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B E L I Z E

Social Security Board

Actuarial Performance Analysis of the Social Security Scheme (at 31 December 2023)

19 June 2024
Belmopan, Belize

César Nicolás Penson No. 116, Edificio "TPA" • Apartado Postal No. 20021 • Santo Domingo, D. N.
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19 June 2024

Board of Directors
Social Security Board
Belmopan, Belize

In accordance with the provisions of Section 45 of the Social Security Act, an actuarial performance assessment of the scheme was carried out as of 31 December 2023, as a complement to the triennial valuation carried out every three years, to assess the performance of the benefit branches and the adequacy of the statutory contributions to support benefits. The review was based on the legal provisions in force, including amendments to the financing bases. The analysis also comprises an assessment of the Investment Portfolio, the National Health Insurance Program, the Self-Employed Scheme, and the Non-Contributory Pension Scheme.

A summary of the main findings and recommendations is set out in Chapter I of the report, while Chapter II describes the legal bases and the consolidated financial operations. Chapters III, IV, and V present the actuarial analysis of the short-term benefits branch, the employment injury branch, and the long-term branch. Annexes will deal with the Investment Performance, as required by the Third Schedule of the Act, the performance of the Non-Contributory Pensions, and the Self-Employed Schemes, and a summary of the benefit provisions.

Acknowledgments

The actuary would like to express his appreciation to the Board for the facilities provided to the actuary during his assignment. Special thanks are due to the Chairman, Mrs. Nigeli Sosa, CEO Mrs. Deborah Ruiz, and the staff of the Policy, Research and Actuarial Services and Corporate Services, for the technical guidance provided to the actuary during the valuation.

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Attestation

The analysis was carried out according to applicable actuarial cost methods and our interpretation of the provisions in force. Further, the valuation was carried out utilizing actuarial and financial bases and assumptions, which, in our opinion, are reasonable and offer an adequate estimate of the anticipated experience.

Yours sincerely,

For: Consultores Actuariales, SRL

Hernando Pérez Montás
Actuary

CONSULTORES ACTUARIALES, S.R.L. * Planes de Pensión • Socio-económicos *

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I

CONCLUSIONS AND RECOMMENDATIONS

1. General Assessment (Chapter II)

The analysis shows that the actuarial performance of the Social Security Board (SSB) exceeded expectations in 2023, yielding an improvement in the fund ratios of the ST and the EI branches, and strengthening the actuarial situation of the LT branch. The increase in contributions, a reflection also of improving management performance, contributed also reducing the actuarial cost of administrative expenditure to the standard benchmark, for the first time since the inception of the scheme, according to unaudited financial data.

As of 2024, the secular increase in contributions should return to its normal growth pattern, due to the phase-out of the adjustments to the ceiling and the contribution rate, whereas the dynamic of benefit expenditure would proceed at a higher rate, due to the maturity of the pension scheme and also to the affordability of maximum pensions based on a ceiling of $520 rather than $320 per week before the amendments. **Therefore, the gap between contributions and expenditure will decrease gradually, with a capitalization of the scheme based on a decreasing share of investment income, until the Period of Equilibrium (PE) is reached at the end of the present decade.**

2. Short-Term Branch (Chapter III)

A substantial increase in contributions and stable expenditure yielded a substantial $6.2 million surplus, increasing by 26% the contingency reserve to $29.3 million, or 2.83 times, the minimum level of reserves stipulated in Section 17 (1) of the Financial Regulations. **Therefore, at 31 December 2023, the ST branch showed a robust actuarial situation, with medium-term projections showing that the 1.9% rate of contribution allocated to the ST branch plus the share of investment income on the reserves, guarantee the long-term actuarial solvency of the ST branch.** The incidence of sickness allowances was lower than expected, whereas the incidence of maternity benefits coincided with the actuarial estimate.

3. Employment Injury Branch (Chapter IV)

The analysis shows that a positive financial performance contributed to another increase in the actuarial reserves, despite a higher incidence of short-term benefits and funeral grants.

The EI actuarial reserve of $126.7 million at 31 December 2023 is equivalent to 28.4 times the minimum amount stipulated in Section 17 (2) of the Financial Regulations. **However, from 2024, the capitalization of reserves would decrease, and once the updated actuarial factors (APV) for the assessments of Disbursement and Death benefit are finally approved, the surplus reserves of the EI branch would start to decline or remain stable. The actuarial assessment also shows that the 0.9% of insurable earnings allocated to the EI branch, plus the investment income on the substantial reserve, guarantee the long-term solvency of the EI branch.**

4. Long-Term Branch (Chapter V)

The 7.2% rate of insurable earnings allocated to the branch, which has increased substantially over the preceding four years, plus a positive financial performance, yielded $118 million in contribution income in 2023, a 14% increase, while benefit expenditure increased by only 11%, yielding a $31.4 million operational surplus and an increase in benefit reserves to $512 million. **Updated projections confirm a Period of Equilibrium when total expenditure would exceed total income close to the end of the present decade when an adjustment to the contribution rate would be required to avoid a decline of the reserves.**

The analysis shows that the capitalization of reserves as of 2024 would depend basically on investment income, as the rate of benefit expenditure would exceed the rate of contributions, as shown in the actuarial projections. **Therefore, the Period of Equilibrium would be rather sensitive to the investment performance, which requires a material reduction of the cash items on the balance sheet.**

5. Administrative Expenditure (Chapter II- Section 7)

As the ceiling and the rates of contributions have been updated in the preceding three years, raising the level of insurable earnings and contributions, **the relative cost of administrative expenditure has declined steadily reaching 1.50% of insurable earnings in 2023, equal to the actuarial benchmark (15% of contributions).** Administrative expenses are not comparable with other CARICOM schemes, as the Belize scheme operates several Branch Offices increasing the administrative tasks. Administrative expenditure is distributed among the three benefit branches by a weighted share of the sum of contribution income and benefit of the branch as compared to the Fund as a whole.

6. Investments Performance (Chapter II- Section 8)

The nominal rate of return on assets (ROA) rose to 3.80% in 2023 (3.33% in 2022), and the inflation-adjusted return was neutral, due to the incidence of high inflation rates arising from external factors. However, inflation rates are expected to decline from 2024, restoring the positive real rate of return towards the 3% actuarial benchmark.

The execution of an investment plan to maximize income, without undue risk is a key task of the Board, taking into consideration the advancing maturity of the scheme. The improved cash flow due to the legal amendments allows a strategic asset allocation from 2024 on "development projects", to achieve a more adequate balance of a portfolio concentrated on financial issues and utilities.

The diversification of the investment portfolio should be preceded by: i) a sound risk/reward assessment, ii) a favorable anticipated risk-adjusted return, and iii) a careful evaluation of the collateral funds, to ensure full recovery of the unamortized portion of the investment in case of default.

7. Self-Employed Scheme (Annex A)

Parametric amendments to the Self-Employed Scheme as a top priority. The actuary also estimates that structural adjustments might entail more complex procedures, including the issue of acquired rights. Pending amendments are as follows: i) Substitution of 266 wage bands by a set of six wage-band, as shown in Annex A, Table 9; ii) Adjustment of the contributions rates correlated to the increase of the rate of contributions in the general scheme with a gap that rose from 1% to 3%; and iii) apply the same retirement provisions for retirements pensions as in the general scheme (60/65 years).

The analysis shows that the self-employed scheme is indirectly subsidized by the general scheme, due to faulty design, including the "voluntary" feature of the scheme, which is conducive to adverse selection. The self-employed can qualify for a minimum pension with a low number of contributions, negatively impacting the actuarial situation of the SSB, by generating a transfer of funds from employed persons to the self-employed. The matrix of legal amendments should address these issues, including the exclusion of "housewives", requiring a higher number of self-employed contributions to qualify for pensions, and establishing "compliance" standards once they become voluntarily insured. Specific details are shown in Annex A, showing that the number of pensions in force to the self-employed is equivalent to almost one-half the number of active contributors, four times the ratio in the general scheme.

8. Non-Contributory Pension Scheme (Annex B)

The actuarial cost of the NCP has been declining steadily, due to the joint incidence of mortality of pensioners and more stringent eligibility requirements imposed by the NCP Committee. The **analysis shows a steady reduction of actuarial costs of 0.08% of insurable earnings in 2022 (0.11% in 2021) and a further reduction of 0.07% of insurable earnings in 2023,** yielding non-material amounts. Specific details are shown in Annex B, in the pending amendments to the eligibility regulations.

9. Conversion of a Static into a Dynamic Scheme

Industrialized economies usually follow a dynamic approach characterized by "automatic triggers", with a frequency of 1-3 years, not only to the ceiling but also to pensions in force, the former related to increases to the level of wages, and the latter related to general inflation, usually designated as COLA (cost-of-living-adjustments). Developing countries have adopted "ad-hoc" adjustments with a longer frequency of 3 to 5 years; but as the schemes mature, the frequency of adjustments would become more frequent. These two variables (ceiling/pension adjustments) **should be complemented by adjustments to the rate of contributions, based on actuarial recommendations. The adjustment to the ceiling and pensions in payment are aimed at ensuring the adequacy of the scheme, by providing benefits closely linked to actual earnings and the cost of living. The rate of contributions is intended to ensure the financial sustainability of the scheme.** A hypothetical illustration of coordinated automatic triggers is shown below:

Hypothetical Semi-Automatic Adjustments

A. Key Parametric Adjustments

Amendments	
Contribution Rate	Increase by 2% in **2028/30**, or jointly with a COLA increase.
Ceiling	Increase from $520 to $800.
Pension Adjustment	COLA, with specific factors, as shown below: • General Scheme: COLA (Cost Of Living Adjustment). • NCP Scheme: Ceiling of 60% of the minimum pension of general scheme. • SE Scheme: Update ceiling.

B. Additional Parametric Adjustments (2025/26)

1. Qualifying Conditions

A minimum of 20 years (1000 weekly contributions) would be required for new entrants and insured persons less than 45 years of age, adding 100 weekly contributions per year for the next five years.

2. Retirement Age

The option to retire at 60 years of age would be phased out by an increase of **one year per year**, as from 2026, with a minimum retirement age of 65 years in 5 years.

3. Pension Enhancement for Deferred Retirement

The maximum 60% pension would be increased by 1.75% per year for each year of service after 65 years, with a maximum of 70% from age 70.

4. Invalidity Benefits

Updated provision is also applicable to invalidity benefits, for example, with a minimum of 10 years (500 weekly contributions) to qualify for a life pension rather than only 5 years. Not applicable to EI pensions, as well as adjustments to the provision of invalidity grants.

5. Self-Employed

Updated provisions are also required for self-employed pensions, eliminating the 266 wage band and EI pensions; setting a contribution rate lower by 1% than the rate applicable on the general scheme, and maintaining the present provisions on insurable earnings (to avoid "adverse selection") until a set of comprehensive amendments is applied to the self-employed scheme.

6. Wage-Bands' Replacement and Linear Pension Formula (2027/28)

Elimination of the first two wage bands would be phased out as of 2024. A linear percent formula would replace the absolute wage bands. Belize is probably the only regional scheme with contributions based on wage bands. The actual provisions provide for anomalous accrual rates per year of service, as shown below. The linear formulae would provide a 1.75% accrual rate, yielding a ceiling of 60% average pension with 35 years of service, the same as at present, and a higher maximum pension of 70% with 40 years of service.

II

LEGAL BASES AND CONSOLIDATED FINANCIAL OPERATIONS

1. Legal Bases, Coverage, and Benefit Provisions

The legal bases of the Social Security scheme are set out in the Social Security Act (1980) and the regulations issued thereunder. The scheme commenced operations on 1 June 1981 and, except for marginal amendments to the benefit regulations, the level of benefits and contributions were not updated until 1 January 2001, when a comprehensive improvement in benefit provisions took place. Also, a Third Schedule regulating the Investment Framework, as recommended by the Actuary, was annexed to the Act in 2007. A significant set of legal amendments were finally approved between 2019/ 2022, as shown below, including step increases to the ceiling and the rate of contributions, and a reallocation of contribution income among the benefit branches.

The scheme provides a basic level of social protection, and, after a full career, the scheme is designed to provide a maximum pension of 60% of pensionable salary, which in practice should yield average replacement ratios of 50% to 55% of the last salary, due to salary progression and density of work before retirement.

The scheme covers all employed persons from 14 to 64 years of age, with specified exceptions such as workers working less than 8 hours per week and persons in the military. Employed persons 65 years and over are covered only against employment injury. A summary of the benefit provisions is shown in Appendix A.

2. Summary of Legal Amendments

As of 1 January 2021, the contributions among the benefit branches were redistributed, increasing the share of contributions to the Long-term branch and reducing the share of the Short-term branch and, mainly, the EI branch. As of 4 April 2022, the pending adjustment to the contribution rate and the ceiling was approved, as shown in Table 4. Therefore, the present distribution is shown in the second column.

Table 1
Allocations by Branch as a percent of Contributions

Branch	2009/2018	2023+
Short-Term	19.25	19.00
Employment Injury	24.50	9.00
Long-Term	56.25	72.00
Total	100%	100%

Table 2
Step-Increase of the Ceiling on Insurable Earnings (per week)

Up to June 2019	$320
June / December 2019	$440
January / March 2022	$480
As from April 2022	$520

Therefore, in accordance with actuarial recommendations, the share of contributions to the long-term branch has been increased gradually, as shown in Table 3, while the allocation to the EI branch has been reduced, based on the analysis of emerging actuarial costs, in order to contain the accumulation of excess reserves.

Table 3
Actuarial Rate of Contributions by Branch
(Rate as a percent of Insurable Earnings)

Branch	2021	2022	2023+
Short-Term	1.710	1.853	1.900
Employment Injury	0.810	0.877	0.900
Long-Term	6.480	7.020	7.200
Total	9.00%	9.75%	10.00%

3. Skewed Contribution Bases and Wage Brands

Financing by employers and employees is based on wage bands rather than as a percentage of insurable earnings with a variable distribution, from 8.13%/ 1.87% on the first wage band to 5.50%/ 4.50% on the last wage band, by employer/ employee respectively. **These operational procedures should be replaced by a uniform system based on insurable earnings.**

4. Operational Branches

Three benefit branches are presently in operation: a Short-Term branch comprising sickness and maternity benefits; a Long-Term branch comprising retirement, invalidity, and survivors' benefits, and an Employment Injury branch comprising medical care, temporary employment injury benefits, and grants or pensions in the event of permanent disability or death due to employment injury. The Long-Term branch also comprises two sub-branches: a Non-Contributory pension scheme and a Self-Employed voluntary Scheme.

If the insured person is over 65 years, the employer pays $2.60 per week for employment injury benefits, **a rate that should be adjusted due to the high cost of medical treatment for elderly insured persons.** Investment income is allocated to each branch in proportion to the reserves of each branch at the beginning of the year, whereas other income is distributed equally among the three benefit branches.

New low-income workers are still eligible for a minimum pension of $47 per week and pay a minimum contribution of $0.83 per week, an anomaly that should be corrected, establishing a minimum of $49.75. **The actuarial recommendation is to phase out the first two wage bands**, which do not correlate with the minimum legal wage and cause the distortion specified above.

5. Actuarial Systems

The regulations state that each branch shall be financially autonomous. The short-term branch and the temporary injury benefit of the employment injury branch operate under the "assessment" or pay-as-you-go (PAYG) system of financing, as relative costs are expected to remain within a narrow range for long periods. Any adverse fluctuations or trends would be covered by a "contingency" reserve.

The survivors' and disability pensions of the employment injury branch operate under the "assessment of constituent capitals", under which the present value of pensions awarded is accounted for as the expense in a given year.

The long-term branch operates under the "scaled-premium" system of finance, which is a partial capitalization system under which the contribution rate should provide for increasing reserves for a given "period of equilibrium". When expenses exceed contribution income and interest, or before reserves fall below the prescribed minimum, the contribution rate should be adjusted to ensure an adequate level of capitalization.

6. Consolidated Financial Trends

Tables 4.1, 4.2, and 4.3 show a summary of the financial trends during the past three years.

1) Contributions increased by 14.2% in 2023, exceeding the budget amount by an ample margin.

2) Investment income was lower than in 2022, a reflection of excess liquidity in the financial system.

3) The rate of other income has averaged 0.15% of insurable earnings in the past three years, including interest on late contributions, and rental income. The income is distributed in equal parts among the three benefit branches, according to the provisions of Section 14 (3) of the Financial Regulations.

4) Benefits payments increased in absolute terms but remained rather stable in relative terms, while administrative expenditure remained stable.

5) Net Benefit reserves increased by 6%, with the statutory ratio of the benefit branches, shown in the following chapters.

Table 4.1
Consolidated Statement of Income and Expenditure (ex-NHI Operations)
(Amounts in thousands of BZ$)

Income	2023[4/]	2022	2021
Contributions[1/]	164,224	143,847	117,475
Investment Income	24,723	21,029	26,445
Other income[2/]	2,692	2,361	1,866
Total Income	191,639	167,237	145,786
Benefits			
Short-term branch	21,479	23,212	17,481
Long-term branch[3/]	88,055	79,374	72,789
Employment injury branch	7,191	6,016	6,340
Benefit Expenditure	116,725	108,602	96,610
Administrative and other expenses	24,723[5/]	25,701	22,309
Total expenditure	141,448	134,303	118,919
Net income	50,191	32,934	26,867
Contributions less expenditure	22,776	9,544	(1,444)

[1/] Excludes GOB contribution to the NHI Fund and NHI operations.
[2/] Includes interest on rental income and surcharges for late contributions.
[3/] Includes non-contributory pensions.
[4/] Pre-audited data.
[5/] Equivalent to the benchmark of contributions.

Table 4.2
Balance Sheet of the Social Security Board (as of 31 December)
(Amounts in thousands of BZ$)

	2023[b/]	2022	2021
Cash and bank balance	139,240	146,709	106,032
Short-term investments	21,698	20,842	22,479
Long-term investments[a/]	473,130	424,826	418,931
Accounts Receivables and other	96,813	75,455	71,737
Total assets	730,881	667,832	619,179
Liabilities and deferred income	(33,116)	(22,789)	(14,230)
Net reserves and special funds	697,765	645,043	604,949

[a/]Includes investments in Associates and loans.
[b/]Unaudited.

Table 4.3
Distribution of Reserves by Branch
(As of 31 December, in thousands of BZ$)

Benefit Branch	2023[a/]	2022	2021
Short-term	29,341	23,345	22,620
Long-term	512,108	482,098	456,445
Employment Injury	126,620	116,188	106,110
Disablement and Death	10,762	11,474	12,163
Sub-total	678,831	633,105	597,338
National Health Insurance Fund	20,015	12,014	7,276
Social Security Development Fund	1,556	1,922	2,332
Pension reserve	(2,637)[b/]	(1,998)	(1,997)
Total	697,765	645,043	604,949

[a/] Unaudited.
[b/] Actuarial valuation (2023).

7. Administrative Expenditure and Distribution by Branch

Administrative expenditure is distributed among the three benefit branches by a weighted share of the sum of contribution income and benefit of the branch as compared to the Fund as a whole, as shown in Table 5.

As the ceiling and the rates of contributions have been updated in the preceding three years, raising the level of insurable earnings and contributions, **the relative cost of administrative expenditure has declined steadily to 1.51% in 2023, almost equal to the 1.50% benchmark (15% of contributions), as shown in Table 5. The distribution by branch is shown in Table 6.** Administrative expenses are not comparable with other CARICOM schemes, as the Belize scheme operates several Branch Offices increasing the administrative tasks.

Table 5
Distribution of Administrative Expenditure (Amounts in thousands of BZ$)

	2023	2022[a/]	2021
Net Operating Expenses	24,723	25,701[c/]	22,309
Actuarial Cost (Total)[b/]	1.51%	1.74%	1.71%
Budget Performance Indicators			
As % of Contributions	15.05%	17.9%	19.0%
As % of Contributions + Benefits	8.80%	10.2%	9.8%

[a/] Unaudited.
[b/] As percent of insurable earnings.
[c/] Excludes NHI.

Table 6
Administrative Expenditure by Branch, as a percent of insurable earnings

	2023	2022	2021
Short-term branch	0.32	0.37	0.34
EI branch	0.14	0.15	0.15
Long-term branch	1.05	1.22	1.22
Total	1.51	1.74	1.71

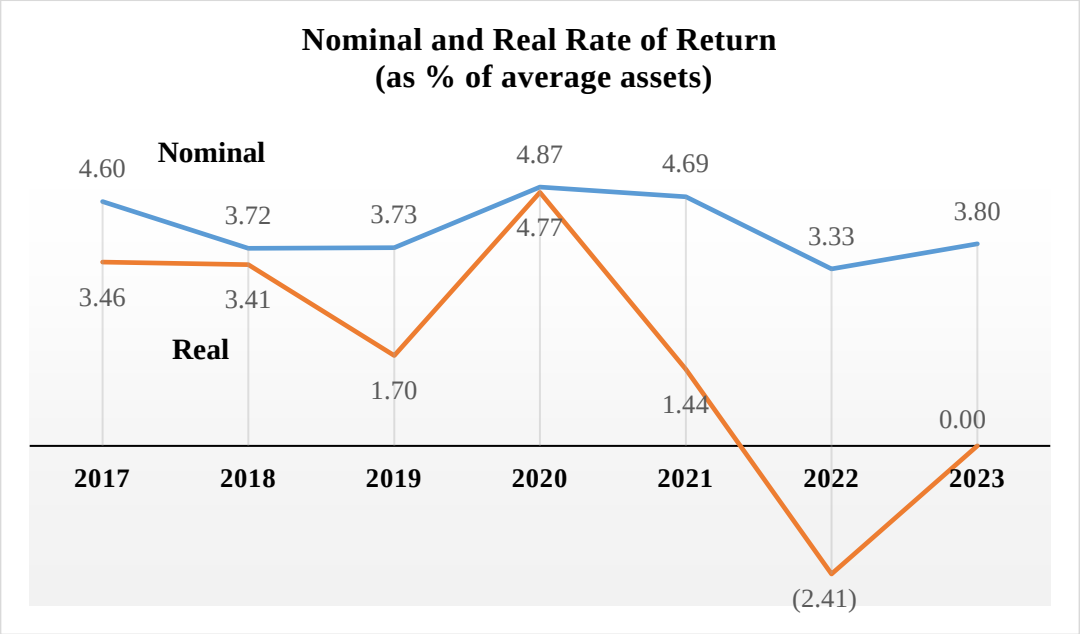
8. Rate of Return on Investments

Table 7 shows the Rate of Return on Assets (ROA). The nominal rate of return rose to 3.80% (3.33% in 2022), and the real (inflation-adjusted) return was neutral, despite the impact of the higher inflation rate (CPI). However, inflation rates are expected to decline as from 2024, restoring the positive real rate of return towards the 3% actuarial benchmark.

Table 7
Rates of Return on Financial Investments, in thousands (net assets)

	2023[a/]	2022	2021
Net investment income	25,159	21,029	26,801
Nominal rate of return[1/]	3.80%	3.33%	4.69%
Annual inflation rate	4.40%	6.30%	3.20%
Real return[2/]	0.01%	(2.41%)	1.44%

[1/] According to the formula $i = 2I/(R_0 + R_1 - I)$, where I is the return on investments and R is the assets at the beginning and the end of the year, excluding financial expenses.
[2/] According to the formula: $[(1 + i) / (1 + s)] -1$ where i and s represent the interest rate and the inflation rate.
[a/] Preliminary.



Due to the importance of the investment return, a strategy must be developed to ensure a prudent investment policy aimed at maximizing a return compatible with the safety of the capital, the latter being the primary consideration. Actuarial projections provide a platform for a long-term investment strategy.

9. Actuarial Trends

Table 8 shows the trend of consolidated financial operations, while the Chart shows the trend of the actuarial rates, showing the steady reduction of the "current surplus" (contribution less expenditure), disregarding investment income.

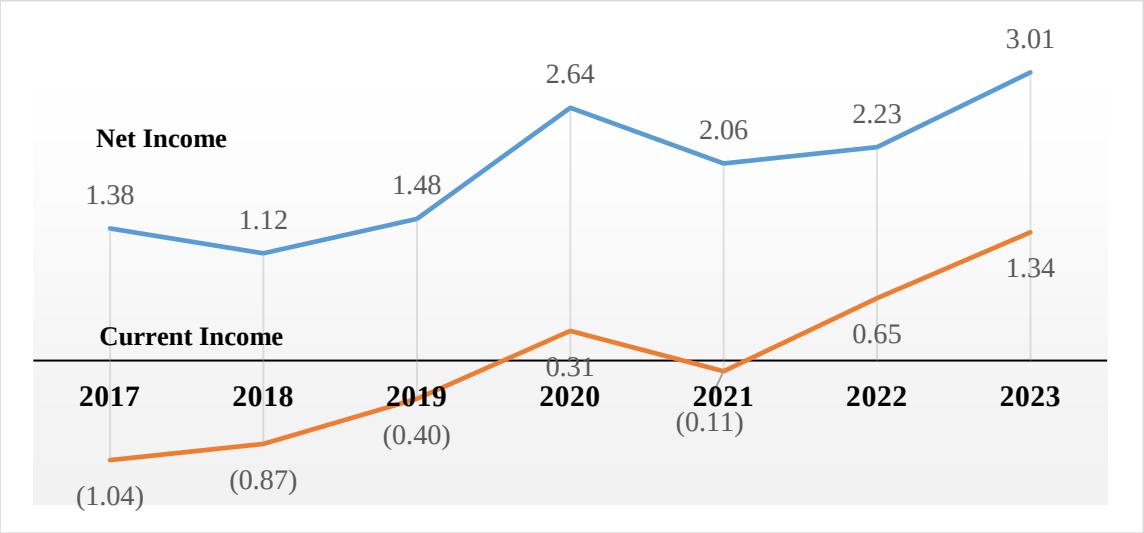
The Chart shows an extrapolation of actuarial current operations, showing that the first inflection point when contributions do not suffice to cover the rate of contributions is projected at 2027. Thereon, the capitalization of reserves would arise by a declining share of investment income, as shown below. The second inflection point or Period of Equilibrium is estimated close to the end of this decade.

Table 8
Trend of Consolidated Actuarial Cost
(As a percent of insurable earnings)

	2023	2022	2021
Contributions	10.00	9.75	9.00
Investment Income	1.53	1.43	2.03
Other income	0.14	0.16	0.14
Total income	11.67	11.34	11.17
Benefit Expenditure	7.11	7.36	7.40
Administrative Expenditure	1.55	1.74	1.71
Total expenses	8.66	9.10	9.11
Net income	3.01	2.23	2.06
Current income[a/]	1.34	0.65	(0.11)

[a/] Contributions less expenditure.

Net and Current Surplus (Deficit)
(As a percent of insurable earnings)



Net income: Total income – Total expenditure
Current income: Contributions – Total expenditure

10. Baseline Consolidated Projections

a) Contributions

Contributions in 2023 were equal to the 2022 actuarial projection. Also, the 2024 budget shows the same amount shown on the 2022 high assumptions. Therefore, future estimates are now based only on the baseline assumptions, with a 5%+/- variance, as shown in Table 9.

The Baseline Assumptions (2024+) are as follows:

- Inflation: 3.0%
- Demographic Growth: 1.5%
- Average Compound Rate: 4.55%

b) Projections

The following tables show updated projections for the next 10 years. **It is noted that the Financial Regulations state that each branch shall be financially autonomous, as shown in the following Chapters. The baseline scenario shows rising reserves up to 2030, declining thereafter, assuming frozen parametric assumptions for the rest of the present decade, an issue to be reviewed periodically.**

The projection combines the financial operations of the benefit branches, yielding a current surplus (contributions less expenditure) for the next two years and deficits from 2027. However, investment income increases reserves up to approximately the end of this decade.

Pending amendments to the regulations would extend the Period of Equilibrium, while adjustment to pensioners in force with no adjustment to the rate or the ceiling would reduce the Period of Equilibrium. Therefore, the formalization of coordinate trigger mechanisms would ensure a more stable development of the actuarial situation of the Scheme.

Table 9
Baseline Consolidated Projection of Income, Expenditure, and Reserves
(Amounts in millions of BZ$)
(Contributions of 10% of Insurable Earnings as from 2024)

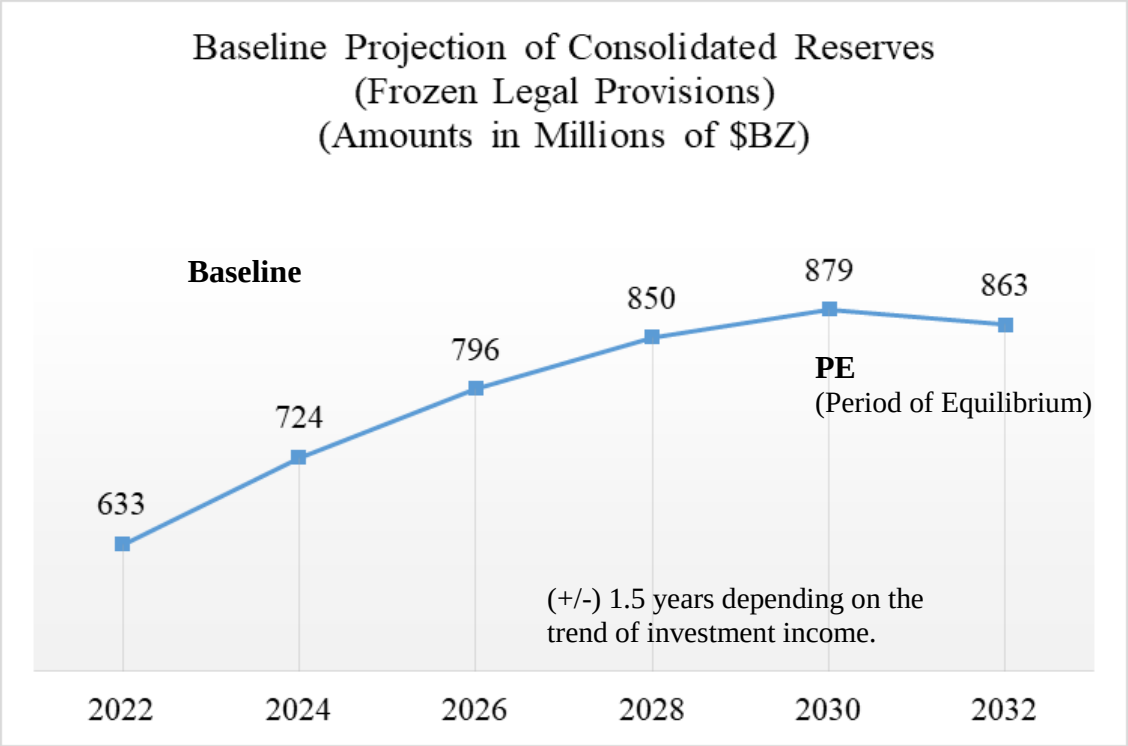
Year	Baseline Contributions	Total Expenditure	Current Income	Investment & Other Income	Surplus (Deficit)	Accumulated Year-End
2021	118	119	(1)	27	26	597
2022	144	132	12	25	37	633
2023[a/]	162	143	19	28	49	682
2024	171	160	11	31	42	724
2025	180	175	5	33	38	762
2026	190	192	(2)	36	34	796
2027	201	210	(9)	39	30	826
2028	212	230	(18)	42	24	850
2029	224	252	(28)	47	19	869
2030	236	276	(40)	50	10	879
2031	248	304	(56)	54	(4)	875
2032	262	333	(71)	59	(12)	863

[a/] Pre-audited.

Table 10
Actuarial Projection of Current Operations (Contributions and Expenditure), as a Percent of Insurable Earnings. Net Current Income (Deficit)

31 December	Contributions	Expenditure	Current (deficit)	Total Surplus (deficit)	Net Total Income (Deficit)
2023	10.00	8.66	1.34	3.01	3.01
2024[b/]	10.00	9.34	0.66	2.46	2.46
2025	10.00	9.77	0.23	2.11	2.11
2026	10.00	10.11	(0.11)[a/]	1.79	1.79
2027	10.00	10.45	(0.45)	1.49	1.49
2028	10.00	10.84	(0.85)	1.13	1.13
2029	10.00	11.25	(0.25)	1.08	1.08
2030	10.00	11.69	(0.69)	1.04	1.04
2031	10.00	12.26	(2.26)	(0.16)	(0.16)
2032	10.00	12.71	(2.71)	(0.46)	(0.46)

[a/] First inflection Point (Negative Ratios). Deficit to be covered by Investment Income.
[b/] Budget.



III
ANALYSIS OF THE SHORT-TERM BENEFIT BRANCH

1. Financial Operations

Table 11 shows the financial operations of the short-term benefit branch. An increase in contributions and lower benefit expenses contributed to a substantial surplus and an increase in the Contingency Reserve.

Table 11
Income and Expenditure of the Short-Term Benefits Branch
(Amounts in Thousands of Belize Dollars)

	2023	2022	2021
Contributions	31,202	27,331	22,320
Investment and other income	1,668	1,583	1,589
Total Income	32,870	28,914	23,909
Maternity allowances	5,242	4,790	3,738
Sickness benefits	15,411	17,637	13,029
Maternity grants	826	784	714
Total Benefits	21,479	23,211	17,481
Operational expenses	5,174	5,128	4,393
Total Expenditure	26,653	28,339	21,874
Income less Expenditure	6,217	575	2,035
Contributions less Expenditure	4,549	(1,008)	446
Contingency Reserve	29,341	23,195	22,620

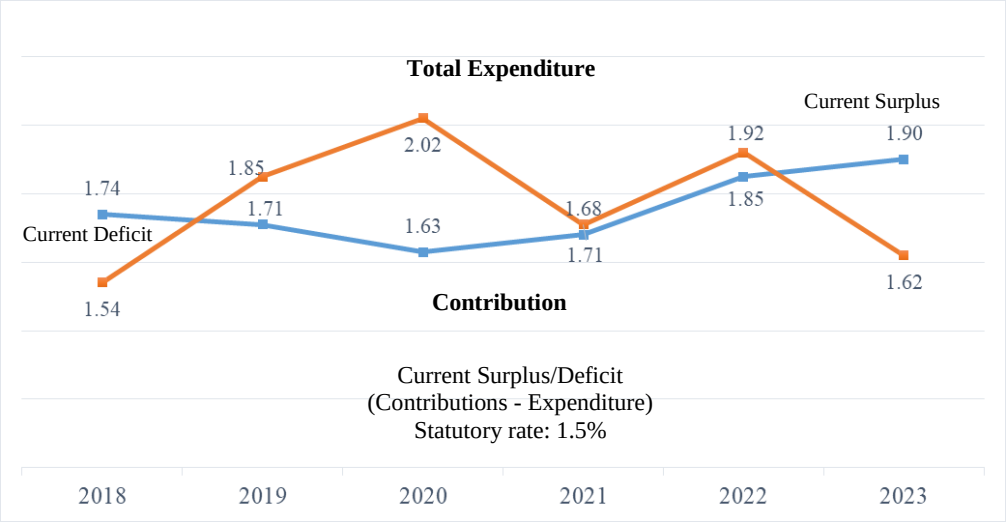
2. Income and Expenditure as a Percent of Insurable Earnings

Income and expenditure as a percentage of insurable earnings are shown in Table 12. The average contribution rate allocated to the branch has exceeded the total expenditure, restoring a financial structure in accordance with actuarial requirements. **The updated legal amendments generated a positive incidence on the 2023 actuarial performance, yielding a current surplus of 0.277% of insurable earnings.**

Table 12
Income and Expenditure of the Short-Term Branch as a Percent of Insurable Earnings

	2023	2022	2021
Contributions	1.900	1.853	1.710
Investment & other income	0.101	0.107	0.121
Total Income	2.001	1.960	1.831
Maternity allowances	0.319	0.325	0.286
Sickness benefits	0.938	1.196	0.998
Maternity grants	0.050	0.053	0.055
Total Benefits	1.308	1.574	1.339
Operating expenses	0.315	0.348	0.338
Total Expenditure	1.623	1.921	1.677
Income less Expenditure	0.378	0.039	0.154
Contributions less Expenditure	0.277	(0.068)	0.033

Current Actuarial Operations of the Short-Term Branch
(as % of insurable earnings)



3. Cost and Fund Ratios

Section 17 (1) of the Financial Regulations sets a minimum level of reserves equivalent to six months of the average benefit expenditure in the last three years. As shown in Table 13, at the end of 2023, the reserve stands above the minimum stipulated in the regulations.

Table 13
Statutory Minimum Level of Reserves (31 December)

	2023	2022	2021
	(amounts in thousands of BZ$)		
Minimum statutory reserve [1/]	10,362	9,339	8,065
Actuarial reserve	29,341	23,195	22,602
Reserve ratio (actual/minimum)	2.83	2.48	2.80

[1/] Six months average benefit expenditure in the last three years.

Trend of Reserve Ratios
(Multiple of Statutory Minimum)

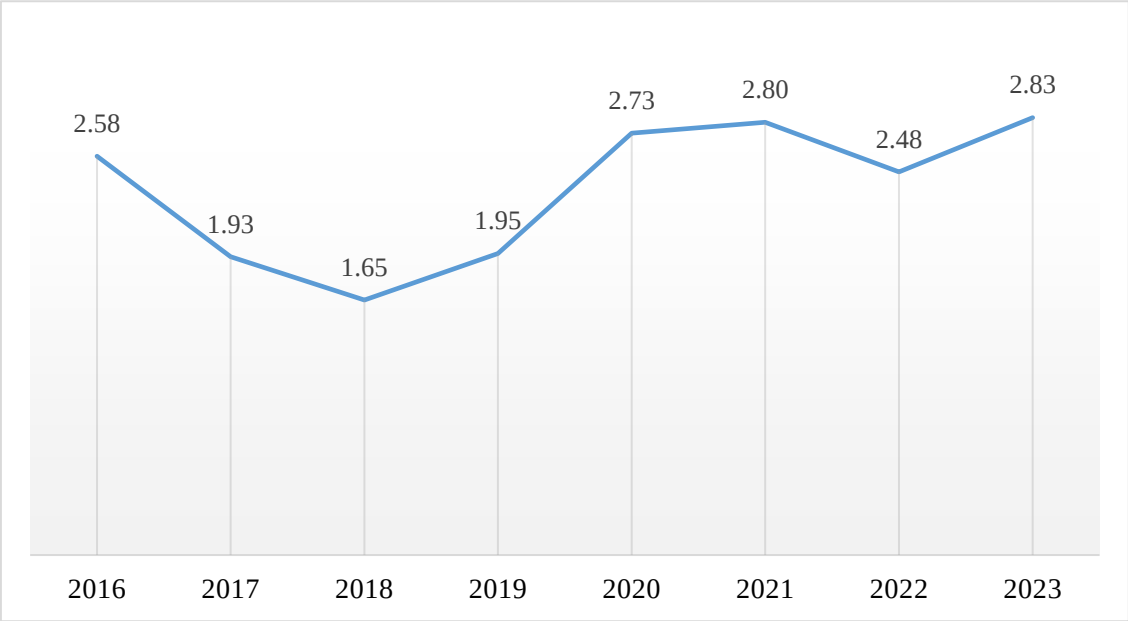


Table 14 shows the Cost Ratio and Funding Ratio of the short-term branch, with indicators showing a positive trend due to the significant increase in contributions and lower benefit claims.

Table 14
Cost and Fund Ratios of the Short-Term Branch

	2023	2022	2021
Benefits ÷ contributions	0.69	0.85	0.78
Total expenditure ÷ total income	0.81	0.98	0.92
Cost Ratio [a/]	0.85	1.04	0.98
Fund Ratio [b/]	1.10	0.82	1.03

[a/] Total expenditure ÷ contributions.
[b/] Reserve ÷ total expenditure in the year.

4. Frequency and Unit Cost of Sickness Benefit

Key indicators are shown in Table 15.

Table 15
Sickness Incidence of Terminate Cases

	2023	2022	2021
Insured Population			
Males	69,450	67,511	64,436
Females	50,127	47,690	42,728
Total Active Insured	119,577	115,201	107,164
Terminated Cases			
Cases	4,289	5,213	4,093
Days Paid	36,078	44,984	53,990
Average duration (days)	8.4	8.6	13.20

5. Actuarial Cost of Sickness Benefit

Table 16 shows the actual actuarial cost of sickness benefits. The actuarial cost remained stable in 2023, a 1.10% cost rate is assessed for the next two years, due to higher morbidity rates.

Table 16

Sickness Benefit Frequencies

Average	Actual		
	2023	2022	2021
Cases per insured	0.31	0.36	0.27
Days per insured (Morbidity rate)	3.04	4.00	3.55
Cost per insured	$129	$130	$122
Actuarial cost (% of IE)	0.94%	1.20%	1.00%

6. Trend of Maternity Benefits

The rates of maternity allowances were as follows:

Table 17
Actuarial Cost of Maternity Benefits

	2023	2022	2021
Total contributors	119,577	116,157	107,164
Female contributors	50,127	48,134	42,728
Number of allowances paid	1,451	1,375	1,110
Number of grants paid	2,739	2,602	2,359
Allowance paid per 100 females	2.89	2.80	2.60
Grants paid per 100 females	2.94	2.87	5.52
Allowances by 100 average contributors	1.21	1.20	1.04
Grants per 100 average contributors	2.29	2.25	2.20

7. Actuarial Cost of Maternity Benefits and Grants

The cost of maternity allowances and grants has remained rather stable in the last three years. For the period 2024/26, the joint average cost is assessed at 0.40% of insurable earnings.

Table 18
Actuarial Cost of Maternity Benefit

	2023	2022	2021
Actuarial cost (allowances)	0.32%	0.33%	0.29%
Actuarial cost (grants)	0.05%	0.05%	0.06%
Total	0.37%	0.38%	0.35%

The SIB statistical data shows that the fertility rate has started to decline moderately in Belize, and the age structure of the population over 15 years is changing gradually, a trend which is also influenced by migration, with an estimated 10% of the population over 60 years of age, as compared to 8% in 2002, a ratio that should be monitored periodically.

8. Trend of Actuarial Cost (2023)

The actual cost was lower than expected, due to the impact of the legal amendments on contributions, as shown in Table 19. For the period 2024/26, contributions are assessed slightly lower than expenses, with a marginal surplus due to the incidence of investment and other income, assuming stable morbidity and fertility rates.

Table 19
Actual and Expected Actuarial Cost (as % of insurable earnings)

Benefit	2024/2026	2023	2022	2021
Sickness allowance	1.05	0.94	1.20	1.00
Maternity allowance	0.35	0.32	0.32	0.29
Maternity grant	0.05	0.05	0.05	0.06
Total benefits	1.45	1.31	1.57	1.34
Administrative expenses	0.35	0.31	0.35	0.34
Total	1.80	1.62	1.93	1.68

9. Short-Term Branch Actuarial Scenarios (2024-2026)

The following triennial projection shows the actuarial sustainability of the short-term branches. Assuming a 5% increase in contributions and an 8% increase in expenses, the projection shows a steady increase in reserves and the Fund Ratio.

Table 20
Short-Term Projection (2024/ 26)

Year	Insurable Earnings	Contributions	Total Expenses	Current Surplus	Investment Income	Annual Surplus	Reserve at year end	Fund Ratio[a/]
2023	1,642	31.2	26.7	4.5	1.7	6.2	2.94	1.10
2024	1,724	32.7	28.8	3.9	1.8	5.7	3.51	1.21
2025	1,816	34.4	31.4	3.3	2.2	5.3	40.4	1.27
2026	1,900	36.1	33.6	2.5	2.2	4.7	45.1	1.34

[a/] Reserve ÷ total expenses.

IV
ANALYSIS OF THE EMPLOYMENT INJURY BRANCH

1. Financial Operations of the Employment Injury Branch

Table 21 shows the financial operations of the employment injury branch, which records as expenses the actuarial present value of disablement and survivor's pensions, in accordance with the actuarial method of "terminal reserves" or "assessment of constituent capital" applied to the scheme. The adjusted contribution rate from 1st January 2021 has reduced the operational surplus, with the reserve increasing at a slower pace than before, due to the investment income on the substantial reserve.

Table 21
Income and Expenditure of the Employment Injury Branch
(Amounts in thousands of BZ$ Dollars)

	2023	2022	2021
Contributions	14,780	12,947	10,573
Investment and other income	5,372	4,532	5,274
Total Income	20,152	17,479	15,847
Disablement grants	483	317	410
Employment injury (short-term)[a/]	2,852	2,161	1,949
Disablement benefits	16	667	2,120
Death benefits	91	530	464
Funeral grants	1,319	9	0
Total Benefits	4,761	3,684	4,943
Operating expenses	2,353	2,107	2,015
Total Expenditure	7,114	5,791	6,958
Income less Expenditure	13,038	11,688	8,889
Contributions less expenditure	7,666	7,156	3,615
Reserve (Short-term benefits)	126,621	115,914	106,110

[a/] Includes medical expenses.
APV: Actuarial present value (new cases).

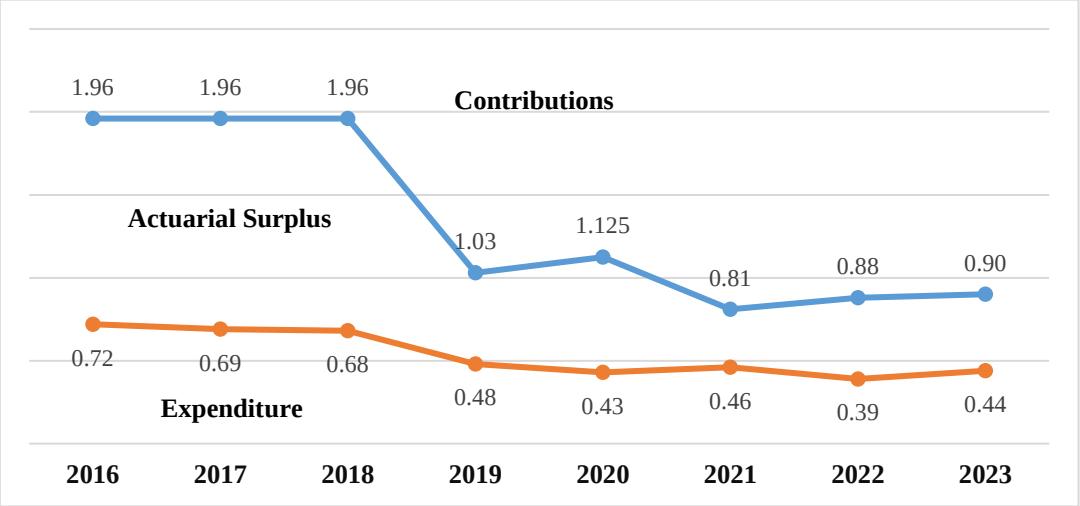
2. Income and Expenditure as a Percent of Insurable Earnings

Income and expenditure as a percentage of insurable earnings are shown in Table 22. Total benefits in 2023 rose to 0.29% of insurable earnings (0.25% in 2022). The relative rate of contribution, which was reduced by almost one-half in 2019, still yields a current surplus, due to the incidence of investment incomes on the accumulated reserve.

Table 22
Income and Expenditure as a Percent of Insurable Earnings (EI Branch)

	2023	2022	2021
Contributions	0.900	0.877	0.810
Investment and other income	0.327	0.306	0.404
Total Income	1.227	1.183	1.214
Disablement grants	0.030	0.014	0.031
Employment injury (short-term)	0.174	0.146	0.150
Disablement benefits (APV)	0.001	0.004	0.163
Death benefits (APV)	0.005	0.003	0.035
Funeral grants	0.080	0.083	0.000
Total Benefits	0.290	0.250	0.379
Operating expenses	0.143	0.141	0.154
Total Expenditure	0.433	0.391	0.533
Income less Expenditure	0.774	0.792	0.681
Contributions less expenditure	0.467	0.486	0.277

Actuarial Cost of EI Branch
(as % of insurable earnings)



3. Statutory and Actual Reserves

Reserves of employment injury benefits have evolved as shown in Table 23. The minimum short-term reserve of the branch, as provided for in Section 17 (2) of the Financial Regulations, should be equivalent to the average benefit expenditure in the preceding three years. **Therefore, at year-end, the reserve is 28.4 times higher than the stipulated minimum, a clear indication that the branch reserves exceed the standard parameters, which are expected to remain frozen in 2023 and start decreasing thereafter as higher claims offset the reduced rate of contributions.**

Table 23
Income, Expenditure, and Reserves of Disablement & Death Pensions
(Amounts in thousands of BZ$)

	2023[a/]	2022	2021
APV disablement benefits	1,088	667	2,120
APV death benefits	193	530	464
Total APV	1,281	1,197	2,584
Net investment income	457	429	533
Total income	1,738	1,626	3,117
Expenditure			
Disablement pension	1,504	1,778	1,711
Death benefits	925	558	579
Total benefits	2,429	2,336	2,289
Excess of income over expenditures	(692)	(710)	827
Actuarial Reserve	10,761	11,453	12,163
Fund Ratio[b/]	4.43	4.90	5.31

[a/] Unaudited.
[b/] Reserve ÷ total benefits.

4. Incidence of Disablement and Death Benefits

Table 24 shows the rates of accidents per 1000 insured persons due to EI accidents. The incidence of accidents shows significant volatility, according to preliminary data, including cases of permanent incapacity which account for the majority of cases awarded.

Table 24

Number of Accidents by Consequence and Rates per 1000 insured

	Number of Cases			Rates for 1000 insured		
Year	Medical Care only	Permanent incapacity	Deaths	Medical care only	Permanent incapacity	Deaths
2023	1,263	252	6	10.6	2.1	0.03
2022	1,052	252	6	9.1	2.2	0.01
2021	1,048	207	1	9.8	1.93	0.00
2020	977	231	3	9.4	2.4	0.03

5. Trend of Pensions in Payment

The statistics shown in Table 25 indicate a stable trend of pensions in payment, with new pensions awarded offset by terminations due to death and other causes, indicative of a significant number of retirees that opt to return to active employment.

Table 25
EI Pensions in Course of Payment

	2023	2022	2021
Disablement Pensions			
Number	532	520	512
Monthly amount	135,678	130,506	126,999
Widows			
Number	83	83	85
Monthly amount	34,588	33,691	32,987
Orphans			
Number	103	117	118
Monthly amount	18,471	20,264	19,801

6. Expected Cost of the EI Branch

The analysis shows the incidence of the allocation of contributions on the actuarial surplus, reducing the capitalization of reserves and eventually freezing the surplus reserves in the second half of this decade.

Table 26
Actuarial Cost of the EI Branch (excluding Investment Income)
(as % of insurable earnings)

Benefit	2024/26[p/]	2023	2022	2021
Employment Injury	0.17	0.17	0.14	0.15
Disablement & Death Benefits (APV)[b/]	0.25	0.04	0.07	0.13
Grants & Medical	0.05	0.08	0.04	0.03
Total Benefits	0.47	0.29	0.25	0.31
Administrative Expenditure	0.18	0.14	0.14	0.15
Total Expenditure	0.65	0.43	0.39	0.46
Contributions	0.90	0.90	0.88	0.81
Current Surplus (deficit)[a/]	0.30	0.43	0.49	0.35
Investment & Other Income	0.30	0.33	0.30	0.40
Total Surplus	0.60	0.77	0.79	0.75

[a/] Contributions less Expenditure.
[b/] Assumes APV factors updated in 2023.
[p/] Projected.

7. Funded Status of the Disablement and Death Reserve

A direct valuation of the level of sufficiency of the Disablement and Death Reserve was performed at the former triennial valuations. The assessment was carried out according to the following bases:

Mortality Table: GAM-83. Widely used in the region for group annuities, with mortality rates compatible with the Central American experience.

Mortality of Disabled Lives: $a_x + 4$ (x = age).

Remarriage Rates (Widows): Non-material. Reduction factor (widows): 0.90 (remarriage and contingent suspension at age 50).

Basic Discount Rate: 5% (ad hoc pension adjustments).

Actuarial Reserve: $11.452 million at 31 December 2022.

The analysis of the Disablement and Death Reserve also shows an actuarial deficit, as shown in Table 34, but the balance of the joint programs still yields an actuarial surplus of $91.3 million at 31 December 2022, as shown in Table 35.

Due to the substantial surplus of the EI branch, the difference can be met by an internal transfer within the branch, although due to the fluctuation of the incidence of EI disability and death, and the long-term time frame involved, such a transfer is not required at present. **The APV updated actuarial factors shown below should contribute to a gradual reduction of the actuarial deficit.**

Table 35 shows a consolidated assessment of the EI branch. The surplus reserves of short-term benefits, assessed at 29 times the statutory minimum, compensate by a wide margin the deficit of the Disablement and Death Obligations, still yielding a consolidated surplus of $91.3 million at 31 December 2022.

Table 27
Funded Status of the EI/Disablement & Death Reserve (on 31 December)
(Amounts in millions of BZ$)

	2023[p/]	2022	2021
Present value of pensions in payments	33,800	32,500	31,007
Reserve	(10,761)	(11,452)	(12,193)
Net Liability	23,039	21,048	18,814

[p/] Extrapolated.

Table 28
Consolidated Actuarial Assessment of the Employment Injury Brand
(at 31 December)

	2023 (Extrapolated) 2021 (Triennial Valuation)		
	(Amounts in millions of BZ$)		
	Reserve	Actuarial Liabilities	Surplus (Deficit)
Short-term benefits [a/]	115,933	3,598	112,335
Disablement death benefits [b/]	11,452	32,500	(21,048)
Total	127,385	36,098	91,287

[a/] Statutory reserve (PAYG basis).
[b/] Actuarial reserve (present value of pensions in payment).

8. Adjustment of the Actuarial Factors to determine the Disability and Survivors' Pensions. Employment Injury Branch

The analysis shows that the factors set forth in the First Schedule (Reg. 20), Tables 36 and 37 of the Disablement and Death Benefit, are outdated, as the mortality of pensioners has improved gradually since the inception of the scheme, yielding an actuarial present value (APV) lower than required to cover the cost of EI disability and death pensions. Practically, all the disability cases occur among males, while the majority of survivors are females.

The mortality factors have been derived from the GAM-83 (USA) mortality table, but for children, the mortality assumption has been assumed as zero with cost factors derived from temporary financial annuities rather than actuarial annuities. The updated actuarial factors are shown in the 2022 actuarial report and have been approved by the Board.

V
ACTUARIAL ANALYSIS OF THE LONG-TERM BRANCH

1. Actuarial System

For the long-term branch, the "scaled-premium" system of finance is being applied. Under this system, the contribution rate is fixed at such a level that the income from contributions and investment is expected to exceed the expenditure on benefits and administration for a period of years referred to as the "period of equilibrium". Throughout the period of equilibrium, the annual excess of income over expenditure is accumulated in a reserve that increases steadily but declines thereafter if there are no adjustments to the contribution rate. A primary objective of the actuarial review is to ascertain the adequacy of the statutory contribution rate in accordance with the system of finance and to quantify the projected level of reserves derived from the financial development of the branch.

2. Financial Operations

The comparative data in Table 30 shows the trend of benefit and administrative expenditure in the period under review. The analysis shows the impact of the enhanced contribution rate allocated to the branch.

Table 30
Income and Expenditure of the Long-Term Branch
(Amounts in thousands of Belize Dollars)

	2023	2022	2021
Contributions	118,241	103,560	84,582
Investment and other income	19,918	16,866	21,271
Total Income	138,159	120,426	105,853
Retirement benefits	69,747	62,093	56,011
Invalidity benefits	5,272	4,632	4,374
Survivors' benefits	10,364	9,835	9,148
Funeral Grants	1,729	1,678	1,941
Non-contributory pensions	943	1,136	1,314
Total Benefits	88,055	79,374	72,788
Operating Expenses	18,254	17,016	15,903
Total Expenditure	106,309	96,390	88,691
Contributions less expenditure (current deficit)	11,932	7,170	(4,109)
Income less Expenditure	31,392	24,036	17,161
Actuarial Reserve	512,108	480,480	456,445
Fund Ratio [a/]	4.8	5.0	5.1

[a/] Reserves ÷ total expenditure.

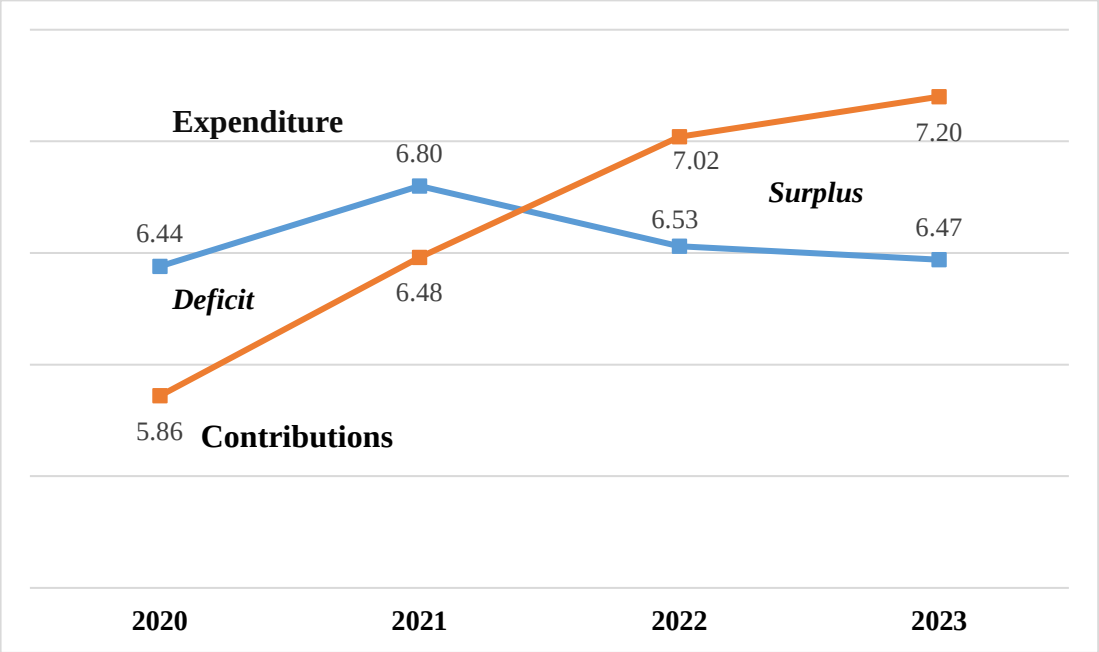
3. Income and Expenditure as a Percent of Insurable Earnings

The current surplus (contributions less expenditure) increased to 0.73% of insurable earnings (0.49% in 2022). **The investment income on the substantial reserve increases the total surplus to 1.94% (1.63% in 2022) and is expected to be the main contributor to the financial performance of the long-term branch for the rest of the present decade.**

Table 31
Income and Expenditure as a Percent of Insurable Earnings

	2023	2022	2021
Contributions	7.20	7.02	6.48
Investment & other income	1.21	1.14	1.61
Total Income	8.41	8.16	8.09
Retirement benefits	4.24	4.21	4.29
Invalidity benefits	0.32	0.31	0.34
Survivors' benefits	0.63	0.67	0.70
Funeral Grants	0.10	0.11	0.15
Non-contributory pensions	0.06	0.08	0.10
Total Benefits[a/]	5.36	5.38	5.58
Operating Expenses	1.11	1.15	1.22
Total Expenditure	6.47	6.53	6.80
Income less Expenditure	1.94	1.63	1.29
Current surplus (deficit)[b/]	0.73	0.49	(0.32)

[a/] PAYG rate (pay-as-you-go).
[b/] Contributions less expenditure.



4. Trend of Insured Pensions and Earnings

The trend of insured pensions and contributions is shown in Table 32. The data shows the impact of the legal amendments on the income from contributions, but the impact of the pandemic had a negative incidence in 2020 and 2021.

Table 32
Trend of Insured Persons and Earnings
(Amounts in thousands of BZ$)

	2023	2022	2021
Insured persons	119,577	115,201	107,164
Contributions	118,241	103,560	84,582
Rate of increase			
Insured persons	3.8%	7.5%	2.6%
Contributions	14.2%	22.4%	17.6%

5. Distribution of Active Insured by Wage-Band and Age-Group (in percent)

Table 33

	Wage-Band 2022/23	Age-Group	Percent
$110 and less	6.5	15/34	55.3
$110/299	40.4	35/54	37.4
$300/499	32.0	55 and over	7.3
$500 and over	21.1	-	-
Total	100%	Total	100%

6. Sectorial Distribution of Active Insured

The data shows that insured persons in the private sector account for 81.7% of the total, and for only 73.8% of contributions, due to higher salaries in the public sector.

Table 34
Sectorial Distribution of Active Insured

Sector	Number 2022/23	Contribution 2022/23
Private	81.7	73.8
Public	12.6	19.3
Statutory	5.7	6.9
Total	100%	100%

7. Trend of Pensions in Payment

Table 35 shows the trend of pensions in payment, with a steady increase in all the categories of pensioners, a normal trend reflecting the gradual demographic maturity of the long-term branch.

Table 35
Number of Pensions in Payment (year-end)

	Retirement	Invalidity	Survivors	Total	Rate of Increase (%)
2021	8,982	603	3,376	12,961	8.7
2022	9,796	642	3,418	13,856	6.6
2023	10,780	678	3,486	13,856	7.9

8. Invalidity Pensions and Grants

Table 36 shows the incidence of invalidity pensions awarded and of invalidity grants.

Table 36

Number and Frequency of Invalidity Pensions Awarded

Average 2022/ 23	Number awarded	Incidence Rate (per thousand)
2023	63	0.52
2022	77	0.73
2021	76	0.71

9. Trend of Demographic Ratios (Pensioners ÷ Active insured)

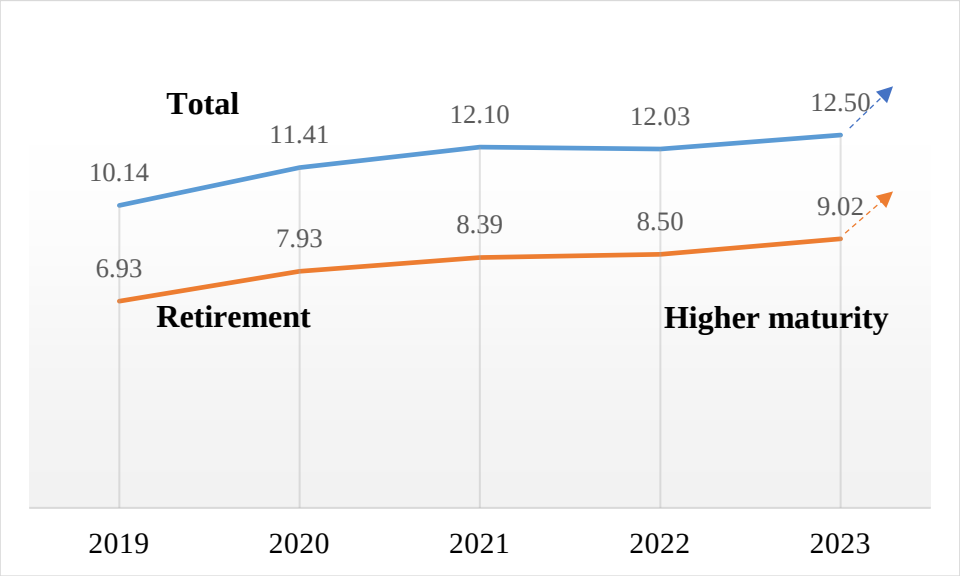
Table 37 shows the trend of demographic ratios, indicative of the gradual aging of the long-term branch.

Table 37
Trend of Demographic Ratios
(On 31 December)

	2023	2022	2021
	Demographic Ratios (Pensioners ÷ active contributors, in %)		
Retirement [a/]	9.02	8.50	8.39
Invalidity [b/]	0.57	0.56	0.56
Survivors [c/]	2.92	2.97	3.15
Total	12.50	12.03	12.10

[a/] Excludes NC pensions.
[b/] Pensions transferred to an old-age category at age 60, up to 2018 only.
[c/] Includes orphans.

Gradual Ageing of the Long-Term Branch
Demographic Ratios
(Pensioners / Active Insured in %)



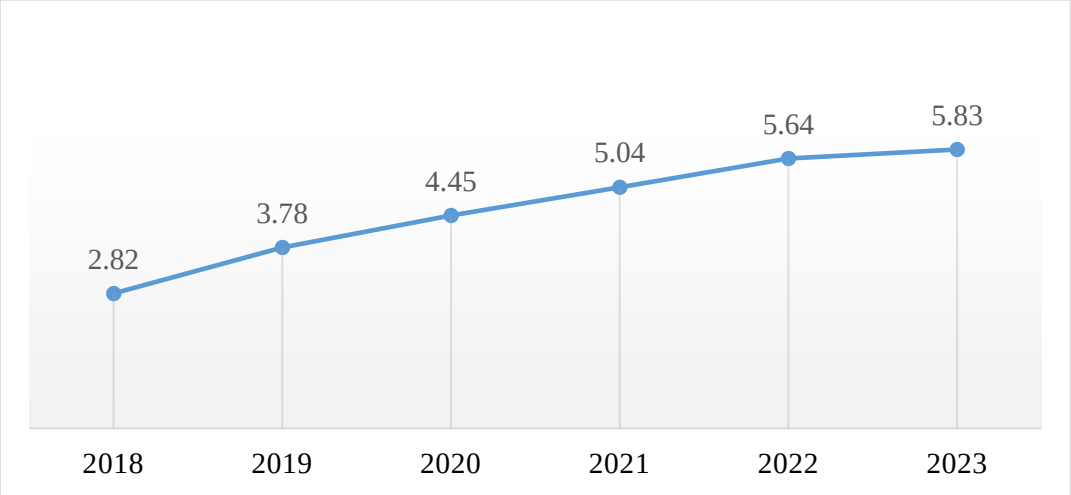
10. Distribution of Statutory Contributions

Deducting from the new gross share of contributions allocated to the long-term branch the estimated costs of grants, non-contributory pensions, and administrative expenditures, yield a net rate of contributions to cover the cost of retirement, invalidity, and survivor's pensions from 4.45% in 2020 to 5.83% in 2023, expected to remain stable for 2024/26.

Table 38
Distribution of the Statutory Contribution Rate as a percent of Insurable Earnings
(Excluding investment income)

	2023	2022	2021
Gross rate	7.20%	7.02%	6.48%
Other income	0.03	0.03	0.03
Total contributions	7.23	7.05	6.51
Administrative expenditure	(1.22)	(1.22)	(1.22)
Grants	(0.12)	(0.12)	(0.15)
Non-contributory pensions	(0.06)	(0.07)	(0.11)
Net rate for contributory pension benefits	5.83%	5.64%	5.04%

Projected Net Contributions allocated for contributory pensions (as % of insurable earnings)



11. Demographic Trends and Ultimate PAYG Cost Basis

The ratio of pensioners to active insured persons continues to increase, an indicator of the demographic maturity of the long-term branch. Longer-term, the demographic ratio will increase steadily, a normal pattern of a maturing pension scheme, as the rate of increase in pensions in force is higher than the rate of increase of active insured persons.

The ultimate PAYG cost of a stable population can be derived by the formula: PAYG = DR x Ṗ, where DR is the ultimate demographic ratio and Ṗ the average pension. Assuming a DR of 40% (1 pensioner by 2.5 active contributors), and **an average pension of 50% of salary, the ultimate PAYG would be equivalent to 20% of salary. This is a theoretical estimate that would take place in approximately 80 years. Complex projections would reach the same PAYG terminal rate (See ILO 2021 Report).**

12. Actuarial Projections

Projections are shown below, based on legal provisions in force, to be updated periodically due to the incidence of investment income. The short-term projection allows SSB to formulate and execute key policy issues in 2024/ 25, whereas the projection up to 2030 aims to determine the Period of Equilibrium, with 2030 forecast +/- 1.5 years, subject to the actual rate of investment income and the marginal impact of current operations (contributions less total expenditure), which are projected to become negative in three years.

A. The Short-Term projection shows a positive performance for the next three years.

Table 39
Updated Short-Term Projection (Updated)

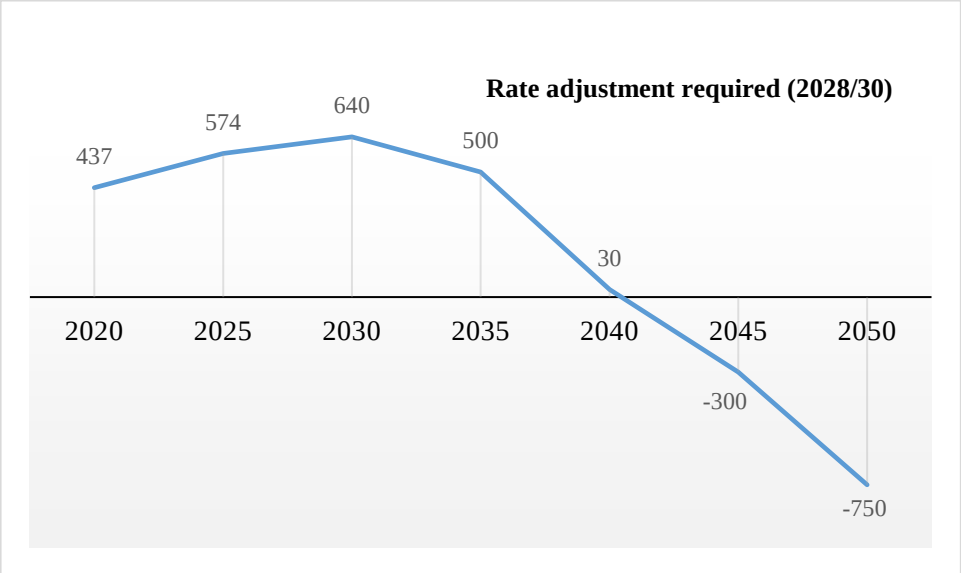
Year	C	Ex	CI	I*	S	R
2021	85	89	(4)	19	15	456
2022	104	96	7	17	24	480
2023	118	106	12	20	32	512
2024	124	116	8	23	31	543
2025	130	126	4	27	31	574
2026	136	136	0	30	30	603

C: Contributions
Ex: Expenditure: 9%
CI: Current Income (deficit)
I: Investment income (ROA = 4/5%)
S: Total surplus (deficit)
R: Accumulated reserve
* Assumes improved investment performance

B. The Medium-Term Projection shows an expected PE close to 2030

Updated Trend of Actuarial Reserves. Long-term Branch
(Amounts in millions of BZ$)

Based on static legal provisions (No parametric adjustments)



ANNEX A
PERFORMANCE ANALYSIS OF THE SELF-EMPLOYED SCHEME

1. Trend of Active Contributors

The voluntary self-employed scheme started on 1 January 2003 and the number of active contributors has increased gradually in the period under review, with effective coverage of a minimal number of self-employed persons in the country. Many self-employed persons have previous credits as employed persons but the total number who have retired as self-employed is equivalent to approximately one-half the number of active SE contributions.

Global statistics show that approximately 40,000 self-employed persons in Belize, of which only a fraction is actively contributing to the voluntary self-employed scheme, but on an irregular basis, with an unusual high frequency of "new registrations".

Table 1
Registered Self-Employed and Active Contributors by Year (31 December)
(Amounts in thousands of BZ$)

Year	New Registrations	Benefit Expenditure	Active Self-employed	Deficit
2021	387	2,838	1,455	(2,053)
2022	372	3,632	1,548	(2,766)
2023	449	4,312	1,742	(3,358)

2. Distribution of the Self-Employed by Wage-Group and Density of Contributions

Table 2 shows the distribution of the active self-employed by wage group and the comparison with the distribution of employed persons. The data shows that the proportion of self-employed persons with notional earnings in the top wage band is much lower than in the general scheme, but adjustments, as they get closer to retirement age, allow them to access a higher pension at retirement.

Table 2
Percent Distribution of Active Insured by Wage Group (2023)

	Percent Distribution	
Wage-group	Self-employed	Employed
Less than $110	22	6
$110/300	48	40
$300 and over	30	54
Total	100%	100%

3. Comparative Distribution of Self-Employed and General Insured Persons

Table 3 shows that 25% of the active self-employed are 55 years and over, as compared to only 7% in the general scheme, an indicator of "adverse selection", to obtain a "financial gain" by participating in the "voluntary" self-employed scheme at later ages.

Table 3
Differential Age Distribution of Employed and Self-Employed Persons by Age Group (2023)

Age-Group	Self-Employed	Employed
15/34	17%	55%
35/54	58%	38%
55 +	25%	7%
Total	100%	100%

4. Frequency of Short-Term Claims by the Self-Employed

Table 4 shows the frequency of short-term benefits awarded to active self-employed persons. Table 5 shows the differential rates of claims of short-term benefits, with a lower incidence by the self-employed, which could imply a "preference" for retirement pensions, rather than short-term benefits.

Table 4
Frequency of Short-Term Claims by the Self-Employed

Year	Number Insured	Total Claims	Incidence Rate
2021	1,455	174	12.0%
2022	1,548	187	12.1%
2023	1,742	206	11.8%

Table 5
Ratio of Short-Term Benefits to Active Insured Person, per Category

	Employed	Self-Employed
2021	0.27	0.12
2022	0.42	0.12
2023	0.31	0.12

5. Demographic Ratios

Table 6 shows that the maturity of the self-employed scheme, measured by the ratio of pensioners to active contributions, is much higher in the general scheme. Although many former self-employed pensioners also had previous credits as employed persons, the disparity in the demographic ratios shows the "window of opportunity" offered by the voluntary self-

employed scheme, allowing insured persons to activate their self-insured status and take advantage of the liberal provisions of the scheme to obtain life pensions lasting 20/25 years after credited contributions for ten years and over. The negative impact on the sustainability of the long-term branch is shown below.

Table 6
Demographic Ratios (Self-Employed Scheme)

Year-end	Demographic Ratio[a/]
2023	44%
2022	48%
2021	43%
2020	33%

[a/] (Pensioners ÷ Active Contributors, in %).

6. Retirement Age of Self-Employed Persons

Statistics show that most self-employed persons opt to retire at 60 years of age, with no penalty in case of continuing with their business, an anomaly to be addressed urgently by the SSB.

The legal interpretation regarding the retirement age for the self-employed is subject to different interpretations. Common sense would indicate that the same provisions as for employed persons would apply, which is our interpretation. Alternatively, if they retire at age 60 with no penalty, they could enjoy a window of opportunity not available to employed persons.

7. Estimated Financial Performance

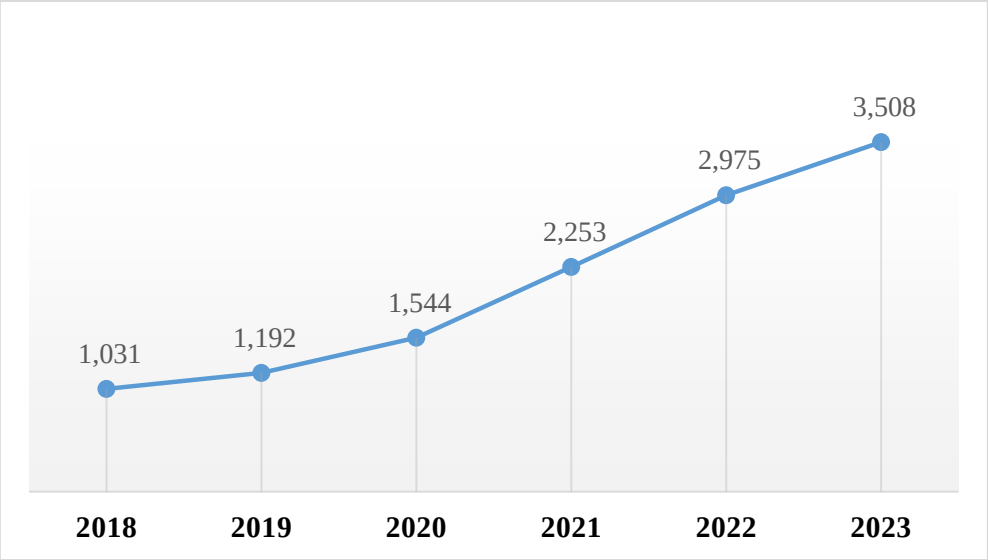
Table 7 shows the widening gap between contributions and expenditure of the self-employed scheme with recurrent deficits.

Table 7
Financial Performance of the Self-employed Scheme
(Amounts in thousands of BZ$)

	2023	2022	2021
Contributions	954	866	786
Benefit Expenditure	4,312	3,632	2,839
Share of administrative expenditure	230	210	200
Total expenses	(4,542)	(3,842)	(3,039)
Net surplus (deficit)	(3,588)	(2,776)	2,253

[a/]Preliminary.

Self-Employed Scheme Operational Loss (in thousands of BZ$)



8. Actuarial Cost of the Self-Employed Scheme

The scheme is financed by 7% of insurable earnings which should increase to 9%, by 2023, in correlation to the 10% rate in the general scheme. Such deficits are funded by internal transfers from the general scheme that will worsen over time the actuarial situation of the long-term branch.

Table 8
Estimated Actuarial Cost of the Self-Employed Scheme (Extrapolated)
(In percent of insurable earnings)

	2023	2021/22
Contributions	7.0%[a/]	7.0%
Short-term benefits	1.1	1.1
Long-term benefits	16.5	15.0
Administrative expenditure	1.3	1.3
Total expenditure	18.9	17.4
Surplus (deficit)	(11.9%)	(10.4%)

[a/]To be updated due to adjustment to insured persons.

9. Self-Employed Scheme.
Adoption of Wage Bands to determine Weekly Contributions. Substitution of unitary weekly income for Wage Bands

The second schedule of the Self-Employed Pension Regulations shows an anomalous set of individual weekly contributions derived from 266 dollar-by-dollar weekly income. The table below shows the adoption of the original wage bands system applied in the general scheme, **excluding the outdated first two wage bands**. It is also noted that in the general scheme, the bipartite contributions have increased.

Therefore, **a similar adjustment should be applied in the Self-Employed scheme**, as shown below. In view of the excessive actuarial cost of the SE scheme, which is much higher than in the general scheme due to adverse selection, the same contribution rate as in the general scheme should also apply.

Another option would be to exclude from the SE scheme the coverage of "employment" injury, an event that can't be verified in the absence of an employer allowing for a 1% reduction in the stated contribution rate in effect at the general scheme.

Table 9
Self-Employed Scheme
Rationalization of Wage Bands to Determine Weekly Contributions:
Second Schedule (Regs. II)

	Weekly Income	Weekly Insurable Earnings	Weekly Contribution			
			7% [a/]	8% [b/]	9% [b/]	10% [c/]
				Options		
1	110 < 140	130	9.10	10.40	11.70	13.00
2	140 < 180	160	11.20	12.80	14.40	16.00
3	180 < 220	200	14.00	16.00	18.00	20.00
4	220 < 260	240	16.80	19.20	21.60	24.00
5	260 < 300	280	19.60	22.40	25.20	28.00
6	300 < 320	320	22.40	25.60	28.80	32.00

[a/] In effect on 31 December 2023.
[b/] Adjustments pending.
[c/] Applied to the General scheme only.

ANNEX B
ASSESSMENT OF THE NON-CONTRIBUTORY PENSION SCHEME (NCP)

1. Background

The payment of Non-Contributory Pensions (NCP) was transferred from the Ministry of Social Services to the SSB in July 2003. In December 2007, the Government decided to add eligible males as beneficiaries of NCP and increased the payment to $100 per month, which caused a significant increase in the number of beneficiaries and benefit expenditure. A financial assistance scheme funded by the Long-Term branch, effective entitlement controls by the NCP Committee have caused a steady decline in the number of active beneficiaries and the actuarial cost of the scheme.

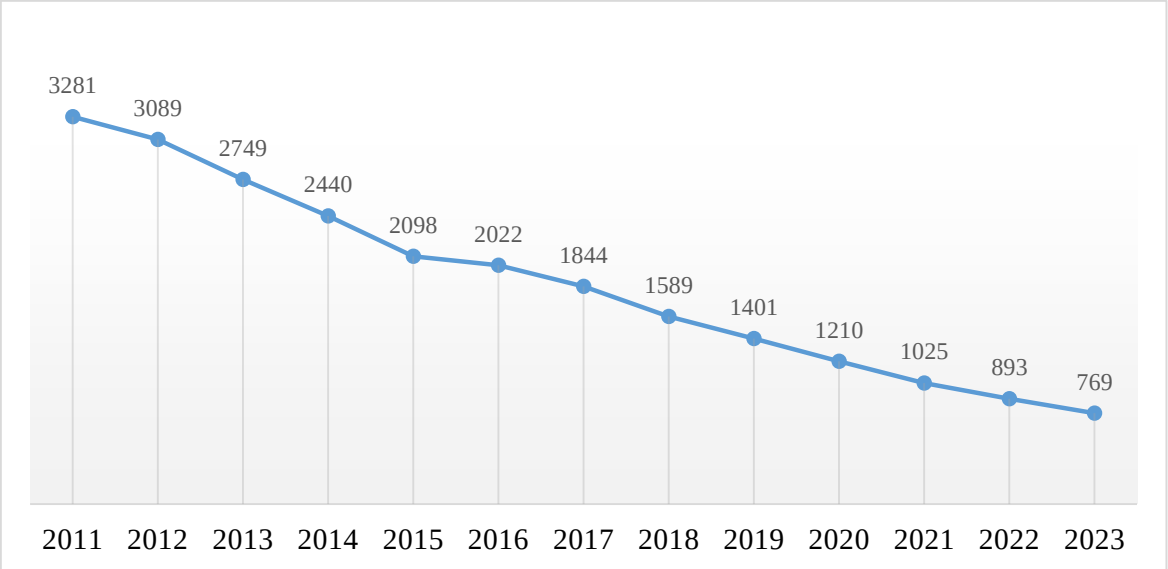
2. Trend of Pensions in Payment

The total number of NCPs has declined steadily from a peak of 4,934 early in 2008 to 769 pensions in payment in December 2023. The mortality of pensioners and more thorough evaluation procedures contributed to offsetting the abnormal surge of pensions awarded during the initial phase of operations.

Table 1
Trend of NCP Pensions (on 31 December)

	2023	2022	2021
Number of pensions in payment			
Males	248	286	328
Females	521	607	697
Total	769	893	1,025

Trend of NCP Pensions



3. Rates of Award and Terminations

Table 2 shows the rates of terminations and awards in the past three years.

Table 2
Rates of Award and Terminations of NCP (in percent)

	2023	2022	2021
Death	(6.72)	(8.36)	(7.70)
Other	(11.21)	(7.79)	(6.06)
Sub-total	(17.93)	(16.20)	(13.76)
New awards	4.27	0.94	0.90
Net increase (decrease)	(13.7)	(15.2)	(12.8)

4. Actuarial Cost of the Scheme

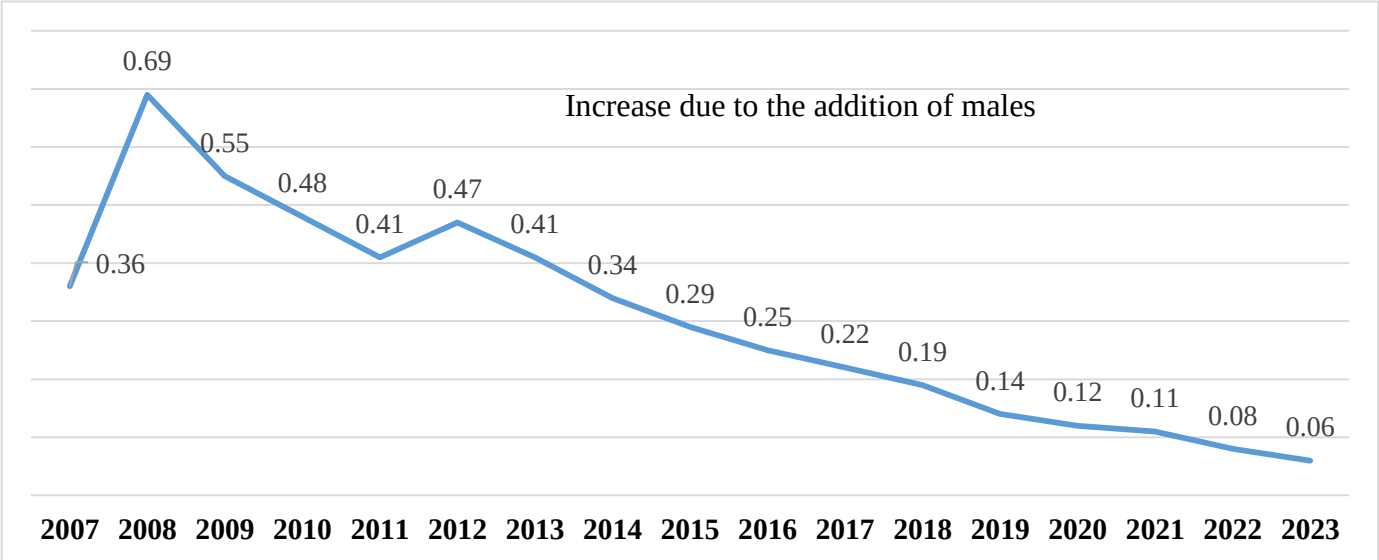
The actuarial cost of benefits has evolved as follows, excluding management expenses. The anticipated actuarial cost as of 2022 is non-material, estimated at only **1.4% of benefit expenditure** of the long-term branch.

Table 3
Actuarial Cost of NCP Benefits

Year	Percent of insurable earnings
2018	0.19%
2019	0.14%
2020	0.12%
2021	0.11%
2022	0.08%
2023	0.06%

More strict evaluation procedures and the mortality of pensioners have exceeded the award of new pensions to a significant extent, with actuarial costs declining to only 0.06% on 31 December 2023 (0.08% in 2022).

Actuarial Cost of NCP Scheme
(% of insurable earnings)



5. Conclusions and Recommendations

The analysis shows that more strict reduction procedures by the Committee and the incidence of a recent legal amendment, raising the ceiling and the rate of contributions, have caused a steady decline in the actuarial cost of the scheme. Further reductions are forecast for 2024/26, due to the impact of the legal amendments. The actuarial cost of benefits is assessed at 0.05% of insurable earnings for the period 2024/26, a non-material amount.

ANNEX C
ASSESSMENT OF THE INVESTMENT PORTFOLIO
(Third Schedule of the Act, Section 17)

1. Investment Performance

Pursuant to the legal provisions, an analysis is presented below of the investments, the strategic assets allocation, and related technical issues, as required by the Third Schedule of the Social Security Act, as a supplement to the statutory actuarial valuation. The SSB investments are made on a "pooled-fund" basis rather than by branch and then distributed in accordance with the assets of each branch, as an interpretation of the provision of Section 14 (2) of the Financial Regulations.

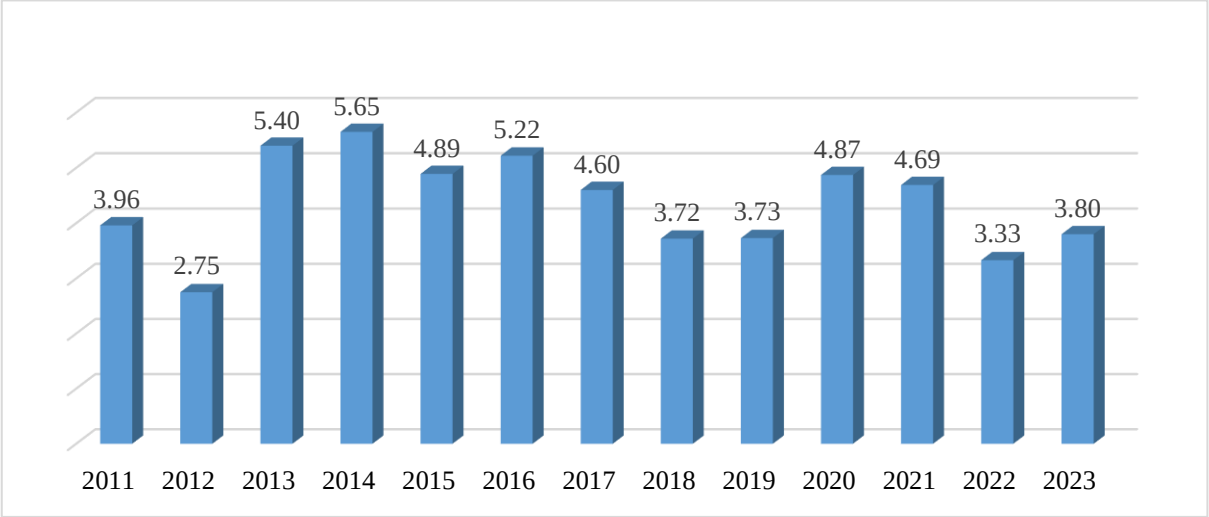
Table 1 shows a 3.80% ROA in 2023, with a flat real inflation-adjusted return, an improved performance as compared to 2022. As inflation is expected to normalize, positive real returns should be expected as from 2024.

Table 1
Rates of Return on Financial Investments, in thousands (net assets)

	2023	2022	2021
Net investment income	25,159	21,029	26,801
Nominal rate of return[1/]	3.90%	3.33%	4.69%
Annual inflation rate	4.40%	6.30%	3.20%
Real return[2/]	0.01%	(2.41%)	1.44%

[1/] According to the formula $i = 2I/(R_0 + R_1 - I)$, where I is the return on investments and R is the assets at the beginning and the end of the year, excluding financial expenses.
[2/] According to the formula: $[(1 + i) / (1 + s)] - 1$ where i and s represent the interest rate and the inflation rate.

Nominal Rate of Return on Investments
(In percentages)



2. Distribution of the Portfolio

The distribution of the portfolio is shown in Table 2, showing a high contribution of liquid assets which penalizes the ROA.

Table 2

Percent Distribution of the Assets (31 December)

	2023	2022	2021
Cashs equivalents[a/]	19.4%	20.4%	17.0%
Short-term investments	3.2	3.2	8.0
Long-term investments	36.8	33.5	30.0
Investment in Associates[b/]	29.2	31.3	33.0
Sub-Total	88.6	88.4	88
Other assets	11.4	11.6	12.0
Total	100%	100%	100%

[a/] In excess of requirements.
[b/] Includes utilities.

3. Cash Bank Balances (in millions of BZ$ at 31 December)

Table 3 shows the increase in cash in the preceding four years, rising 5.5% at 31 December 2019 to 22% at the close of 2022; the latter exceeding by an ample margin standard benchmarks.

Table 3

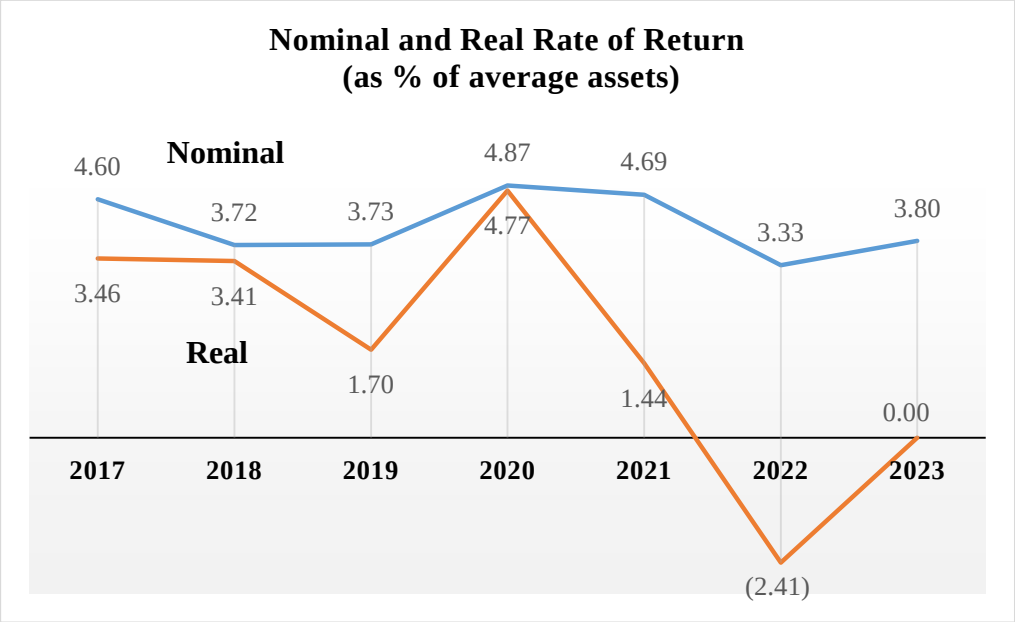
	Amount	As % of assets
2023	139.2	19.4
2022	146.8	20.4
2021	106.3	17.1
2020	73.3	12.5

4. Social Investments

Both the ILO and the ISSA guidelines allow for a suitable proportion of the reserves to be allocated to social investments that promote employment and therefore enhance economic development and increase employment, yielding additional SSB, contribution income. This category of investments, denominated as Economically Targeted Investment (ETI), would carry interest rates slightly lower than commercial investments (1% to 1.5%). A ceiling of 5% of net assets could be allocated to ETD by the SSB, or approximately $30 million.

5. Nominal and Real Return of Assets

The following chart shows the nominal and real rates, which have been negatively impacted in FY 2023 due to the high amount of assets in cash and inflation trends.



6. Public Sector Investments vs. Development Issues

The strategy under the consideration of the SSB is to allocate additional funds to "development issues" rather than "financial issues". The amendments setting a 10% contribution rate and a $520 per week ceiling allow a longer horizon investment.

Higher allocations to GOB bonds offer a rate of return that should allow the key actuarial assumption of a 3% real return on a long-term basis, after inflation, as shown by the Sharpe analysis below.

It is also noted that the SSB is essentially a subordinate provider of loans to private enterprises and not a substitute for the traditional banking sector lending activities. The Board is also advised to require the return of dividends and interest in cash, as no recapitalization of shares is feasible due to the SSB's need for liquid returns. Avoiding allocation in a single entity above 20% of assets should also be required, in compliance with ISSA guidelines.

7. Enhancement of Development Issues

The sectoral structure of the investment portfolio shows a skewed distribution in favour of **Financial Issues** as compared to **Development Issues,** the former comprising a large proportion of the portfolio.

An analysis of the medium-term cash flows shows the advisability to restructure the distribution of the investment portfolio by:

- Freezing temporarily the allocation to utilities and targeting fresh funds to productive sectors of the economy. This would cause a gradual reduction of the **relative distribution** of the investments in utilities, as shown below.
- Prioritizing the investment of fresh funds targeted to GOB bonds, and the sectors that enhance economic development, exports, and employment creation.
- As shown in Section 3, a certain proportion of assets could be allocated to social investments (ETI).

8. Liquidity of the Investment Portfolio

In view of the increased actuarial maturity of the scheme, the Board is advised to seek an adequate level of liquidity on new investments. Actuarial liquidity means that the investment could be realized in cash when actuarially required.

The actuary also advises cautionary measures in non-liquid assets as collateral on commercial loans, such as land or fixed assets, which might have a fair value lower than the appraisal value in case of a forced liquidation.

Financing parameters for collateral loans could range from 40% to 70% depending on the type of property, and could even be lower for collateral such as land.

The actuary further advises avoiding additional purchases in local shares (utilities), as no active securities market is effective in Belize, as well as the higher risk of a shareholder as compared to a bondholder or depositor. Allocations of high-quality shares or bonds abroad could be evaluated in due course, as a diversification policy of the investment portfolio.

The significant reduction in the rates of interest payable by the local banks, due to excess liquidity and restrained demand by personal and institutional borrowers, is having a negative incidence on the rates of return. Indicators show that rates of interest in the US will decrease significantly in the second half of 2024, with several adjustments on the agenda by the Federal Reserve Board.

As the GOB has a direct subsidiary obligation to guarantee the financial solvency of the SSB, **the purchase of additional Treasury Notes or Bonds is deemed a more secure investment than private-sector obligations.**

Attachment

Scenarios of Risk-Adjusted Returns. Sharpe Ratio Scenarios

$$S_a = \frac{E\left[R_a - R_b\right]}{\sigma_a}$$

S_a = Sharpe Ratio
E = expected value
R_a = asset return
R_b = risk-free return
$SD = \sigma_a$ = standard deviation of the asset excess return

The Sharpe ratio measures the performance of an investment such as security or portfolio compared to a risk-free asset, after adjusting for its risk.

The Sharpe ratio is calculated as follows: Subtract the risk-free rate from the return of the portfolio. The risk-free rate could be a U.S. Treasury rate or yields, such as the one-year or two-year Treasury yield. Divide the result by the standard deviation of the portfolio´s excess return.

Does a good Sharpe ratio indicate a high degree of expected return for a relatively low amount of risk? Usually, any Sharpe ratio **greater than 1.0** is considered acceptable good by investors. A ratio higher than 2.0 is rated as very good. A ratio of 3.0 or higher is considered excellent.

Illustration (2021)
Standard Deviation (x = Nominal Return on Assets / SSB Financial Statements)

$$SD = \sqrt{\frac{\Sigma(x-k)^{\,2}}{N-1}}$$

SSB / Belize
Standard Deviation (Portfolio)/Post-ante

Year	x	x-k	$(x-k)^2$
2021	4.360	88	7,744
2020	4.800	528	278,784
2019	3.880	(392)	153,664
2018	3.720	(552)	304,704
2017	4.600	328	107,584
SD = K	21.36 / 5 = 4.272	-	852,480

Total Portfolio: (Standard Deviation / Post-ante)
852,480 / 4 = 213,120 = **0.461650 = SD** mid-way but 0 and 1.

Sharpe Ratio (Sensitivities)
(Total Portfolio)

SR = (Rp-r) / S D (10.461650)
K = Risk-free Rate (Belize). 2/4% Scenarios

K		SD	SR
2% :	=	4.272 – 2 / SD =	**4.92**
3% :	=	4.272 – 3 / SD =	**2.76**
4% :	=	4.272 – 4 / SD =	**0.58**

Examples / Belize

The segmentation by asset classes on as follows:

Financial Statements on 31 December 2021

Atlantic Bank (CDs): Average Rate	= 3.50%	-
Central Bank of Belize: Average Rate	= 4.42%	(Float Rate)
	= 5.00 %	(Fixed Rate)
Sharpe (CDs)	(3.50 - 2.00) / 0.95 (Assumed) =	1.58
Sharpe (FR/ Bonds)	4.42 - 2.00 / 0.70 (Assumed) =	3.46
Sharpe (Fixed Rate / Bonds)	5.00 - 2.00 / 0.8 =	3.75

Conclusion

Assuming a SD of 0.95 (CDs), 0.70 (Floating Rates bonds), and 0.80 (Fixed Rate Bonds), the **post-ante** analysis shows that the Fixed Rates Bonds are expected to perform better than other Sharpe Ratios.

For a **theoretical example** of an investment in a mortgage or a loan:

Loan:	7.00 – 5.00 / 0.60 =	3.33
Mortgage:	7.00 – 4.00 / 0.70 =	4.28

For a loan in load, the interest rate showed higher than 7% for the risk-free operation to equal the mortgage.

ANNEX D
ACTUARIAL ASSESSMENT OF THE NATIONAL HEALTH INSURANCE PROGRAM

1. Background

As stipulated in Part VI of the Social Security Act, the Board has been entrusted with the management of the National Health Insurance (NHI), which has been in operation in specific areas of Belize City, then in the Southern Region, and gradually in the Northern Region.

2. The Health Care Model in Belize

Belize has a multiple health care model based on three pillars, namely: **a)** services provided by the MOH; **b)** limited regional services provided by the NHI; and **c)** private services directly or through insurance companies or facilities offshore.

The NHI program is limited in coverage; its restricted primary health care package of benefits (excluding surgery, general hospitalization, and other services), was founded in its entirety by the SSB until December 2007, co-financed with GOB transfers from 2008, and entirely by GOB funds as from 2009.

3. Actuarial Systems

The program operates on a pay-as-you-go basis, with income based on GOB contributions equivalent to expected expenditure, and a margin for a contingency reserve. The same system would be applied if the financing model were expanded to include additional sources of revenue.

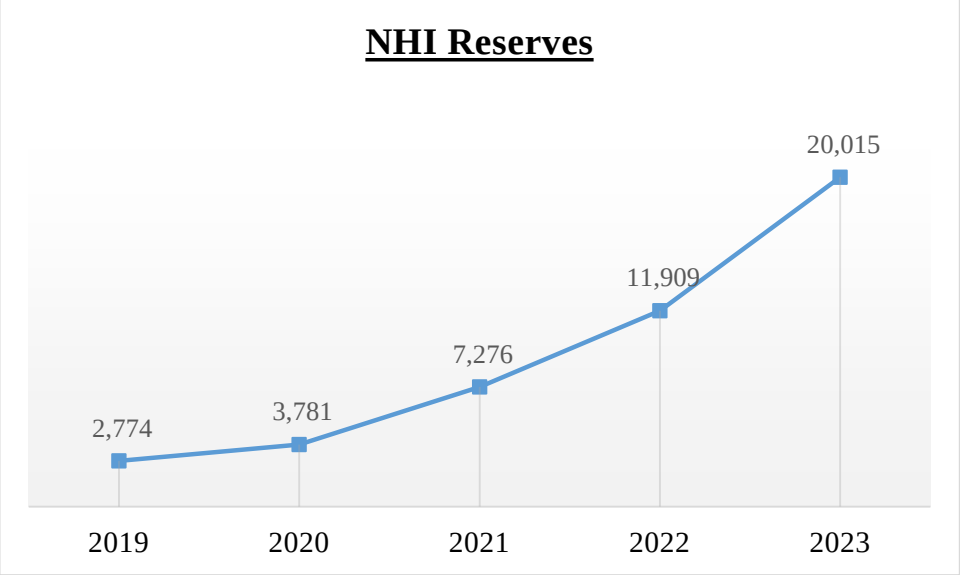
4. NHI Financial Trends

The financial trend is shown below, with a significant surplus of $8.12 million in 2023. The average administrative cost of the scheme is lower than 10% of benefits, in accordance with accepted benchmarks.

Table 1
Financial Trends of the National Health Insurance Fund
Amounts in thousands of BZ$

	2023	2022	2021
Total contributions (GOB)	27,275[b/]	22,000	17,740
Payments to providers (benefits)	17,743	15,109	13,181
Operating expenses[a/]	1,412	1,408	1,036
Total expenditure	(19,155)	(16,517)	(14,217)
Excess of income over expenditure	8,120	5,483	3,523
NHI Reserves	20,015	11,909	7,276
In benefit months	13.93	9.46	6.57

[a/] Excludes claims pending payment.
[b/] Includes $25,200 (interest). $27,250 GOB Contributions.



5. Financial Ratios

Key financial ratios have evolved as shown in Table 2.

Table 2
Key Financial Ratios (in percent)

	2023	2022	2021
Benefits as % of contributions	63.3%	68.7%	74.8%
Total expenses as % of contributions	70.3%	75.1%	80.7%
Operating expenses as % of benefits	8.2%	9.3%	7.8%
Fund ratio (reserves ÷ total expenditure)	1.05	0.72	0.51
Fund Ratio (*In months)	12.6	8.6	6.1

The analysis shows a Fund Ratio equivalent that increased substantially in 2023, slightly exceeding the internationally accepted minimum benchmark of six months to one year's average expenditure.

The ratio would decline if outstanding claims were deducted from the reserves. A key task of the NHI is to maintain an adequate Fund Ratio to cover potential increases in claims.

6. Summary of Financial Operations by Region

Table 3 shows a summary of the financial operations by region, according to the NHI activity reports. Expenses in Southside Belize account for the greater part of the total, as several services are provided only in Belize City. The proportion of expenses in the Northern Region increased to 11% of the total (10% in 2021), which might increase in correlation with the expansion of services in that area.

Table 3
Financial Operations by Region
(Percent distribution)

	2023	2022	2021
South Side Belize City	50	49	48
Southern Region	32	33	35
Northern Region	11	11	10
Total purchasing expenses	93	93	93
Administrative expenses	7	7	7
Total expense	100	100	100

7. Cost of Benefits by Type of Service

Table 4 shows the cost of benefits by type of service and region. Services in the Southern and Northern Regions are limited to Primary Care, Ophthalmology, and hospital deliveries. Pharmaceuticals, Imaging, and Lab test expenditures declined in 2020 due to the pandemic, with a normal pattern restored in 2022.

Table 4
Benefit NHI Expenditure by Specific Service, (in thousands of BZ$)

	2023	2022	2021
Primary Care (PCP)	11,531	10,957	10,566
Pharmacy	999	897	989
Imaging	920	729	399
Lab tests	1,960	1,448	832
Ophthalmology	294	248	126
Others	1,035	830	334
Total	16,739	15,109	13,246

8. Membership Data

Coverage has been increasing steadily with a total in excess of 136,000 at 31 December 2023.

9. Theoretical Actuarial Cost of the Program

Table 5 shows estimated actuarial costs as a percent of the wage base, showing estimated actuarial costs of 3.89% (3.73% in 2022), assuming a "notional" wage base of 30% of the total SSB insurable earnings.

Table 5
Estimated Actuarial Cost of Benefits
(Amounts in thousands of BZ$)

	2023	2022	2021
SSB wage base	1,642,240	1,475,353	1,305,278
NHI beneficiaries	135,000[2/]	133,842	129,784
NHI wage-base (30%)[1/]	492,672	442,606	391,583
NHI benefit expenditure ($)	17,743	15,109	13,249
Administrative expenditure ($)	1,412	1,408	1,036
Total expenditure	19,155	16,517	14,285
Cost as % of NHI wage-base	3.89%	3.73%	3.64%
Cost per member per year	$142	$123	$110

[1/] Estimated average wages of the low-income and indigent segment of the NHI target population. Subject to re-assessment.
[2/] Estimate.

NHI has been covering a basic package range of benefits, excluding key services such as general hospitalization, surgery, drugs for outpatients, etc. Adding this to the package of benefits would entail additional costs to be borne by the GOB.

10. Conclusions and Recommendations

The GOB has in place a program for residents of a section of Belize City and the other regions, financed by budget transfers. The reserve ratio increased substantially on 31 December 2022. **The analysis shows that the NHI has been able to expand services with static funds, generating a reduction in actuarial costs, an indicator of operational efficiency.**

The actuarial cost has declined gradually, yielding a substantial increase in the level of reserves; with a record surplus of $8.12 million in 2023. Primary health services account for about three-quarters of benefit expenditure. Closer coordination of services with the Ministry of Health might improve the cost ratios.

The actuarial cost to cover additional geographical areas under alternative financing scenarios was assessed in an actuarial report submitted by the actuary in June 2008 (NHI Assessment of Actuarial Costs and Financing Options), which should be updated based on emerging trends.

As per Part II of the Social Security Act, the NHI scheme is managed by the Board, but financing is the responsibility of the Government. Therefore, the scheme is cost-neutral to the SSB, despite marginal supervisory and financial support by the SSB.

ANNEX E
SUMMARY OF BENEFIT PROVISIONS

A. Sickness Benefit

Eligibility	Insured persons rendered temporarily incapable of work over 14 years and not older than 65 years of age, and in insurable employment when becoming incapacitated for work.
Contribution conditions	Not less than 50 contributions paid, and in insurable employment on the day of the incapacity, and 5 weeks of contributions in the preceding 13 weeks.
Duration of payment	From the first day of incapacity (as from 1 January 2003) and for a continuous period of sickness not exceeding 39 weeks or 234 days. (Paid from the third day in 2001 and the second day in 2002). From the first day in 2001 and 2002, the incapacity lasts for 14 days or more.
Rate of daily benefit	80% of average weekly insurable earnings divided by 7 the first 156 days, and 60% the remaining 78 days (Sundays included).
Average weekly insurable earnings	Total weekly insurable earnings on which contributions were paid in the preceding 13 weeks divided by the number of weeks for which contributions were paid.

B. Maternity Benefits

a) Maternity Allowance

Eligibility:	Payment to an insured woman in case of pregnancy and confinement.
Contribution conditions:	Not less than 50 contributions paid since the appointed day (1 June 1981) and in the period of 39 consecutive weeks immediately preceding the sixth week before the expected date of confinement; not less than 30 contributions must have been paid or credited (of which 20 must have been paid).
Starting date of payments:	Not earlier than 7 weeks before the expected date of confinement.
Rate and duration of weekly benefits:	80% of average weekly insurable earnings, for a period of 14 weeks.
Average weekly insurable earnings:	Total weekly insurable earnings on which contributions were paid in the 39 weeks preceding the sixth week before the expected date of confinement, divided by the number of weeks for which contributions were paid.

b) Maternity Grant

Payable to an insured woman or a husband on the occasion of his wife's confinement if his wife is not entitled to the grant.

Eligibility:	Not less than 50 contributions paid since the appointed day and 25 contributions paid in the 50 weeks immediately preceding the week in which the confinement occurs.
Amount of grant:	$300 per child (payable only once in respect of any contribution year).

C. Retirement Benefit

a. Retirement Pension

Retirement age:	As from 60 years of age, and retired from insurable employment (last condition not required if an insured person has attained 65 years). **New provision: Eligibility jointly with a survivor's pension.**
Contribution condition:	500 paid or credited weekly contributions, of which 150 have been paid.
Rate of pension:	30% of average insurable earnings plus 2% for every 50 contributions (excluding special credits) in excess of 500 up to 750; and 1% for every 50 contributions in excess of 750 (plus an overall 5% adjustment / to be deleted).
Average insurable earnings:	Sum of weekly insurable earnings during the best three years in the last 15 years (or lesser period of contribution years if contributions not made for 15 years) divided by 150.
Minimum pension:	$47 per week. ($49.35 for those receiving the 5% increase). An anomaly as the SSB should not have **two** pensions.
Maximum pension:	60% of average insurable earnings.

b. Retirement Grant

Payable to insured persons retiring after the age of 60 years and not qualifying for a retirement pension.

Contribution conditions:	Not less than 26 contributions paid.
Amount of grant:	Six times the average insurable earnings for every 50 contributions paid or credited, or 2½ times the sum of such earnings divided by the number of weeks of contributions for each unit of 50 such contributions.
Minimum grant:	$800.

D. Invalidity Pension

a) Invalidity Pension

Invalidity:	Insured person under the age of 60 years who is incapable of work due to a specific disease or bodily or mental disablement which is likely to be permanent, and who has been incapacitated for not less than 13 consecutive weeks immediately preceding the week in which the benefit is claimed.
Contributions conditions:	Not less than 150 contributions paid and not less than 110 contributions paid or credited in the last five years, and not less than five contributions paid in the last 13 weeks.
Special credits:	Claimants satisfying contribution conditions are awarded special credits equal to 25 contributions for each year between the age of the claimant and 60 years.
Rate of pension:	If more than 500 contributions are paid or credited, as for retirement pension; otherwise, 25% of average insurable earnings with 150 to 299 contributions plus 1% for every 50 contributions in excess of 299 up to 499.
Minimum pension:	$49.35 per week as of April 2016.
Maximum pension:	60% of average insurable earnings.

b) Invalidity Grant

Payable to an invalid person not qualifying for an invalidity pension.

Contribution conditions:	Not less than 26 contributions paid.
Amount of grant:	As for retirement pension.
Minimum amount:	$800.

a. Funeral Grant

Qualifying conditions:	Insured persons entitled to or in receipt of sickness or maternity benefit, or in receipt of, or satisfying the contribution for, a retirement or invalidity pension.
Contribution conditions:	50 contributions paid; 150 contributions paid in respect of Funeral Grant for deceased spouse and deceased dependent child.
Amount of grant:	$1,500 deceased $1,000 deceased spouse. $ 500 deceased dependent child.

b. Survivor's Benefit

Survivor's Pension

Qualifying conditions: Deceased received retirement or invalidity pension or would have been entitled to invalidity or retirement pension if he had become incapacitated or retired at the time of his death.

Qualifying conditions of Beneficiaries:

(a) Widow: On the date of her husband's death she was pregnant by the deceased or had the care of a child of his under 16 years of age, or on the date of his death she had been married to the deceased for not less than 3 years and

i) she is over the age of 50 or,
ii) she is permanently incapable of self-support and was wholly dependent on her deceased husband.

Period of Pension

During the period while she has the care of a child, and if aged 50 or over when she no longer has care of a child, for her lifetime thereafter or until remarriage. For one year if the widow does not qualify for a longer period.

(b) Widower: Married to the deceased, not less than 3 years, permanently incapable of self-support, and wholly dependent on his deceased wife.

(c) Unmarried Child: Until 16 years of age, (or until 21 years, if receiving full-time education, whichever is earlier.

(d) Invalid Child: Unmarried, permanently incapable of self-support, and wholly dependent on the deceased.

Rate of Benefit: Widows and Widowers: 66%; each child 25%, or 40% if invalid; parents – 40%.

Minimum pension: $49.35 per week.

Maximum pension: 100% of the pension paid or payable to the deceased. Otherwise, each share is reduced proportionately.

(b) Survivor's Grant

Payable to beneficiaries if they are not entitled to pensions on the death of an insured person who satisfied the contribution conditions for retirement or invalidity grant. The grant is payable in the same proportion as the survivor's pensions and the total amount of the grant is the same as the retirement grant.

E. Employment Injury Benefits

The following benefits are included:

- Injury benefit (temporary incapacity for work), including accidents occurring "to and from work".
- Disablement benefit (permanent disability).
- Medical care is required as a result of employment injury.
- Constant-attendance allowance.
- Survivor's pension and funeral grant.

Average insurable earnings: earnings for which the last four contributions have been paid divided by four (or two or three as the case may be).

No contribution conditions are required and the rates (or the amounts) of benefit are as follows:

a) Injury benefit: 80% of the average insurable earnings from the first day of incapacity up to a maximum of 26 weeks.

Minimum pension: $49.35 per week.

Disablement benefit:

- Degree of disability
  25% or more — Periodical payment equal to 60% of the average weekly insurable earnings times the degree of disability.
- Degree of disability
  less than 25% — Lump-sum grant equal to 260 times the average weekly insurable earnings times the degree of disability.

Medical care: Provided free of charge in public or private facilities or abroad provided the Board gives prior approval.

Constant-attendance allowance: 25% of the amount of the disablement benefit for 100% disability, as per Section 21 of the Act and Section 45 of the Benefits Regulations.

Funeral grant: $1,500.

F. Non-Contributory Pensions

As from age 65 females, and age 67 males (as of December 2007), and meeting the conditions to qualify for pensions. The monthly amount of $100 increased from $75, as of November 2007.

ANNEX F
GLOSSARY OF TERMS

Adapted from the ILO/ISSA publication "Actuarial Practice in Social Security", Plamondon, Drouin, Pérez Montás, etc. (2002)

Assessment of Constituent Capitals

A financial system applied to employment injury (EI) benefits under which the annual cost of the scheme is determined as the present value of all future payments relative to pensions awarded during that year. Under that system, a reserve is continuously maintained equal to the present value of pensions in payment. This is sometimes designated as "the terminal funding" system of finance.

Defined-benefit scheme

A scheme under which the benefit is a defined amount, which depends on the number of contributions or insurance years and the number of insurable earnings.

Defined-contribution scheme

A pension plan under which contributions are paid to an "individual account" for each participant. The retirement pension is "undefined" and is dependent on the capitalized balance and the value of annuities at retirement, usually through for-profit entities (financial institutions or insurance companies).

Financial system

The systematic arrangement for raising the resources necessary to meet the financial obligations of a scheme. This is an expression often used to refer to the selected method of financing long-term pensions under a defined-benefit scheme (pay-as-you-go, partial funding, or full funding).

Level or average premium

A financial system based on a theoretical constant contribution rate that can be applied indefinitely or for the projection period. It is calculated by equating the present value of projected future contributions of active insured persons and new entrants, plus the value of existing reserves, to the present value of the projected future benefit and administration expenses.

Pay-as-you-go rate (PAYG)

The ratio of the total expenditure of a scheme to the sum of insurable earnings of that scheme. The PAYG financial system is usually applied to short-term benefits.

Period of equilibrium

As stated below in the "scaled premium system", in actuarial valuations of a national pension scheme, the period of equilibrium measures the number of years when reserves will be increasing. At the end of the period of equilibrium, income from contributions and investments equal benefits and administrative expenditure, according to the actuarial assumptions. Without an adjustment to the contribution rate, assets will need to be liquidated to pay current expenditure, and reserves will begin to decrease.

Scaled premium system

A financial system for pensions under which contribution rates are increased throughout the life cycle of a pension scheme on a step-by-step basis (where the duration of each individual "step" is called the "**period of equilibrium")**. In a more narrow definition, the contribution rate is calculated for a defined period of years, that is, a "period of equilibrium" (which often ranges from ten to 25 years), with the objective of equating, at the end of the period of equilibrium, the income from contributions and the investment income to the expenditure on benefits and administration.

State Plan

A term used in accounting standards for a pension plan sponsored by a State or Government on a not-for-profit basis, and therefore with indefinite duration, as opposed to pension plans sponsored by an enterprise that can become insolvent if the enterprise fails.

Terminal funding

A financial system under which a premium equal to the present value of a pension is paid at the time the pension starts. The premium is set aside as a reserve to guarantee future benefit payments.