIF.

### Other variants

- 5.8 I investigated the effect of changing the assumption for investment return. The break-even contribution rate was unchanged by this (because the break-even contribution rate is defined as the rate that would be required in order for contribution income to equal expenditure on benefits and administration costs, ignoring any balance built up in the Fund). Increasing the assumed rate of investment return from 0.75% a year in excess of assumed earnings growth to 2% a year in excess of assumed earnings growth (that is, from 3.75% a year gross to 5% a year gross) altered by about a year the projected date of fund exhaustion on the central scenario. So fund exhaustion would be expected in 2036 rather than 2035.



## **6 Comparison of results in this report with those from the report on the previous actuarial review**

- 6.1 Comparison of the results of a review such as this with the results of the previous review provides a check on the results of the current review. It also serves to provide explanations of the changes between the results shown in the two reviews, by breaking the overall change between the results of the reviews into a number of steps, with each step caused by separate changes, either to the assumptions for the future, or as a result of known changes in the period between the effective dates of the two reviews.
- 6.2 The major cause of change in projected results from the 2012 review arises from the change in assumptions about rates of benefit growth and lower than projected benefit cost growth in the period 2012 to 2017. This in turn confirms the finding in section 5 that the projections of the Fund's finances are most sensitive to the assumptions made about these rates of growth, and therefore that controlling these aspects of benefit expenditure may be central to maintaining the finances of the Fund in good order.
- 6.3 The results of the 2012 review (on the +700 people a year net immigration assumption) were that the fund would be exhausted by the mid-2020s on the basis that the current contribution rate would continue. The current review on the central assumptions shows the fund would be exhausted in 2034. This is consistent with the findings for the break-even contribution rate shown. Again the major effect in altering the projected date of Fund exhaustion is the change to assumptions about the rates of benefit growth in future and the effect of lower than projected benefit cost growth in the period 2012 to 2017.
- 6.4 The order and the nature of the steps investigated is explained in the table overleaf.



**Table 6.1 – changes in assumptions and data since the 2012 review**

| Nature of change in assumptions/data   | Effect   |
|--|--|
| Moving from the population projections used for the 2012 review (variant using +700 people a year net immigration) to those used for the 2017 review | Negligible effect (a bigger effect would have been shown had the analysis started with the 2012 central projection based on +325 people a year net immigration; the effect of moving between the +325 people a year and +700 people a year population projections for the 2012 review results can be seen in the 2012 review report).  |
| Moving from the earnings distributions adopted for the contributions estimates in the 2012 review to those used for the 2017 review                  | Negligible effect  |
| Adoption of 2017 review assumptions for economic factors and rates of future benefit growth  | <p>Substantial and increasing reduction in projected break-even contribution rate.</p> <p>Lower increases in earnings cause the break-even contribution rate to go up. However, lower rates of benefit growth bring down projected expenditure significantly enough both to balance out this effect and decrease the break-even contribution rate further, and by increasing amounts over the projection period.</p> |
| Incorporation of actual 2012 to 2017 benefits data   | <p>Substantial reduction in break-even contribution rate – in essence the 2012 review projected benefit expenditure in 2017 which was substantially higher than that actually seen. When the actual data were taken into account as a starting point for the 2017 projections, the benefit expenditure and therefore the break-even contribution rate projected for all future years were reduced pro rata</p>       |
| Incorporation of actual 2012 to 2017 contributions data  | <p>Small increase in break-even contribution rate. Although this final change does not alter projected benefit expenditure, it serves to reduce the contribution base used as the denominator in the break-even contribution rate because the actual earnings increases over the period 2012 to 2017 were rather lower than assumed for the 2012 review</p>  |



## Appendix A: Limitations

- A.1 This report has been prepared for the Minister for Social Security and the Department for Social Security (“the Client”), although it is understood that the report will be made publicly available.
- A.2 However, no person or third party is entitled to place any reliance on the contents of this report, except to any extent explicitly stated herein, and GAD has no liability to any person or third party for any act or omission taken, either in whole or part, on the basis of this report.
- A.3 In preparing this report, GAD has relied on data and other information supplied by the Client, as described in the report. Any checks that GAD has made on this information are limited to those described in the report, including any checks on the overall reasonableness and consistency of the data. These checks do not represent a full independent audit of the data supplied. In particular, GAD has relied on the general completeness and accuracy of the information supplied without independent verification.
- A.4 It is anticipated that the results in this report will be used by the Client for information purposes and for considering possible changes to contributions or benefits payable. However, before deciding on any potential changes, further actuarial advice should be sought in order to confirm the potential impact on the finances of the Fund.
- A.5 GAD are not legal or investment advisers and our advice does not constitute legal or investment advice. Advice in these areas should be sought from appropriately qualified persons or sources.
- A.6 This report has been prepared for use by persons technically competent in the areas covered. This report must be considered in its entirety, as individual sections, if considered in isolation, may be misleading, and conclusions reached by review of some sections on their own may be incorrect.
- A.7 In some circumstances, our report may be translated into other languages. In this case, GAD will not be held responsible for any action taken on the basis of the translated report rather than the English version. Any translation of the report must make it clear that only the original English language version is definitive.



## Appendix B: Summary of benefits, other payments and contributions

- B.1 This appendix summarises the principal provisions regarding the benefits and contributions set out in the Health Insurance (Jersey) Law 1967 as at 1<sup>st</sup> January 2018 on which the estimates in this review have been based. This summary concentrates on those aspects of the benefit entitlement and contributions payable that are significant in financial terms. This review also allows for the increases in pension age legislated on 17<sup>th</sup> June 2014.

### Benefits

|   |   |
|---|---|
| Eligibility   | To be eligible for the benefits, the individual must have been resident in Jersey and paid the appropriate social security contributions (unless exempt) for at least six months. In effect I understand and assume that the Fund covers all those who have been resident in Jersey for at least six months.  |
| Medical Benefit (refunds in respect of GP consultation charges, GP letters of referral and pathology benefit) | <p>The Health Insurance Fund (HIF) provides a payment towards the cost of consultations with a general practitioner (GP). This benefit has been £20.28 for the whole period covered by the review. The patient is required to meet the difference between the doctor's actual charge and the rate of Medical Benefit. Since 2015 £20 is paid direct to the GP and £0.28 paid separately to cover certain administrative costs – the distinction in destination of the amounts is not material in projecting the finances of the HIF, and for the purposes of the calculations for this report, a figure of £20.28 will be used.</p> <p>Until 2015 medical benefit was also payable for an “item of service”, that is a letter of referral from the GP to a consultant.</p> <p>A pathology benefit is paid in respect of the charges made for tests relating to haematology and clinical chemistry at a rate of £10.35 for the whole period of the review.</p> |



## Appendix B: Summary of benefits, other payments and contributions (cont)

### Pharmaceutical benefit

The HIF provides a benefit in respect of approved drugs prescribed by GPs or dentists and dispensed by community pharmacists. In addition to meeting the cost of the drug itself, the Department pays a dispensing fee for each prescription dispensed, and a formula is applied to the value of discount achieved by the pharmacist, to create the total remuneration package.

The HIF pays the full dispensing cost of drugs prescribed by the patient's GP or dentist. The prescription charge (the part of the drug cost met by the patient) was set to zero in February 2008. Drugs must be on the "prescribed list" designated by the Minister for Social Security in order to qualify for support from the Fund.

Dispensing fees are paid under a two-tier rate. A pharmacist receives a basic dispensing fee of £3.51 for the first 50,000 items he or she supplies, and a basic dispensing fee of £3.13 for each further item dispensed in the period.

Amounts shown for the pharmaceutical benefits in the Minister's Reports are net of amounts of notional discount clawed back.

### Gluten-free vouchers

Vouchers are provided for individuals who cannot take gluten in their diet. The value of the voucher is £14 a week for each beneficiary. Conditions for receiving the vouchers were tightened in 2017.



## Appendix B: Summary of benefits, other payments and contributions (cont)

### Other payments from the Fund

In 2015 the States of Jersey introduced the Jersey Quality Improvement Framework (JQIF) under which payments were to be made to GP practices under a standard contract with the aim of encouraging high quality outcomes for patients. All GP surgeries participate in the framework, which distributes payments according to whether practices meet some or all of around 35 clinical and organisational measures. The amounts paid were around £1.6 million in each of 2015, 2016 and 2017.

Since 2017 various other payments have been made by the HIF under contract to GP practices and pharmacies for activities such as undertaking vaccinations against influenza. These amounted to around £350,000 in 2017. Payments for more activities may be introduced in the near future (some may have been introduced since the effective date of the review).

The total cost of such “primary care activities” – the JQIF programme and HIF contracts – is likely to be around £2 million a year in 2018, increasing in line with RPIY from 2017 until 2020, and the assumption in this report is that this rate of increase will continue thereafter. Primary care activity related to cervical smears is expected to reduce the number of GP visits leading to a medical benefit payment by 3,000 a year from mid-2018.

Transfers from the Fund for primary care funding (£2 million in 2013, £6 million in each of 2014 and 2015) did not occur in 2016 or 2017, and are not expected to start again.



## Appendix B: Summary of benefits, other payments and contributions (cont)

### Contributions

Standard Earnings Limit (SEL) £4,180 a month in 2017 (having been £3,834 in 2013, £3,918 in 2014, £4,020 in 2015, £4,094 in 2016, and being £4,290 in 2018)

Class 1 contributions Class 1 contributions are required from everyone on the Island between school leaving age and pension age who works for an employer for more than eight hours a week, with some exceptions. Employees and employers both pay Class 1 contributions, based on the employee's earnings.

The contribution to the Jersey Health Insurance Fund is 2% of earnings up to the SEL, split 1.2% from the employer and 0.8% from the employee. There is no State contribution.

The employee does not need to pay contributions if they are over pension age, or meet certain other conditions.

Class 2 contributions Those who do not pay Class 1 contributions pay Class 2 contributions, unless they are exempt.

The contribution to the Jersey Health Insurance Fund is 2% of the SEL, or 2% of actual earnings up to the SEL where the individual is eligible to pay earnings-related contributions. There is no States contribution.

A self-employed person does not pay contributions if they are over pension age, or meet certain other criteria.

States of Jersey vote The States makes no payment to the Fund.



## Appendix C: Fund accounts since 1 January 2012

- C.1 A summary of the transactions of the Health Insurance Fund in the period since 31<sup>st</sup> December 2012 appears in Table C.1 overleaf. These figures are taken from the Fund's audited accounts and Minister's report and information on restatements provided by Government of Jersey staff. Figures for 2012 are given for comparison.



## Appendix C: Fund accounts since 1 January 2012 (cont)

**Table C.1: Income and outgo of the Health Insurance Fund in the period from 1<sup>st</sup> January 2012 to 31<sup>st</sup> December 2017 (£ thousands)**

| <b>Year ending 31<sup>st</sup> Dec</b>               | <b>2012</b>         | <b>2013</b>   | <b>2014</b>   | <b>2015</b>   | <b>2016</b>   | <b>2017</b>   |
|--|---------------------|---------------|---------------|---------------|---------------|---------------|
| Fund at year start                                   | 75,028 <sup>3</sup> | 77,154        | 82,225        | 81,617        | 75,680        | 86,341        |
| Contributions <sup>4</sup>                           | 28,351              | 28,126        | 29,628        | 31,130        | 31,705        | 32,948        |
| Net gains and income on investments                  | 8,406               | 8,653         | 5,776         | 1,175         | 11,086        | 6,250         |
| Other income   |                     |               | 193           | 315           | 43            |               |
| <b>Total Income</b>                                  | <b>36,757</b>       | <b>36,779</b> | <b>35,597</b> | <b>32,620</b> | <b>42,834</b> | <b>39,198</b> |
| Medical Benefit (including pathology benefits)       | 9,092               | 8,836         | 8,837         | 8,222         | 8,136         | 7,878         |
| Pharmaceutical benefit (net of prescription charges) | 17,398              | 18,121        | 18,861        | 20,166        | 20,191        | 19,828        |
| Gluten-free food vouchers                            | 222                 | 256           | 279           | 329           | 393           | 471           |
| Transfer for primary care funding                    | 6,131               | 2,000         | 6,000         | 6,000         |               |               |
| Jersey Quality Improvement Framework (JQIF)          |                     |               |               | 1,583         | 1,587         | 1,579         |
| HIF contracts  |                     |               |               |               |               | 348           |
| Administration costs                                 | 1,638               | 2,495         | 2,213         | 2,256         | 1,867         | 1,808         |
| <b>Total outgo</b>                                   | <b>34,481</b>       | <b>31,708</b> | <b>36,190</b> | <b>38,556</b> | <b>32,173</b> | <b>31,912</b> |
| Excess of income over outgo                          | 2,276               | 5,071         | -593          | -5,936        | 10,661        | 7,286         |
| Adjustment for unallocated amounts                   | -150                |               | -15           |               |               |               |
| Fund at year end                                     | 77,154              | 82,225        | 81,617        | 75,680        | 86,341        | 93,627        |
| Ratio of mean fund/outgo (months)                    | 33                  | 34            | 34            | 29            | 30            | 34            |

<sup>3</sup> This figure was restated from £77,696,000 as a result of contributions restatement dating back to 2011

<sup>4</sup> These amounts may differ from those in published accounts due to restatement in respect of years 2012, 2013 and 2014



### Appendix C: Fund accounts since 1 January 2012 (cont)

- C.2 Before allowing for transfers for primary care funding, contribution income exceeded expenditure in each of the years from 2013 to 2017, while the average Fund was between 2 and 3 times annual expenditure in all years.
- C.3 A summary of the assets held in the Health Insurance Fund as at 31<sup>st</sup> December 2017 is given in Table B.2 below.

**Table C.2: Summary of the market value of the assets of the Health Insurance Fund as at 31<sup>st</sup> December 2017**

|                           | £million    | %          |
|---------------------------|-------------|------------|
| Equity Class Assets       | 35.8        | 41         |
| Fixed Income Class Assets | 38.6        | 44         |
| Cash Class Assets         | 13.1        | 15         |
| <b>Total</b>              | <b>87.5</b> | <b>100</b> |



## Appendix D: Summary of data

- D.1 The accuracy of the numerical results of the review is dependent on the data on which they are based. If the data contain material inaccuracies or omissions, this could have a significant effect on the results of the review. Data are used in three main areas:
- > as the starting point of the projections
  - > to help select appropriate assumptions about the future, although it will also be necessary to take account of expected future trends
  - > as a validation of the projection methodology; in particular the results from earlier projections made for the previous review which used the same methodology are compared with the out-turn figures in the accounts for those years.
- D.2 The main sources of data were as follows:
- > Data on the insured population and medical benefits, including pathology benefit but not pharmaceutical benefits, split by the age and sex of the insured person/patient for each year from 2012 to 2017 from the HIF IT system – though Strategic Policy, Performance and Population Department (SPPP) staff indicated that because of changes in practice in 2017, the data for that year were a better basis for projections than those for earlier years
  - > The information in the “Minister’s report” for the Social Security Department for the years from 2012 to 2017, including additional tables (not published as I understand it) for 2017 in the same format as had appeared in previous years
  - > The information in the audited “States of Jersey Annual Reports and Accounts”
  - > Projections of the population for Jersey as used for the actuarial review of the Social Security Fund as at 31<sup>st</sup> December 2017
  - > Information from Government of Jersey staff on the past and likely future expenditure on various programmes under Jersey Quality Improvement Framework (JQIF).
- D.3 I have not carried out a full audit of the data, but I have made some simple checks for reasonableness and consistency between data sources. There were a few instances in which the detailed data on numbers of consultation and pathology benefits by age and sex appeared unusual, but it is unlikely that any issues here are material, and these issues were not investigated further. Hence I believe that the data appear to be adequate for the purposes of the review.



### Appendix D: Summary of data (cont)

- D.4 The projections of the balance in the Fund has been based on the market value of the assets as at 31<sup>st</sup> December 2017 shown in the 2017 “Minister’s report”.
- D.5 A summary of the data provided for the review is shown in table D.1 below.

**Table D.1: Summary of the benefit data for the years 2013 to 2017 that were used in the review (with 2012 given for comparison)**

|   | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
|---|---------|---------|---------|---------|---------|---------|
| Number of consultations   | 363,601 | 351,099 | 349,102 | 355,497 | 358,914 | 334,000 |
| Number of letters of referral for which a medical benefit was paid <sup>5</sup> | 51,206  | 37,198  | 41,908  | 0       | 0       | 0       |
| Number of pathology items   | 84,562  | 88,763  | 86,250  | 89,308  | 90,929  | 91,700  |
| Number of prescription items (000s)   | 1,785   | 1,847   | 1,872   | 1,937   | 1,983   | 1,960   |
| Number of gluten-free claimants   | 373     | 423     | 481     | 572     | 641     | 702     |

<sup>5</sup> No medical benefit is paid for letters of referral provided by GPs after 2015



## Appendix E: Methodology and technical assumptions

- E.1 This appendix summarises the central assumptions used in deriving the estimates of income and expenditure shown in Section 4 of this report. There are three main categories of assumptions:
- > Membership assumptions used for projecting the members who are eligible to receive benefits from the Fund and those who pay contributions to the Fund
  - > Economic assumptions, covering matters such as the rate of earnings growth and the investment return on the Fund assets
  - > Benefit assumptions covering the projection of the individual benefits payable from the Fund.
- E.2 The central assumptions have been chosen so that they represent a reasonable estimate of the likely future experience of the Fund with no explicit (or implicit) margin for prudence. A summary of the central assumptions is set out in the table overleaf, with the corresponding assumptions made at the previous review as at 31<sup>st</sup> December 2012.



## Appendix E: Methodology and technical assumptions (cont)

**Table E.1: Summary of the central assumptions**

| <b>Membership</b>                             | <b>2017 review</b>  | <b>2012 review</b>  |
|---|---|---|
| Membership numbers                            | <p>Equal to projected population, based on the projections prepared by the Statistics Jersey for the 2017 Social Security Fund review, assuming:</p> <ul style="list-style-type: none"> <li>&gt; +325 annual net inward migration and</li> <li>&gt; +700 annual net inward migration</li> <li>&gt; +1000 annual net inward migration</li> </ul> | <p>Equal to projected population, based on the projections prepared by the States' Statistics Unit for the 2012 Social Security Fund review, assuming:</p> <ul style="list-style-type: none"> <li>&gt; annual net nil migration,</li> <li>&gt; +325 annual net inward migration and</li> <li>&gt; +700 annual net inward migration</li> </ul> |
| Contributor numbers                           | Based on actuarial review of the Social Security Fund as at 31 <sup>st</sup> December 2017  | Based on the actuarial review of the Social Security Fund as at 31 <sup>st</sup> December 2012  |
| <b>Economic</b>                               | <b>2017 review</b>  | <b>2012 review</b>  |
| Earnings growth                               | 3.0% a year, with actual figure (3.5%) for 2018 as published by Statistics Jersey in August 2018, and projection for 2019 from Jersey Fiscal Policy Panel's August 2018 document  | 4.25% per annum   |
| Price inflation                               | RPIY of 3.0% a year, from the Jersey Fiscal Policy Panel's August 2018 document, with actual figure, 4.2%, in 2018 (increase in year to June 2018)  | 3.0% per annum  |
| Increase in earnings limits for contributions | In line with earnings   | In line with earnings   |
| Investment return on Fund assets              | 0.75% a year above earnings (3.75% nominal from 2020 until end of the projection period in 2037)  | 0.75% per annum above earnings (5.0% per annum nominal)   |



## Appendix E: Methodology and technical assumptions (cont)

**Table E.1: Summary of the central assumptions (cont)**

| <b>Benefits</b>   | <b>2017 review</b>  | <b>2012 review</b>  |
|---|---|---|
| Increase in rate of Medical Benefit (payments toward GP consultation charges and pathology benefit) | The medical benefit for GP consultations will remain fixed £20.28 (including component for administration) in 2018 and 2019, and increase thereafter in line with RPIY  | In line with prices   |
| Number of consultations per head  | In line with a scale based on age and sex based on consultation numbers in 2017 as shown below; this scale is assumed to remain constant over time and therefore changes in the number of consultations are entirely driven by changes in the age and sex distribution of the population. A reduction of 3,000 consultations a year is applied from mid-2018 to reflect a change in the approach to paying for cervical smears (see assumptions for expenditure on primary care activities below) | In line with a scale based on age and sex; this scale is assumed to remain constant over time and therefore changes in the number of consultations are entirely driven by changes in the age and sex distribution of the population |
| Pathology benefit   | Expenditure increases in line with increases in other medical benefit paid for GP consultations (pathology benefit is assumed a constant proportion of medical benefit, with that proportion based on the average seen in 2013 to 2017 inclusive)   | (Although not stated explicitly the 2017 stated assumption was the approach adopted for the 2012 review)  |



## Appendix E: Methodology and technical assumptions (cont)

**Table E.1: Summary of the central assumptions (cont)**

| <b>Benefits (cont)</b>   | <b>2017 review</b>   | <b>2012 review</b>   |
|--|--|--|
| Average number of pharmaceutical items per visit   | 6.0 in 2018  |  |
| Increase in number of prescription items per consultation                                  | Two variants of<br>> 1.0% a year<br>> 2.5% a year  | 4.0% per annum   |
| Average ingredient cost of drugs (for each prescription item)                              | £6.70 in 2018. This is net of the effects of any “claw-back” to reflect discounts pharmacists may obtain when purchasing drugs   |  |
| Increase in average ingredient costs of drugs  | In line with earnings increases<br>A variant of (earnings + 2% a year) to be combined with 2.5% a year increase in average items   | In line with earnings increases  |
| Increase in average dispensing cost of drugs (that is, the remuneration of the pharmacist) | Dispensing fees to remain fixed at 2017 levels, at £3.13 and £3.51 for each item dispensed (higher rate paid to smaller pharmacies dispensing fewer than 50,000 items a year), until at least 2019. The overall average is very close to the higher rate, and a value of £3.50 for 2018 and 2019 has been assumed, with increases for future years in line with RPIY | In line with prices (second tier fixed until 2015), with 25% of items assumed to qualify for the first tier dispensing fee |
| Increase in expenditure on gluten-free vouchers  | In line with prices and growth in the total membership of the Fund   | In line with prices and growth in the total membership of the Fund   |



## Appendix E: Methodology and technical assumptions (cont)

**Table E.1: Summary of the central assumptions (cont)**

| Other payments and administration   | 2017 review   | 2012 review                                |
|---|---|--|
| Expenditure on primary care activities – Jersey Quality Improvement Framework (JQIF) and HIF contracts for items such as flu vaccinations and cervical smears | <p>General payments – £2.0 million in 2018 increasing in line with prices (RPIY) thereafter</p> <p>The cervical smear programme results in a reduction of 3,000 GP consultations reimbursed as medical benefits a year</p> <p>Other than the effect of cervical smears, it is assumed that the primary care activities have no knock-on effect on the level of other medical benefits</p> <p>Variant rates of increase for expenditure on primary care activities of</p> <ul style="list-style-type: none"> <li>&gt; RPIY + 2% a year</li> <li>&gt; RPIY + 5% a year</li> </ul> | N/A  |
| Administration  | Projected as a 6.0% of benefit expenditure including JQIF expenditure   | Projected as a 6.9% of benefit expenditure |

- E.3 The remainder of this appendix gives more details of the key assumptions and explains how they were derived or gives other rationale for their adoption, and where necessary some commentary as to how assumptions differ from those used for the previous actuarial review of the Fund as at 31<sup>st</sup> December 2012.



## Appendix E: Methodology and technical assumptions (cont)

### *Membership assumptions*

- E.4 The Fund covers all those who have been resident in Jersey for at least six months. It has therefore been assumed that the entire population is eligible for benefits, except very short-term migrants, and the assumption is that the entire population as stated in the demographic projections prepared by Statistics Jersey are insured. These are the same population projections as are being used for the actuarial review of the Social Security Fund as at 31<sup>st</sup> December 2017, which is being prepared at the same time as this report. In particular, the projections were based on three assumptions about future migration to Jersey:
- > +325 annual net inward migration
  - > +700 annual net inward migration
  - > +1000 annual net inward migration.
- E.5 There were three demographic scenarios in the review as at 2012, two of which were (broadly) the same as shown above. The 2012 scenarios were
- > nil annual net inward migration
  - > +325 annual net inward migration
  - > +700 annual net inward migration
- The substitution of a scenario with higher net inward migration for one with nil net inward migration is consistent with higher rates of net inward migration in recent years.
- E.6 A summary of the projected population over the period to 2037 is shown in the three tables overleaf. The pension support ratio (PSR) is the ratio of the population between age 16 and pension age (pen age) (= W) and the population over pension age (= P). Pension age is due to increase from 65 to 67 over the period from 2020 to 2031. Further details of the projections are given in my March 2019 report on the 2017 review of the Social Security Fund, particularly section 4 and appendix E .



## Appendix E: Methodology and technical assumptions (cont)

**Table E.2A: The projected population of Jersey at the year end from 2017 to 2037 assuming net future immigration of 325 people each year and the fertility and mortality assumptions described above**

|                      | 2017           | 2022           | 2027           | 2037           |
|----------------------|----------------|----------------|----------------|----------------|
| <b>Persons</b>       |                |                |                |                |
| 0-15                 | 17,664         | 18,003         | 17,874         | 17,830         |
| 16-pen age (W)       | 68,676         | 69,516         | 70,588         | 70,092         |
| Pen age and over (P) | 17,563         | 19,289         | 20,991         | 25,927         |
| <b>Total</b>         | <b>103,903</b> | <b>106,808</b> | <b>109,453</b> | <b>113,848</b> |
| PSR (=W/P)           | 3.9            | 3.6            | 3.4            | 2.7            |

**Table E.2B: The projected population of Jersey at the year end from 2017 to 2037 assuming net future immigration of 700 people each year and the fertility and mortality assumptions described above**

|                      | 2017           | 2022           | 2027           | 2037           |
|----------------------|----------------|----------------|----------------|----------------|
| <b>Persons</b>       |                |                |                |                |
| 0-15                 | 17,777         | 18,568         | 18,955         | 19,916         |
| 16-pen age (W)       | 69,310         | 71,685         | 74,379         | 77,449         |
| Pen age and over (P) | 17,573         | 19,329         | 21,072         | 26,197         |
| <b>Total</b>         | <b>104,660</b> | <b>109,582</b> | <b>114,407</b> | <b>123,562</b> |
| PSR (=W/P)           | 3.9            | 3.7            | 3.5            | 3.0            |

**Table E.2C: The projected population of Jersey at the year end from 2017 to 2077 assuming net future immigration of 1,000 people each year and the fertility and mortality assumptions described above**

|                      | 2017           | 2022           | 2027           | 2037           |
|----------------------|----------------|----------------|----------------|----------------|
| <b>Persons</b>       |                |                |                |                |
| 0-15                 | 17,867         | 19,020         | 19,820         | 21,583         |
| 16-pen age (W)       | 69,818         | 73,420         | 77,413         | 83,338         |
| Pen age and over (P) | 17,582         | 19,361         | 21,137         | 26,413         |
| <b>Total</b>         | <b>105,266</b> | <b>111,801</b> | <b>118,370</b> | <b>131,334</b> |
| PSR (=W/P)           | 4.0            | 3.8            | 3.7            | 3.2            |



## Appendix E: Methodology and technical assumptions (cont)

- E.7 The pensioner support ratio declines in all scenarios as a result of the increased numbers of the elderly and, in the case of the +325 net inward migration population projection variant, only a small increase in the working population. This is an important measure for the Fund since benefits are provided to nearly all residents but contributions are only received from those of working age. In addition, benefits are paid disproportionately in respect of those over pension age. Therefore, the decline in the support ratio will, other things being equal, lead to an increase in expenditure relative to contribution income.
- E.8 The patterns observed in the population projections and the development of the support ratio are similar to those seen for the previous review as at 2012.

### *Economic assumptions*

- E.9 In August 2018 the Jersey Fiscal Policy Panel (FPP) issued a revised set of economic assumptions covering matters such as future inflation and earnings growth<sup>6</sup>. I was asked by the Social Security Department to adopt these as the assumptions for the review (with the assumption for price inflation, where needed, being taken as the RPIY figures). The published figures are for 2018, 2019 and trend figures for years from 2020 onwards. Although I was given to understand that the FPP intends this trend to apply up to 2030, I consider to use them for the entire projection period, that is, until 2037 (the materiality of different assumptions in the last 7 years of the projection would be limited).
- E.10 The relevant assumptions are summarised in the table below:

**Table E.3: economic assumptions – %age annual increases set out in the Jersey Fiscal Policy Panel August 2018 report**

|                         | 2018<br>(actual<br>figures<br>from<br>Statistics<br>Jersey) | 2019 | 2020 and all later<br>years |
|-------------------------|---|------|-----------------------------|
| <b>RPIY</b>             | 4.2   | 3.0  | 3.0                         |
| <b>Average earnings</b> | 3.5   | 3.9  | 3.0                         |

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<https://www.gov.je/SiteCollectionDocuments/Government%20and%20administration/August%202018%20economic%20assumptions.pdf>



## Appendix E: Methodology and technical assumptions (cont)

- E.11 I understand the reasons behind the assumptions as promulgated by the FPP, in particular the concerns about low productivity growth that give rise to assumed trend for no economy-wide real earnings in the medium term. I am happy to use these assumptions.
- E.12 The assumption for price inflation is the same as in the previous review as at 2012. The assumption for earnings growth is lower (it was 4.25% in that earlier review). This lower rate of earnings growth assumed will affect both the projected income and expenditure of the Fund, because some items of expenditure are assumed to increase in line with earnings, or have unit costs that increase in line with earnings, and because lower assumed earnings growth may be expected to reduce projected contribution income. Overall it is to be expected that the reduction in the earnings growth assumption will serve to increase projected break-even contribution rates and bring forward the year in which the Fund's assets are expected to be exhausted.
- E.13 Projections of contributions to the Fund follow the approach and detailed assumptions used for the simultaneous review of the Jersey Social Security Fund, and are detailed in the report on that review issued in March 2019, appendix F, paragraphs F.13 to F.22.

### *Investment return*

- E.14 The actual investment return earned on the assets of the Fund over the years 2013 to 2017 has varied considerably. The proposed assumption for investment return for years after 2017 is rather lower than the average actual investment return in years 2013 to 2017. However the results of the review should not be greatly affected by the assumption because:
- > the assumed rate of investment return does not affect the break-even contribution rate, which is simply a function of outgo on benefits (and administration) and income from contributions; and
  - > the year in which it is projected that the Fund will be exhausted is not greatly sensitive to the assumption as the Fund size is relatively small compared to benefit outgo.
- E.15 The assumption made is the same when expressed in real terms (net of earnings) as that made for the previous review. However the lower assumption for the rate of earnings increases over the projection period means that the gross assumption for investment return is lower in this review than for the previous one. However, as noted in the preceding paragraph, the results of the review are unlikely to be substantially changed by this assumption.



## Appendix E: Methodology and technical assumptions (cont)

### *Benefit assumptions: Medical Benefit – future increases*

- E.16 Following discussion with Strategic Policy, Performance and Population Department (SPPP) staff I have assumed that there is an increase to the rate of medical benefit paid to GPs in respect of consultations in line with RPIY from 2020 onwards (that is, the rates in 2018 and 2019 remain at the same cash level as in 2017, £20.28).

### *Benefit assumptions: Medical Benefit – number of consultations*

- E.17 At the previous review it was noted that the average number of consultations for each person in a year had been falling, from around 5 in the late 1990s to a little over 4 around 2010. The average number of consultations for each person in the population (the numbers in the population are very similar to the insured population as might be expected, and it is on the projected population that projected benefits will be based) is somewhat lower still – an average of between 3.46 and 3.40 consultations for each person a year in 2013 to 2016 inclusive.
- E.18 The figure for 2017 was even lower, at an average of 3.21 consultations for each person. The average number of consultations for each person in 2017 was lower than it had been in the years 2013 to 2016 for both sexes and in all (5 year) age groups. SPPP staff explained that this was likely to represent an actual step change in the rates of consultations, as a result of certain activities designed to enhance primary care (the JQIF and HIF contract programmes).
- E.19 For this reason I have based the assumption for average number of consultations for each person in a year on the data for 2017 alone. It should be noted that this generally excludes the possibility of further step changes in the numbers of consultations as a result of implementation of further elements of primary care activities. However, it is proposed that the projection of number of consultations for which medical benefits are paid does take into account a reduction of 3,000 consultations a year from mid-2018 as a result of how cervical smear tests are paid for.
- E.20 The nature of this assumption is that future changes in the population structure will drive the number of GP consultations (and, by extension, most other significant items of benefit expenditure from the Fund). Implicit within the assumption and modelling methodology is the assumption that future improvements in life expectancy will not see improvements in health for individuals at any given age, at least not improvements in health that see such individuals needing to visit their GP less frequently.



## Appendix E: Methodology and technical assumptions (cont)

- E.21 The proposed scales for men and women by age group before allowance for the cervical smear adjustment, based closely on the observed rates for 2017, are given in table D4 below:

**Table E.4: Proposed scale of annual number of consultations per head by age and sex**

| Age group | 2017 review |       | 2012 review |       |
|-----------|-------------|-------|-------------|-------|
|           | Men         | Women | Men         | Women |
| 0-4       | 4.70        | 4.20  | 4.75        | 4.50  |
| 5-9       | 1.40        | 1.50  | 2.00        | 2.25  |
| 10-19     | 1.10        | 1.70  | 1.50        | 2.00  |
| 20-29     | 1.40        | 3.00  | 2.00        | 4.00  |
| 30-39     | 1.80        | 3.60  | 2.50        | 4.75  |
| 40-49     | 2.20        | 3.50  | 3.00        | 4.50  |
| 50-59     | 2.90        | 3.70  | 4.00        | 5.00  |
| 60-69     | 3.70        | 4.10  | 5.25        | 5.75  |
| 70-79     | 5.70        | 6.10  | 7.00        | 7.75  |
| 80-89     | 7.40        | 7.80  | 9.50        | 9.50  |
| 90 +      | 10.80       | 10.00 | 12.50       | 13.00 |

- E.22 As can be seen, the proposed assumption for the current review is below that adopted for the previous review for both sexes and in all age groups. However the shape by age and the relativities of male and female rates are very similar, which gives considerable comfort that the proposals are reasonable.

*Benefit assumptions: Medical Benefit – pathology benefit*

- E.23 The proposed assumption, which is that the total amount paid as pathology benefit increases in line with the medical benefit paid for GP consultations, implicitly assumes that the monetary rate of the pathology benefit increase from 2019 in line with RPIY as is assumed for the rate of the medical benefit for GP consultations. The pathology benefit is comparatively small, at around £1 million a year, so any errors in the projections introduced by this simplifying assumption would likely be immaterial. The proposed methodology is the same as for the previous review.



## Appendix E: Methodology and technical assumptions (cont)

### *Benefit assumptions: pharmaceutical benefit – number of prescription items per consultation*

- E.24 The biggest item of expenditure from the Fund is on pharmaceutical benefit, with the payments for the cost of drugs being around 41% of total expenditure in 2017, and the dispensing fees paid to pharmacists being around 21%. However there are no data on the number of prescriptions or the cost of drugs by sex or age of patient. Instead the projection methodology used for previous reviews has relied on an assumption for the number of prescription items for each visit to a GP reimbursed by medical benefit, and the cost of the drugs provided and dispensing fee. The assumption for the average number of prescription items for each GP visit is itself derived from an assumption of an initial value for the average number, and an assumption about the rate of increase in that number.
- E.25 The 2012 review noted that the average number of prescription items for each GP visit had increased almost continually for each year since the late 1980s from under 2 to over 4. The increases have continued in the period 2013 to 2017, with the average standing at 5.36 in 2013, 5.45 in 2014, 5.53 in 2015, 5.58 in 2016 and 5.83 in 2017. It should be noted that the large increase in prescription items per GP consultation between 2016 and 2017 coincides with the decrease in number of GP consultations reimbursed by a medical benefit as described in paragraph E.18 above. The annual rate of increase is around 3% a year, or around 2.5% a year if the 2017 figure is excluded because of the distortion caused by the change in number of consultations.
- E.26 Given that the projection of the number of consultations will start from the 2017 rates of consultations for each person (see paragraph E.19 above), for consistency the initial assumption about the number of prescription items for each GP consultation should be based on the 2017 figure. A starting assumption of 6.0 prescriptions per consultation has been adopted, which is broadly 2.5% greater than the 2017 experience of 5.83.
- E.27 As noted above the average rate of increase in the average number of prescription items for each GP visit is around 2.5% a year over the period since the last review (excluding the latest year when changes in practice may have distorted the rate of increase). The Social Security Department believe that increases at this level are unlikely to continue, and that a rate of increase of 1% a year is more likely. By way of illustration, a 1% annual rate of increase would lead to an average number of prescription items of 7.2 for each GP visit by 2037, and a 2.5% annual rate of increase would lead to an average number of prescription items of 9.6 for each GP visit by 2037. Given the significance of this assumption to the overall results, because of the large proportion of total Fund expenditure accounted for by pharmaceutical benefits results are produced on both assumptions.



## Appendix E: Methodology and technical assumptions (cont)

- E.28 The rate of increase assumed for the previous review was 4% a year. The lower rates assumed for this review will, other things being equal, serve to reduce projected expenditures.

*Benefit assumptions: pharmaceutical benefit – prescription item costs*

- E.29 Detailed information on prescription numbers and costs and dispensing fees were given in annual Minister's Reports for years up to 2016. The 2017 report was in a slightly different form. However in August 2018 the Social Security Department provided a table giving the data for 2017 and the other years since the effective date of the last review, reproduced as table E.5 below. All amounts are net of any "claw-back" of discounts obtained by pharmacists.

**Table E.5: Prescription costs in the period from 2008 to 2012 (£)**

|   | 2013   | 2014   | 2015   | 2016   | 2017   |
|---|--------|--------|--------|--------|--------|
| <b>Total no. of items prescribed during year 000s</b> | 1,847  | 1,872  | 1,937  | 1,983  | 1,979  |
| <b>Average cost of a prescribed item £</b>            | 6.44   | 6.65   | 6.96   | 6.74   | 6.55   |
| <b>Total cost of prescribed items £000</b>            | 11,901 | 12,449 | 13,478 | 13,375 | 12,954 |
| <b>Pharmacy dispensing fees £000</b>                  | 6,220  | 6,413  | 6,688  | 6,815  | 6,874  |
| <b>Total Cost £000</b>                                | 18,121 | 18,862 | 20,166 | 20,191 | 19,828 |

*Benefit assumptions: pharmaceutical benefit – average cost of prescribed item*

- E.30 The average cost of a prescribed item (the cost of the drugs as opposed to the dispensing cost) has fluctuated over the period within the range £6.44 to £6.96. There is no clear rationale for these fluctuations and the previously noted decline in average costs (ascribed in large part to a move from branded to generic drugs) does not appear to be continuing. The average for each prescribed item for 2018 is assumed to be £6.75.



## Appendix E: Methodology and technical assumptions (cont)

- E.31 Given that the decreases in costs for each prescribed item noted in the previous review are no longer continuing, it seems reasonable to assume that, as with most other items, the average costs will rise in future. I have been asked by the Social Security Department to assume that these future increases will be in line with assumed earnings increases, which seems a reasonable assumption to make. Again, given the likely significance of this assumption to the overall results, calculations will also be performed on a variant assumption of earnings growth + 2% a year increase in average cost.
- E.32 The starting assumption for the cost of a prescribed item proposed – £6.75 in 2018 – is substantially less than the rate assumed for that year in the central projections made for the 2012 review (£8.42). In addition, the rate of increase assumed is also lower (3% a year rather than 4.25% a year, in line with assumed earnings increases in both cases). Therefore, other things being equal, I would expect this change in assumptions to reduce considerably the cost of prescribed items over the projection period used for the previous review (that is, until 2032).

### *Benefit assumptions: pharmaceutical benefit – dispensing fees*

- E.33 The Social Security Department has asked me to assume that there are increases in the dispensing fees paid to pharmacies from 2020 in line with RPIY, starting at the rates £3.13 and £3.51 for each item dispensed (higher rate paid to smaller pharmacies dispensing fewer than 50,000 items a year). The methodology includes the implicit assumption that split between large and small pharmacy rate will remain unchanged. Therefore total expenditure on dispensing fees will rise in line with the number of items dispensed, itself driven by number of GP visits covered by medical benefit and increasing number of prescriptions per visit, and, from 2020, assumed increases in RPIY.
- E.34 The previous review as 2012 assumed that dispensing costs would continue to increase after 2015, the last year for which rates were known at the time the review report was written.



## Appendix E: Methodology and technical assumptions (cont)

### *Benefit assumptions: gluten-free vouchers*

- E.35 The Fund also provides vouchers to those who require a gluten-free diet. The numbers claiming the benefit and the total value of vouchers used increased rapidly over the period since the last review. However SPPP staff have informed me that steps were taken in 2017 to control growth in this benefit, by limiting future awards only to those who have a limited number of conditions which require and benefit from a gluten-free diet. In light of this and given that the vouchers continue to form only a small part of Fund expenditure, the simple assumption from the 2012 review that spending on the vouchers will increase in line with the growth in the total membership of the Fund and price inflation has been retained.

### *Expenditure on primary care activities*

- E.36 Assumptions for these items (the Jersey Quality Improvement Framework (JQIF) programmes and HIF contracts) have been advised to me by SPPP staff. The assumption provided by SPPP staff of £2.0 million a year in 2018 seems reasonable given the level of JQIF expenditure in the years leading up to 2017 (around £1.6 million a year) and the level of HIF contract expenditure in 2017 (around £0.35 million).
- E.37 The assumption that this expenditure will increase after 2018 in line with RPIY was also provided by SPPP staff, and also seems reasonable. After discussion with SPPP staff I have provided variant assumptions where the rate of increase is RPIY + 2% a year and RPIY + 5% a year, to reflect the possibilities that additional services may be offered as part of primary care activities.

### *Administration costs*

- E.38 Administration costs have varied over the 5 years since the effective date of the previous review, both in cash terms and as a percentage of benefit expenditure (excluding transfers for primary care costs in the early years of the period, but including JQIF expenditure in the later years). They were particularly high in 2013 (nearly £2.5 million and over 9% of benefit expenditure), but have fallen since then, and for the latest two years are just under 6% of benefit expenditure including JQIF amounts. Hence I propose to use 6% of benefit expenditure including JQIF amounts as the assumption for future administration costs.



## Appendix F: Summary of projections

**Table F.1: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the central assumptions (assuming +700 net inward migration)**

|  | 2017        | 2022         | 2027         | 2032        | 2037         |
|--|-------------|--------------|--------------|-------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>112.2</b> | <b>114.3</b> | <b>72.9</b> | <b>0.0</b>   |
| Contributions  | 32.9        | 39.8         | 47.3         | 56.0        | 66.4         |
| Investment return  | 6.3         | 4.2          | 4.1          | 2.4         | 0.0          |
| <b>Total income</b>  | <b>39.2</b> | <b>44.0</b>  | <b>51.4</b>  | <b>58.4</b> | <b>66.4</b>  |
| <b>Outgo:</b>  |             |              |              |             |              |
| Medical benefit  | 7.9         | 9.1          | 11.2         | 13.8        | 16.9         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 27.0         | 37.8         | 52.6        | 73.1         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.8         | 1.0          |
| Primary Care Activities  | 1.9         | 2.3          | 2.6          | 3.0         | 3.5          |
| Administration costs   | 1.8         | 2.3          | 3.1          | 4.2         | 5.7          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>41.2</b>  | <b>55.4</b>  | <b>74.5</b> | <b>100.2</b> |
| Excess of income over outgo  | 7.3         | 2.7          | -3.9         | -16.1       | -33.8        |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>114.9</b> | <b>110.4</b> | <b>56.8</b> | <b>0.0</b>   |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 33.0         | 24.3         | 10.4        | 0.0          |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.1%</b>  | <b>2.3%</b>  | <b>2.7%</b> | <b>3.0%</b>  |



## Appendix F: Summary of projections (cont)

**Table F.2: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the low assumption for growth in pharmaceutical benefit costs (assuming +700 net inward migration)**

|  | 2017        | 2022         | 2027         | 2032         | 2037         |
|--|-------------|--------------|--------------|--------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>116.0</b> | <b>136.6</b> | <b>140.6</b> | <b>115.1</b> |
| Contributions  | 32.9        | 39.8         | 47.3         | 56.0         | 66.4         |
| Investment return  | 6.3         | 4.4          | 5.1          | 5.1          | 4.1          |
| <b>Total income</b>  | <b>39.2</b> | <b>44.2</b>  | <b>52.4</b>  | <b>61.2</b>  | <b>70.5</b>  |
| <b>Outgo:</b>  |             |              |              |              |              |
| Medical benefit  | 7.9         | 9.1          | 11.2         | 13.8         | 16.9         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 25.1         | 32.6         | 42.2         | 54.4         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.8          | 1.0          |
| Primary Care Activities  | 1.9         | 2.3          | 2.6          | 3.0          | 3.5          |
| Administration costs   | 1.8         | 2.2          | 2.8          | 3.6          | 4.6          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>39.2</b>  | <b>49.9</b>  | <b>63.4</b>  | <b>80.4</b>  |
| Excess of income over outgo  | 7.3         | 5.0          | 2.5          | -2.3         | -9.9         |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>121.0</b> | <b>139.1</b> | <b>138.3</b> | <b>105.2</b> |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 36.3         | 33.2         | 26.4         | 16.4         |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.0%</b>  | <b>2.1%</b>  | <b>2.3%</b>  | <b>2.4%</b>  |



**Appendix F: Summary of projections (cont)**

**Table F.3: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the high assumption for growth in pharmaceutical benefit costs (assuming +700 net inward migration)**

|  | 2017        | 2022         | 2027        | 2032        | 2037         |
|--|-------------|--------------|-------------|-------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>110.1</b> | <b>97.0</b> | <b>12.4</b> | <b>0.0</b>   |
| Contributions  | 32.9        | 39.8         | 47.3        | 56.0        | 66.4         |
| Investment return  | 6.3         | 4.1          | 3.4         | 0.0         | 0.0          |
| <b>Total income</b>  | <b>39.2</b> | <b>43.9</b>  | <b>50.7</b> | <b>56.0</b> | <b>66.4</b>  |
| <b>Outgo:</b>  |             |              |             |             |              |
| Medical benefit  | 7.9         | 9.1          | 11.2        | 13.8        | 16.9         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 28.5         | 42.5        | 63.4        | 94.5         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7         | 0.8         | 1.0          |
| Primary Care Activities  | 1.9         | 2.3          | 2.6         | 3.0         | 3.5          |
| Administration costs   | 1.8         | 2.4          | 3.4         | 4.9         | 7.0          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>42.8</b>  | <b>60.4</b> | <b>85.9</b> | <b>122.9</b> |
| Excess of income over outgo  | 7.3         | 1.1          | -9.7        | -29.9       | -56.5        |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>111.2</b> | <b>87.3</b> | <b>0.0</b>  | <b>0.0</b>   |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 31.0         | 18.3        | 0.9         | 0.0          |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.1%</b>  | <b>2.6%</b> | <b>3.1%</b> | <b>3.7%</b>  |



## Appendix F: Summary of projections (cont)

**Table F.4: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the central assumptions (assuming +325 net inward migration)**

|  | 2017        | 2022         | 2027         | 2032        | 2037        |
|--|-------------|--------------|--------------|-------------|-------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>110.3</b> | <b>107.8</b> | <b>59.0</b> | <b>0.0</b>  |
| Contributions  | 32.9        | 38.6         | 44.8         | 51.8        | 59.9        |
| Investment return  | 6.3         | 4.1          | 3.9          | 1.8         | 0.0         |
| <b>Total income</b>  | <b>39.2</b> | <b>42.7</b>  | <b>48.7</b>  | <b>53.6</b> | <b>59.9</b> |
| <b>Outgo:</b>  |             |              |              |             |             |
| Medical benefit  | 7.9         | 8.9          | 10.9         | 13.2        | 16.0        |
| Pharmaceutical benefit (Total)                                       | 19.8        | 26.6         | 36.7         | 50.4        | 69.0        |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.8         | 0.9         |
| Primary Care Activities  | 1.9         | 2.3          | 2.6          | 3.0         | 3.5         |
| Administration costs   | 1.8         | 2.3          | 3.0          | 4.0         | 5.4         |
| <b>Total outgo</b>   | <b>31.9</b> | <b>40.7</b>  | <b>53.9</b>  | <b>71.5</b> | <b>94.8</b> |
| Excess of income over outgo  | 7.3         | 2.0          | -5.2         | -17.8       | -35.0       |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>112.3</b> | <b>102.6</b> | <b>41.1</b> | <b>0.0</b>  |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 32.8         | 23.4         | 8.4         | 0.0         |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.1%</b>  | <b>2.4%</b>  | <b>2.8%</b> | <b>3.2%</b> |



## Appendix F: Summary of projections (cont)

**Table F.5: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the low assumption for growth in pharmaceutical benefit costs (assuming +325 net inward migration)**

|  | 2017        | 2022         | 2027         | 2032         | 2037        |
|--|-------------|--------------|--------------|--------------|-------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>114.1</b> | <b>129.7</b> | <b>124.7</b> | <b>85.6</b> |
| Contributions  | 32.9        | 38.6         | 44.8         | 51.8         | 59.9        |
| Investment return  | 6.3         | 4.3          | 4.8          | 4.5          | 2.9         |
| <b>Total income</b>  | <b>39.2</b> | <b>42.9</b>  | <b>49.6</b>  | <b>56.3</b>  | <b>62.8</b> |
| <b>Outgo:</b>  |             |              |              |              |             |
| Medical benefit  | 7.9         | 8.9          | 10.9         | 13.2         | 16.0        |
| Pharmaceutical benefit (Total)                                       | 19.8        | 24.7         | 31.7         | 40.4         | 51.4        |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.8          | 0.9         |
| Primary Care Activities  | 1.9         | 2.3          | 2.6          | 3.0          | 3.5         |
| Administration costs   | 1.8         | 2.2          | 2.7          | 3.4          | 4.3         |
| <b>Total outgo</b>   | <b>31.9</b> | <b>38.7</b>  | <b>48.5</b>  | <b>60.9</b>  | <b>76.1</b> |
| Excess of income over outgo  | 7.3         | 4.2          | 1.0          | -4.6         | -13.4       |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>118.3</b> | <b>130.7</b> | <b>120.1</b> | <b>72.2</b> |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 36.1         | 32.2         | 24.1         | 12.4        |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.0%</b>  | <b>2.2%</b>  | <b>2.4%</b>  | <b>2.5%</b> |



## Appendix F: Summary of projections (cont)

**Table F.6: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the high assumption for growth in pharmaceutical benefit costs (assuming +325 net inward migration)**

|  | 2017        | 2022         | 2027        | 2032        | 2037         |
|--|-------------|--------------|-------------|-------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>108.2</b> | <b>90.8</b> | <b>0.3</b>  | <b>0.0</b>   |
| Contributions  | 32.9        | 38.6         | 44.8        | 51.8        | 59.9         |
| Investment return  | 6.3         | 4.0          | 3.1         | 0.0         | 0.0          |
| <b>Total income</b>  | <b>39.2</b> | <b>42.6</b>  | <b>47.9</b> | <b>51.8</b> | <b>59.9</b>  |
| <b>Outgo:</b>  |             |              |             |             |              |
| Medical benefit  | 7.9         | 8.9          | 10.9        | 13.2        | 16.0         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 28.0         | 41.3        | 60.8        | 89.3         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7         | 0.8         | 0.9          |
| Primary Care Activities  | 1.9         | 2.3          | 2.6         | 3.0         | 3.5          |
| Administration costs   | 1.8         | 2.4          | 3.3         | 4.7         | 6.6          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>42.2</b>  | <b>58.8</b> | <b>82.4</b> | <b>116.3</b> |
| Excess of income over outgo  | 7.3         | 0.4          | -10.8       | -30.7       | -56.4        |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>108.6</b> | <b>80.0</b> | <b>0.0</b>  | <b>0.0</b>   |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 30.9         | 17.4        | 0.0         | 0.0          |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.2%</b>  | <b>2.6%</b> | <b>3.2%</b> | <b>3.9%</b>  |



## Appendix F: Summary of projections (cont)

**Table F.7: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the central assumptions (assuming +1000 net inward migration)**

|  | 2017        | 2022         | 2027         | 2032        | 2037         |
|--|-------------|--------------|--------------|-------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>113.7</b> | <b>119.6</b> | <b>84.2</b> | <b>0.0</b>   |
| Contributions  | 32.9        | 40.8         | 49.3         | 59.4        | 71.6         |
| Investment return  | 6.3         | 4.2          | 4.4          | 2.8         | 0.0          |
| <b>Total income</b>  | <b>39.2</b> | <b>45.0</b>  | <b>53.6</b>  | <b>62.3</b> | <b>71.6</b>  |
| <b>Outgo:</b>  |             |              |              |             |              |
| Medical benefit  | 7.9         | 9.2          | 11.4         | 14.2        | 17.6         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 27.3         | 38.6         | 54.4        | 76.3         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.9         | 1.1          |
| Primary Care Activities  | 1.9         | 2.3          | 2.6          | 3.0         | 3.5          |
| Administration costs   | 1.8         | 2.4          | 3.2          | 4.4         | 5.9          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>41.7</b>  | <b>56.6</b>  | <b>76.9</b> | <b>104.4</b> |
| Excess of income over outgo  | 7.3         | 3.3          | -2.9         | -14.6       | -32.8        |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>117.0</b> | <b>116.7</b> | <b>69.5</b> | <b>0.0</b>   |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 33.2         | 25.1         | 12.0        | 0.0          |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.0%</b>  | <b>2.3%</b>  | <b>2.6%</b> | <b>2.9%</b>  |



## Appendix F: Summary of projections (cont)

**Table F.8: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the low assumption for growth in pharmaceutical benefit costs (assuming +1000 net inward migration)**

|  | 2017        | 2022         | 2027         | 2032         | 2037         |
|--|-------------|--------------|--------------|--------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>117.6</b> | <b>142.3</b> | <b>153.3</b> | <b>139.1</b> |
| Contributions  | 32.9        | 40.8         | 49.3         | 59.4         | 71.6         |
| Investment return  | 6.3         | 4.4          | 5.3          | 5.6          | 5.0          |
| <b>Total income</b>  | <b>39.2</b> | <b>45.2</b>  | <b>54.6</b>  | <b>65.1</b>  | <b>76.6</b>  |
| <b>Outgo:</b>  |             |              |              |              |              |
| Medical benefit  | 7.9         | 9.2          | 11.4         | 14.2         | 17.6         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 25.4         | 33.3         | 43.6         | 56.8         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.9          | 1.1          |
| Primary Care Activities  | 1.9         | 2.3          | 2.6          | 3.0          | 3.5          |
| Administration costs   | 1.8         | 2.2          | 2.9          | 3.7          | 4.7          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>39.6</b>  | <b>51.0</b>  | <b>65.4</b>  | <b>83.8</b>  |
| Excess of income over outgo  | 7.3         | 5.6          | 3.6          | -0.4         | -7.2         |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>123.1</b> | <b>145.9</b> | <b>153.0</b> | <b>131.9</b> |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 36.4         | 33.9         | 28.1         | 19.4         |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>1.9%</b>  | <b>2.1%</b>  | <b>2.2%</b>  | <b>2.3%</b>  |



## Appendix F: Summary of projections (cont)

**Table F.9: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the high assumption for growth in pharmaceutical benefit costs (assuming +1000 net inward migration)**

|  | 2017        | 2022         | 2027         | 2032        | 2037         |
|--|-------------|--------------|--------------|-------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>111.6</b> | <b>102.0</b> | <b>22.3</b> | <b>0.0</b>   |
| Contributions  | 32.9        | 40.8         | 49.3         | 59.4        | 71.6         |
| Investment return  | 6.3         | 4.1          | 3.6          | 0.3         | 0.0          |
| <b>Total income</b>  | <b>39.2</b> | <b>44.9</b>  | <b>52.9</b>  | <b>59.7</b> | <b>71.6</b>  |
| <b>Outgo:</b>  |             |              |              |             |              |
| Medical benefit  | 7.9         | 9.2          | 11.4         | 14.2        | 17.6         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 28.8         | 43.5         | 65.6        | 98.7         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.9         | 1.1          |
| Primary Care Activities  | 1.9         | 2.3          | 2.6          | 3.0         | 3.5          |
| Administration costs   | 1.8         | 2.4          | 3.5          | 5.0         | 7.3          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>43.2</b>  | <b>61.7</b>  | <b>88.7</b> | <b>128.2</b> |
| Excess of income over outgo  | 7.3         | 1.7          | -8.8         | -29.0       | -56.5        |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>113.3</b> | <b>93.2</b>  | <b>0.0</b>  | <b>0.0</b>   |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 31.2         | 19.0         | 1.5         | 0.0          |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.1%</b>  | <b>2.5%</b>  | <b>3.0%</b> | <b>3.6%</b>  |



## Appendix F: Summary of projections (cont)

**Table F.10: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the high Primary Care activity increase assumption (assuming +700 net inward migration and central growth in pharmaceutical benefit costs)**

|  | 2017        | 2022         | 2027         | 2032        | 2037         |
|--|-------------|--------------|--------------|-------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>111.9</b> | <b>112.3</b> | <b>66.6</b> | <b>0.0</b>   |
| Contributions  | 32.9        | 39.8         | 47.3         | 56.0        | 66.4         |
| Investment return  | 6.3         | 4.2          | 4.1          | 2.1         | 0.0          |
| <b>Total income</b>  | <b>39.2</b> | <b>44.0</b>  | <b>51.3</b>  | <b>58.2</b> | <b>66.4</b>  |
| <b>Outgo:</b>  |             |              |              |             |              |
| Medical benefit  | 7.9         | 9.1          | 11.2         | 13.8        | 16.9         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 27.0         | 37.8         | 52.6        | 73.1         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.8         | 1.0          |
| Primary Care Activities  | 1.9         | 2.4          | 3.1          | 4.0         | 5.1          |
| Administration costs   | 1.8         | 2.3          | 3.2          | 4.3         | 5.8          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>41.4</b>  | <b>55.9</b>  | <b>75.5</b> | <b>101.8</b> |
| Excess of income over outgo  | 7.3         | 2.5          | -4.6         | -17.3       | -35.4        |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>114.5</b> | <b>107.7</b> | <b>49.3</b> | <b>0.0</b>   |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 32.8         | 23.6         | 9.2         | 0.0          |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.1%</b>  | <b>2.4%</b>  | <b>2.7%</b> | <b>3.1%</b>  |



## Appendix F: Summary of projections (cont)

**Table F.11: Summary of income, outgo and the projected Fund balance in the Health Insurance Fund in cash terms based on the very high Primary Care activity increase assumption (assuming +700 net inward migration and central growth in pharmaceutical benefit costs)**

|  | 2017        | 2022         | 2027         | 2032        | 2037         |
|--|-------------|--------------|--------------|-------------|--------------|
| <b>Fund at start of year</b>   | <b>86.3</b> | <b>111.5</b> | <b>108.9</b> | <b>55.3</b> | <b>0.0</b>   |
| Contributions  | 32.9        | 39.8         | 47.3         | 56.0        | 66.4         |
| Investment return  | 6.3         | 4.1          | 3.9          | 1.7         | 0.0          |
| <b>Total income</b>  | <b>39.2</b> | <b>43.9</b>  | <b>51.2</b>  | <b>57.7</b> | <b>66.4</b>  |
| <b>Outgo:</b>  |             |              |              |             |              |
| Medical benefit  | 7.9         | 9.1          | 11.2         | 13.8        | 16.9         |
| Pharmaceutical benefit (Total)                                       | 19.8        | 27.0         | 37.8         | 52.6        | 73.1         |
| Gluten-free vouchers   | 0.5         | 0.6          | 0.7          | 0.8         | 1.0          |
| Primary Care Activities  | 1.9         | 2.7          | 4.0          | 5.9         | 8.6          |
| Administration costs   | 1.8         | 2.4          | 3.2          | 4.4         | 6.0          |
| <b>Total outgo</b>   | <b>31.9</b> | <b>41.7</b>  | <b>56.9</b>  | <b>77.5</b> | <b>105.6</b> |
| Excess of income over outgo  | 7.3         | 2.2          | -5.7         | -19.8       | -39.2        |
| <b>Fund at end of year</b>   | <b>93.6</b> | <b>113.7</b> | <b>103.2</b> | <b>35.5</b> | <b>0.0</b>   |
| Mean fund expressed as months of outgo excluding transfers from Fund | 33.8        | 32.4         | 22.4         | 7.0         | 0.0          |
| <b>Break-even contribution rate</b>                                  | <b>1.9%</b> | <b>2.1%</b>  | <b>2.4%</b>  | <b>2.8%</b> | <b>3.2%</b>  |