

Cook Islands National Superannuation Fund

Actuarial Valuation



Valuation Date: 31 December 2022

Date Report: April 2024

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Executive Summary

This is an actuarial investigation report as at 31 December 2022 on the Cook Islands National Superannuation Fund (Fund), in line with the requirement to perform a full investigation at least once every three years.

We are finalising this 2022 review this year because of the lengthy process required to gather and analyse Cook Islands demographic data to fulfil the request to use Cook Islands mortality to perform the pensioner valuation and to calculate pension rates.

This report is addressed to the Board of the National Superannuation Fund and the Trustee of the Fund. This is the fourth time that Aon has performed a full review of this Fund. The previous full review was as at 31 December 2019.

There were 13,226 active members and 260 pensioners of the Fund as at 31 December 2022.

The market value of the Fund's assets used for the valuation was \$206,036,123 (before liabilities).

The economic assumptions used were:

-	Future investment return	5.25% p.a.
-	Allocated rate to members accounts	4.75% p.a.
-	Discount rate for valuing pensions	5.25% p.a.

The demographic assumptions used were based on the experience of Cook Islands residents over the period from 2011 to 2021, as discussed in this report.

Valuation results:

Value of Accrued Benefits

Members' Accounts plus Reserves	\$192,433,142
Pensions' Liabilities	\$12,883,239
Total Accrued Benefits (A)	\$205,316,380
Value of Assets Available for Benefits (B)	\$205,765,070
Surplus (B - A)	\$448,690

The above result indicates that the Fund is in surplus. The Accrued Benefits include a Pension Reserve of \$224,599 and a General Reserve of \$1,026,593. Provided the Fund's future experience is broadly consistent with the assumptions set out in Section 4 of this report and the Trustee continues to manage the Declared Rate (the interest rate credited to accounts) then:

- No specific additional funding in respect of the pensioners is required, and

- the Fund will continue to have an excess of Assets over Accrued Benefits for the following 12 month period.

Based on the assumptions set out in Section 4 of this report we recommend the following Pension Conversion Rates:

• Age	• \$ Pension rate for each \$1,000 of lump sum
55	61
56	61
57	61
58	62
59	62
60	63
61	64
62	64
63	65
64	66
65	66
66	67
67	68
68	69
69	70
70	71
71	72
72	74
73	75
74	76
75	78

- I recommend that the Trustee continue to maintain the current Declared Rate policy, which includes the provision that pensions' liabilities should be calculated at the date that the Declared Rate is being calculated. If the sum of the Pension and Pension Reserve Accounts are less than the value of the pensions' liabilities at that date, the Trustee transfer funds into the Pension Reserve Account from the Reserve Account and/or decrease the Declared Rates as advised by the Actuary.

1. Introduction

The Fund

- The name of the Fund is the Cook Islands National Superannuation Fund.
- The Fund had its genesis in the Cook Islands National Superannuation Act (Act) which was passed on 24 November 2000. The Act required the Board of the National Superannuation Fund to prepare a Trust Deed to establish the Fund.
- A Trust Deed, with the Public Trust appointed as the first Trustee of the Fund (Trustee), was subsequently executed on 10 September 2001. The Trust Deed notes that the Fund is intended to be a national superannuation scheme such that all employees in the Cook Islands will contribute a part of their salary with an equal contribution from their employer. Fund membership includes employees of Government, state-owned enterprises and companies in the private sector.

Addressee

- This report is addressed to the Board of the National Superannuation Fund and to the Trustee of the Fund.

Purpose

- This actuarial review of the Fund was done at the request of the Board of the National Superannuation Fund and the Trustee of the Fund. This review was conducted as at 31 December 2022.

Statement Regarding Conflicts of Interest

- The actuary responsible for the preparation of this report is Mr. Simon Ferry who is a Fellow of the New Zealand Society of Actuaries.
- I am signing this report on behalf of Aon New Zealand (Aon).

Trust Deed, Benefits and Contributions

- The Fund is governed by a trust deed dated 9 September 2001 (as amended). A summary of the provisions relating to benefits and contributions is given in Appendix A.

Previous Actuarial Investigation

- We prepared the previous valuation report as at 31 December 2019. That examination commented on the Declared Rate policy and the calculated pension conversion rates for members of the Fund.

Management, Operation and Documentation of the Fund

- I have not, in the course of this investigation or at any other time, become aware of any problems relating to the prudential management of the Fund's investments or any problems of the Fund in relation to any act or regulation and I am not aware of any problem that may affect the financial position of the Fund.

Certification

- This report was prepared using the Professional Standard Number 40 – Actuarial Reporting for Superannuation Schemes – issued by the New Zealand Society of Actuaries, and also complies with Professional Standard No. 90 General Actuarial Practice, issued by the New Zealand Society of Actuaries. The valuation method and the financial, economic and demographic assumptions have been determined in accordance with the professional judgement of the actuary preparing this report.



Simon Ferry

Fellow of the New Zealand Society of Actuaries

3 April 2024

2. Summary of Results and Recommendations

Valuation Results

- The results of my review as at 31 December 2022 are shown below. To value pensioners' mortality I have used mortality tables that I have derived from Cook Islands mortality and population data between 2011 and 2021, as provided by the Fund. This was at the request of the Fund. The previous actuarial investigation used mortality rates from the 2010-12 New Zealand Life Tables for Māori Population. Furthermore, we have increased the rate to value pensions from 4.5 percent to 5.25 percent. The overall effect was to increase the liability by approximately \$696,000.
- Under the valuation assumptions, the Fund has an excess of assets over liabilities.

Value of Accrued Benefits	2022
Members' Accounts plus Reserves	\$193,433,142
Pensioners' Liabilities	<u>\$12,883,239</u>
Total Accrued Benefits (A)	\$205,316,380
Value of Assets (B)	<u>\$205,765,070</u>
Surplus (B - A)	\$448,690

- I calculated the Pensioners' Liabilities of \$12,883,239 as the present value of the expected future pension payments to existing pensioners and their spouses (if applicable) using the Data (Section 3) and the Valuation Process and Assumptions (Section 4).
- The Accrued Benefits include a Pension Reserve of \$224,599 and a General Reserve of \$1,026,593.
- Provided the Fund's future experience is broadly consistent with the assumptions set out in Section 4 of this report and the Trustee continues to manage the Declared Rate (the interest rate credited to members' accounts) so that the sum of the Pension, Reserve and Pension Reserve Accounts exceed the value of the pensioner liabilities then:

no specific, additional funding is required in respect of the pensioners, and

the Fund will continue to have an excess of assets over liabilities over the following 12 months period.

- The margin of the Pension Accounts plus the Pension Reserve Account over the pensioner liabilities is 100 percent. I do not anticipate any additional funding requirements other than the investment income allocation policy in use over the following 12 months period.

Funded Status

- The funding level of the Fund as at 31 December 2022 is approximately 100 percent.
- The interest rate adopted for discounting expected pension payments has a prudential margin to allow for uncertainty. A reduction in the discount rate by 0.5 percent would increase the pensioner liability by \$629,000, representing an impact on the following year's Declared Rate of about 0.3 percent of the accounts' balances.

Pension Conversion Rates

- Based on the Valuation Process and Assumptions set out in Section 4 of this report we recommend the Trustee to adopt the following Pension Conversion Rates for new pensioners (no change for current pensioners):

	Age	\$ Pension rate for each \$1,000 of lump sum		
		Recommended	Current	Variance
	55	61	57	4
	56	61	58	3
	57	61	59	2
	58	62	60	2
	59	62	60	2
Normal Retirement Age:	60	63	61	2
	61	64	62	2
	62	64	63	1
	63	65	64	1
	64	66	66	0
	65	66	67	-1
	66	67	68	-1
	67	68	69	-1
	68	69	71	-2
	69	70	72	-2
	70	71	74	-3
	71	72	76	-4
	72	74	78	-4
	73	75	79	-4
	74	76	82	-6
	75	78	84	-6

- The increase in the discount interest rate to value pensions has resulted in a decrease in the cost of each dollar of pension up to age 63, resulting in the increase in the pension that can be paid out of each \$1,000 of lump sum up to that age.
- However, the change in the mortality assumption from the old Maori mortality rates to the more up-to-date Cook Islands mortality experience has resulted in an increase in the cost of each dollar of pension from age 65 onwards, resulting in the decrease in the pension that can be paid out of each \$1,000 of lump sum from that age (resulting in the increase in pension liability as set out in the first paragraph of Section 2 above).
- The Normal Retirement Age is 60. However, a member can retire at any time from age 55 in case of ill health or redundancy.

3. Data for the Actuarial Review

Source of Data

- Data for this actuarial review was provided by the administrator of the Fund, Link Market Services.
- The data used for this actuarial review comprise copies of the:
 - audited accounts for the years ending 31 December 2019, 2020, 2021 and 2022,
 - Trust Deed,
 - Trustee Annual Reports for the years ending 31 December 2019, 2020, 2021 and 2022,
 - Members', Employers', Pension, Reserve and Pension Reserve Accounts balances as at 31 December 2022, and
 we received the following data in respect of each pensioner:
 - name and sex,
 - date of birth, and
 - annual pension.

Adequacy of the Data

- The membership and financial data supplied was sufficient for the purposes of the investigation, and in my opinion is sufficient and reliable.

Change in Membership

- The change in membership numbers over the inter-valuation period is shown below.

	Pensioners	Other Members	Total
At 31 December 2019	278	12,008	12,286
Entrants	101	1,857	1,958
Exits			
- retirements	110	254	364
- resignation/redundancies	-	280	280
- deaths / disablements	9	99	108

Members at 31 December 2022	260	13,232	13,492
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Data Summary

- The membership data is summarised below:

Pensioners

Number	260
Average age	66.6
Total pension payments	\$699,732 p.a.

Active Members

Number	13,232
Total account balances	\$188,218,764

4. Valuation Process and Assumptions

Funding Objectives and Method

- The funding objective is to secure pensioners' and other members' benefits arising from past membership. For pensioners this means ensuring that the sum of the Pension, Reserve and Pension Reserve Accounts' balances is sufficient to cover future benefits, after allowing for future investment income.
- As sufficient assets have been accumulated in the Pension, Reserve and Pension Reserve Account to secure the benefits in respect of the pensioners, then the Fund will remain fully funded and no future extra funding in respect of the pensioners will be necessary.

Actuarial Assumptions - Liabilities

- The valuation assumptions used are as follows:
 - determination of the Declared Rate,
 - investment return, and
 - rate of mortality of pensioners.

Determination of the Declared Rate

- I have assumed the Trustee will continue to manage the Declared Rate (the interest rate credited to Member, Employer, Voluntary, Pension, Reserve and Pension Reserve Accounts) so that the Pension Accounts and the Pension Reserve Account balances are maintained at a level greater than the value of the pensioners' liabilities.
- I have assumed that of the 5.25 percent future investment return to be earned by the Pension Accounts, 0.5 percent is transferred to the Pension Reserve Account and the remaining 4.00 percent is credited to the Pension Accounts.

Investment Return

- I have assumed the Fund will continue to be exempt from tax.
- On the basis of the Trustee's benchmark asset allocation for the Balanced Fund and the returns I currently anticipate for each sector in the medium to long term, I expect the Fund to earn, on average, 5.25 percent p.a.
- The investment return is assumed to be net of expenses, which are currently assumed to be covered. A provision of 1.0 percent p.a. for administration and investment expenses has been allowed for when setting the investment return assumption. The actual expense rate during the 12 month period to 31 December 2022 was 1.0 percent p.a.

- The investment return I have assumed for the valuation of pensioner liabilities is therefore 5.25 percent p.a., made up as follows.

Best estimate of long term investment return	6.35% pa
Allowance for expenses	1.00% pa
Prudential margin	0.10% pa
	<hr/>
Investment return used	5.25% pa

- This return is 0.75 percent lower than the return used for the previous review. This change has increased the pensioner liability by approximately \$696,000.

Actuarial Assumptions - Assets

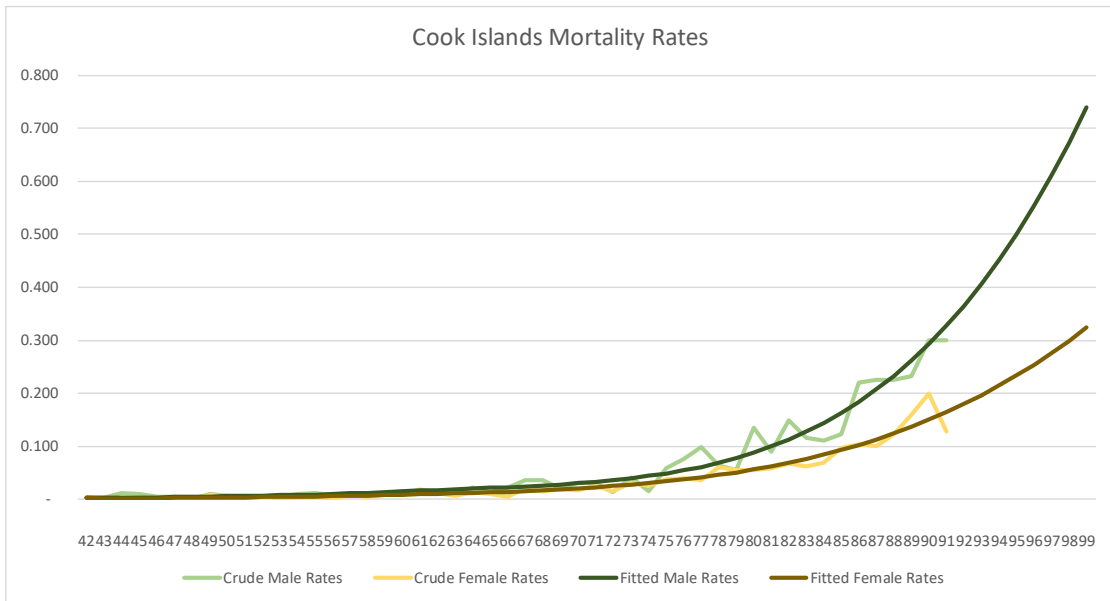
- The assets are valued at net market value at 31 December 2022 as disclosed in the audited financial statements. The audited accounts indicate that there are no contingent liabilities and none have been allowed for. I am not aware of any material risks posed by the assets apart from normal investment risks associated with the various asset classes invested in.

Pensioners' Assumptions

- I have used mortality rates that I have derived from Cook Islands mortality and population data between 2011 and 2021, as provided by the Fund. This was at the request of the Fund. The previous actuarial investigation used mortality rates from the 2010-12 New Zealand Life Tables for Māori Population.
- No pension increases have been granted since the Fund commenced and I have not made any allowance for future pension increases.
- I have assumed that all pensioners, who were members of the Fund, are married with a spouse who is 10 years younger who will receive a pension for life upon the death of the pensioner.
- Mortality rates for the Cook Islands were derived as follows:
- We estimated the number of lives exposed to the risk of death at each age and for each gender, over the period from 2011 to 2020, using Cook Islands census data for 2011, 2016 and 2021
- We then divided the number of deaths provided from 2011 to 2020, at each age and gender, by the exposed to risk number calculated as set out above, to obtain crude rates of death by age and gender
- Smoothing was then applied using various methods (mainly applying a 5 year geometric moving average and then fitting a 4th degree polynomial, with no splines required for the ages considered). Projections were required beyond age 91 where the number of actual Cook Islands residents were too minimal for credible study

- Overall, however, the volume of data enabled the derivation of highly credible rates (92% Bayesian credibility) from the Cook Islands demographic data
- We used the 2021 New Zealand Māori Population mortality according to the 2017-19 New Zealand Life Tables as a base population for the remaining 8% of the Bayesian credibility, as well as to test the mortality projections beyond age 91.

A graph of these mortality rates for older ages is set out below:



Appendix A – Summary of Benefits

A.1 Introduction

- The Fund operates in the manner of a defined contribution superannuation scheme with member and employer contributions being held separately. The Fund provides either lump sum or pension benefits on retirement. Material provisions relating to benefits applicable to members and operation of the Fund are summarised briefly below.

A.2 Operation of the Fund

- Each year the Fund receives member and employer contributions, pays benefits and earns investment income on its assets. Each year the Trustee will determine how much of the investment income is to be credited to the Members' (including Voluntary), Pensioners', Reserve and Pension Reserve Accounts. Some of the investment income may be directed to the Reserve Account so that the Fund can smooth investment fluctuations and some to the Pension Reserve Account so that the any loss resulting from future longer than expected pensioners' life expectancy can be funded in advance.

A.3 Accounts

- The Trust Deed provides for members and for pensioners to have their individual accounts and for the Fund to have a Reserve account and a Pension Reserve account. The manner in which monies can pass to and from the Reserve account and the Pension Reserve accounts is set out in concept in the Trust Deed.

A.4 Interest Rate Credited to Accounts

- The interest rate (which may be negative) applied to the Members', Pensioners' Reserve and Pension reserve accounts is set by the Trustee each year having regard to the net investment return (or returns) earned on the underlying assets and other aspects that are addressed in the Fund's audited accounts. The rates credited will vary from year to year as the investment performance of the Fund's assets and operating expenses vary.

A.5 Retirement Benefit

- On retirement and subject to the provisions of the Trust Deed, the member accounts are transferred to a pension account which is used to pay a pension, determined by reference to the account balance and the rate of pension conversion that the Trustee applies at the time of retirement of the member.
- The Normal Retirement Age is 60. However, a member can retire at any time from age 55 in case of ill health or redundancy, or they can receive an early retirement pension benefit if they are totally and permanently disabled after this age.

- Subject to the balances of the Members' Accounts and the Trust Deed provisions, the member may take this amount as a cash payment, or choose to receive a pension, or a combination of the two.
- Upon the death of a pensioner with no spouse, any funds left in the pension account are paid to the estate of the member. Upon the death of a pensioner with a spouse, the spouse will continue to receive a pension payable from the pension account, generally at the same level as was being paid to the pensioner (subject to conditions). After the death of the pensioner and spouse, any funds left in the pension account are paid to the estate of the last of them to die. The pension that is payable may be altered by the Trustee, either up or down at such times as the Trustee shall decide.
- As the pensions payable to individual pensioners and surviving spouses are made from the balances in the related pension accounts, it is likely the Pension Reserve and the Reserve accounts will be used for funding any shortfall due to longer than expected life expectancy of the pensioners.

A.6 Other Benefits

- On death, the member and employer account balances, collectively known as the Compulsory Account, are paid to the member or the member's personal representative, or subject to conditions, set aside for the purposes of providing a spousal pension for life.
- If a Member becomes totally and permanently disabled before the age of 55, either through injury or illness, they are entitled to a benefit determined on age and the applicable percentage of the Compulsory Account applying at that age.
- Members who permanently depart from the Cook Islands to another jurisdiction may elect to transfer the transfer value of their contributions to an approved scheme in this jurisdiction (subject to conditions). Such a member can elect to receive this transfer value in cash if this member was a contract worker immediately prior to departing the Cook Islands or if the member moves to a jurisdiction in which there is no approved scheme in the five years following their departure.

Contact information

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About Aon

Aon is the global leader in human resource consulting and outsourcing solutions. Our services focus on helping organisations mitigate risk in their workforce and realise the untapped potential of their employees. We also help individuals maximise their wealth to enable people to live the life they want.

In New Zealand, our team of experts partner with your organisation to develop and deliver people strategies that achieve positive business outcomes in the areas of: actuarial and investment consulting; talent, leadership and employee engagement; remuneration and incentives; total rewards; health and benefits in NZ and globally.

With more than 50,000 professionals in 120 countries and sovereignties, Aon makes the world a better place to work for clients and their employees.

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