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Social Security Board

Actuarial Performance Analysis of the Social Security Scheme (At 31 December 2018)

17 June 2019

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(AT 31 DECEMBER 2018)

EXECUTIVE SUMMARY

The 2018 actuarial performance analysis confirms the urgent need to implement the proposed financial amendments by mid-2019 to ensure the sustainability of the scheme. Otherwise, the consolidated reserves might start to decline, requiring the liquidation of investments to pay benefits. Preliminary financial data as of 31 December 2018 shows that the maturity process of the scheme continues unabated, despite significant managerial and operational improvements.

The reallocation of the contribution rate, in accordance with the inherent actuarial costs, avoids the steady erosion of the Short-term branch contingency reserve, should generate as from 2019 a gradual restoration of an adequate balance of reserves of the EI branch and strengthen the inflow of Long-term branch (LTB) contributions to stem the decline of the actuarial reserves, but extends the Period of Equilibrium of the LTB only until the end of 2020, due to the impact of the reallocation of the contribution rates.

The report shows two crucial events in 2018: a reduction of the un-restated consolidated reserves to $524 million at 31 December 2018, and total expenditure of the Long-Term branch exceeding total income for the first time since the inception of the scheme, with a temporary reversal expected as from 2019, due to the redistribution of the contribution rates early in 2019, indicative of the urgency to amend the financing provisions.

Scenario I * agreed with by the Board and the representatives of the Unions and the Employers establish a phased implementation of the ceiling more in accordance with actual earnings, thus improving the **adequacy** of the scheme, as well as the crucial adjustment to the rate of contributions, ensuring the medium term **actuarial sustainability** of the scheme by generating a modest extension of the Period of Equilibrium of the long-term branch until 2024.

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*Phased increase of the rate of contribution and the ceiling, reaching a 10% rate of contributions and a $520 ceiling as from 2021.

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Failure to approve legal amendments in accordance with Scenario I will result in a decapitalization of the long-term branch and the short term branch, as well as necessitate greater increases than is currently supported by the social partners.

A second phase of amendments to be carried out as from 2021 is required to ensure a more extensive horizon of actuarial sustainability, including an automatic trigger mechanism of the ceiling and the rate of contribution, and updating the eligibility provisions, the pension formula and the retirement age, as well as critical issues to be dealt with as part of the on-going agenda to modernize the social security scheme of Belize.

The actuarial analysis to be carried out as at 31 December 2019 will assess the period of equilibrium of the long-term branch and the long-term sustainability of the other branches, based on legal provisions in force at the end of this year. The triennial actuarial valuation as at 31 December 2020 should include 50-year actuarial projections of the long-term branch, to assist with the trigger mechanism (dynamic approach) requested by the stakeholders.

Yours sincerely,

Hernando Perez Montas
Actuary

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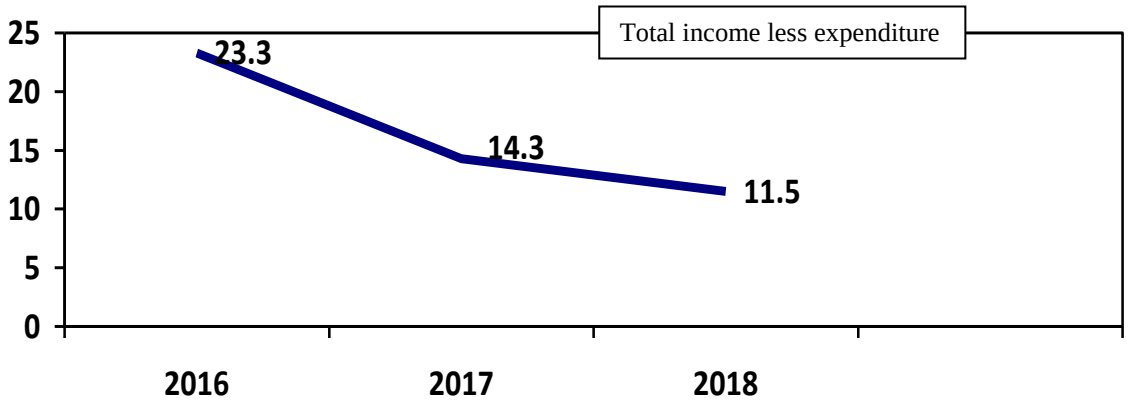
I

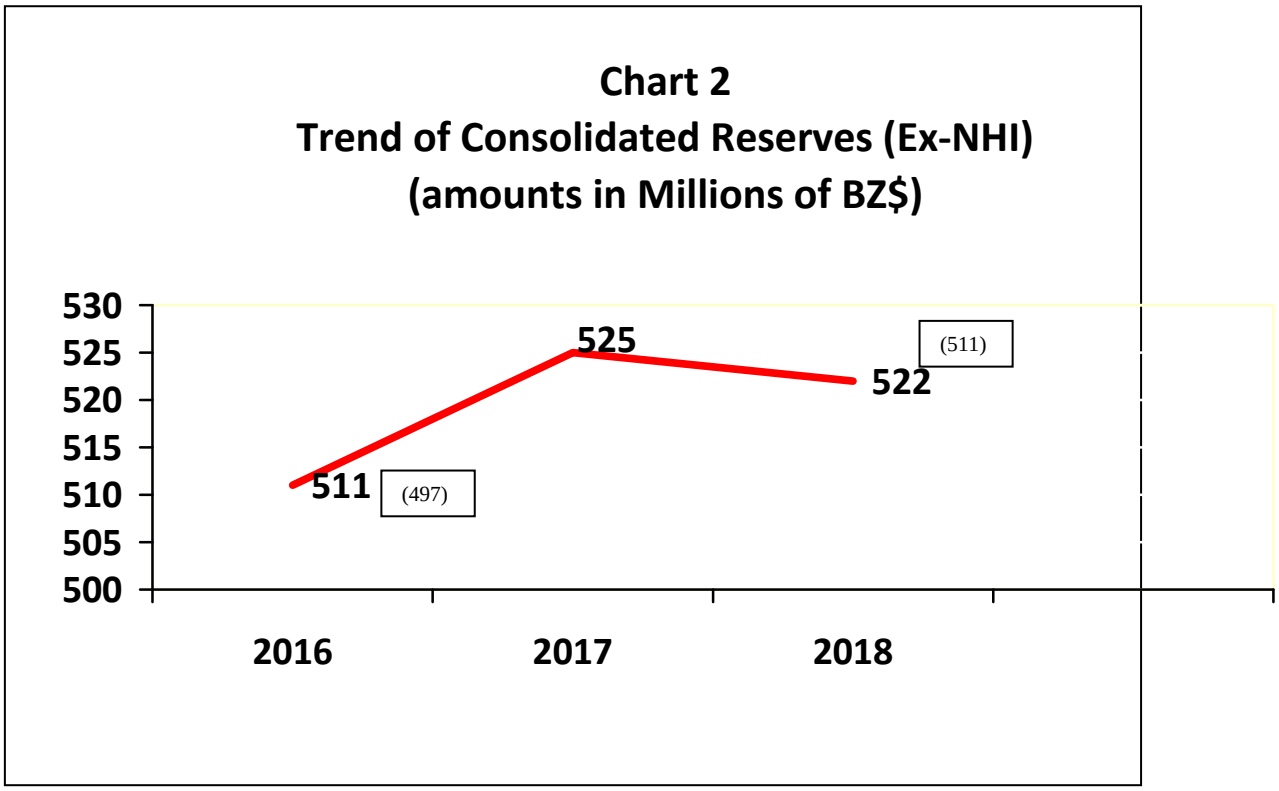
CONCLUSIONS AND RECOMMENDATIONS

1. Consolidated Financial Trends (2018)

Contribution income increased by a satisfactory 5.37% rate, while benefit expenditure rose by 5.17% and administrative expenses declined approximately 1.6%. At 7.3% reduction of investment income caused a reduction of net income to $11.5 million (Chart 1), and a minor variation of consolidated reserves from $525 to $522 million (Chart 2), before a restatement of reserves due to BTL, confirming that the period of equilibrium will be reached in 2020. The deficit of "current operations" (contributions less expenditure) was equivalent to $9.5 million, with a 2019 projected deficit to be covered by over 100% of investment income, unless the proposed first set of amendments are implemented by mid-2019 (Tables 2 and 3, Chapter 2).

Chart 1
Consolidated Income less Expenditure (Ex-NHI)
(amounts in Millions of BZ$)





In parenthesis: Restated reserves

2. <u>Amendments to the Regulations (Gazetted 12 January 2019)</u>

Amendments to the Regulations submitted by the Board were approved by the Minister responsible for Social Security early in 2019. Several of the amendments would have a minor incidence on the actuarial situation of the scheme, such as amendments to Non-Contributory Pensions and Claims and Payments Regulations. Amendments to three other provisions will have a specific incidence on the financial trends to the benefits branches. **However, only the increase in the ceiling and the rate of contributions, which are still pending as of the date of this report, would contribute to extending the Period of Equilibrium of the scheme. Key amendments are as follows, as from 12 January 2019:**

I. **Financial and Accounting Regulations: Redistributes the share of contributions by the branch,** as per actuarial recommendations.

II. **Restores the maximum pension of 60% of the average weekly insurable earnings,** excluding the 5% erroneous adjustments to new pensions.

III. **Provides for the payment of invalidity pensions for life** upon the attainment of 60 years of age.

IV. **Upgrades the qualifying conditions for pensions from 110 to 250 weekly contributions**.

3. Actuarial Incidence of the Amendments

The reallocation of the contribution rate among the benefits branches: i) will ensure the long-term sustainability of the Short-term branch, which had an allocation below the actuarial cost ratios, causing a steady decline of the **Contingency Reserve,** ii) contain the increase in excess reserves of the EI branch, and iii) strengthen the allocation of funds to the Long-term branch, which has been experiencing "current deficits" (contributions less expenditure) as from 2015, and actuarial deficits (total income less expenditure) as from 2018.

Specific details are as follows:

a) Short-Term Branch:

i. Maternity Benefit

No significant impact on the actuarial cost of maternity benefit can be envisaged, with actuarial rates rather stable in the period under review, despite an expected reduction of the fertility rates by the low-income segment of the population.

ii. Sickness Benefit

The cost of sickness benefit has been exceeding the statutory contribution rate since the 2001 amendments, which eliminated the waiting period and increased the benefit rate from two-thirds to 80% of earnings. The Board has therefore been obligated on two occasions to transfer excess reserves of the EI branch to restore the minimum level of reserves stipulated in Section 17 (1) of the financial regulation.

The increase of the actuarial rate from 1.54% to 1.80% of insurable earnings jointly with the incidence of potential amendments should contain the operational deficit and maintain the contingency reserve of the Short-term branch above the minimum level stated in the regulations.

If a waiting period of 2 or 3 days prior to the onset of payment by the scheme becomes effective, then the amended contribution rate should not only ensure the long-term financial equilibrium of the branch but also reduce the cost of administration, which has been impacted by the high proportion of claims lasting less than 3 days.

The increase in the ceiling should also contribute to a slight reduction in the actuarial cost, due to potentially lower rates of claims by insured persons exceeding the present ceiling of $320 per week.

b) Employment Injury Branch

The adjustment to the contribution rate to 1.00% of insurable earnings (12.50% of contribution income), should contain the steady increase of excess reserves, which should start decreasing gradually due to operational expenses higher than total contributions, which would be partially offset by investment income on the excess reserves. Transfers of excess reserves to the other branches would then not be required in the near future.

The EI branch reserve is projected to decline steadily to a level compatible with: i) the **contingency reserve** of the short-term benefits of the branch, and ii) the **terminal reserve** of the disability and death pensions in force.

c) Long-term Branch

The substantial increase in the statutory contributions to the Long-term branch should **temporarily contain the decapitalization of the actuarial reserves**, precisely when the cost of pensions in payment would be increasing at a significant pace, as rising cohorts of insured persons become entitled to retirement pensions. Unless the first tranche of financial amendments become effective soon, the actuarial sustainability of the long-term branch would become seriously compromised, despite the higher statutory allocation of the share of contribution income.

d) Non-Contributory Pension Scheme (NCP)

The actuarial cost of the NCP has been declining steadily, due to the joint incidence of the mortality of pensioners and more stringent eligibility requirements imposed by the NCP Committee. Once the entire contribution rate of 10% of insurable earnings becomes effective, of which 7.20% would be allocated to the long-term branch, then the NCP cost would be equivalent to only a non-material fraction of the contribution income, and decline further if the female eligibility age is equivalent to that of males (67 years, as recommended by the actuary).

4. Pending Amendments to the Regulations and Incidence on the Actuarial Trends

As of the date of the draft report, critical financial amendments to the ceiling and the rate of contributions (Scenario I) have yet to be implemented.

The social partners have issued supportive statements recognizing the urgent need of the SSB to update the obsolete financial bases, recognizing the critical actuarial juncture of the scheme after stagnant legal provisions which have become seriously outdated after amendments to the financing structure that took place eighteen years ago.

It is also noted that the phased amendments to the financing provisions would have a minimum impact on labour cost to employers, ensuring the medium-term **sustainability** of the scheme, and restoring the **adequacy** of the benefits provisions to more than 100,000 insured persons and their dependents, with a positive impact on 85% of the population of Belize.

Once the Governments ratifies the long-overdue first phase of legal amendments, updating the entire spectrum of the benefit and financing bases of the scheme, the positive incidence would be reflected on the statutory actuarial medium-term actuarial projections to be submitted for consideration by the Board as of the close of 2019.

Due to the material actuarial incidence of the pending financial amendments (Scenario I), the actuarial trends are subject to significant variability depending on the specific date of implementation. Postponement on the implementation date, estimated as at 1 July 2019, would have a negative impact on the actuarial forecasts.

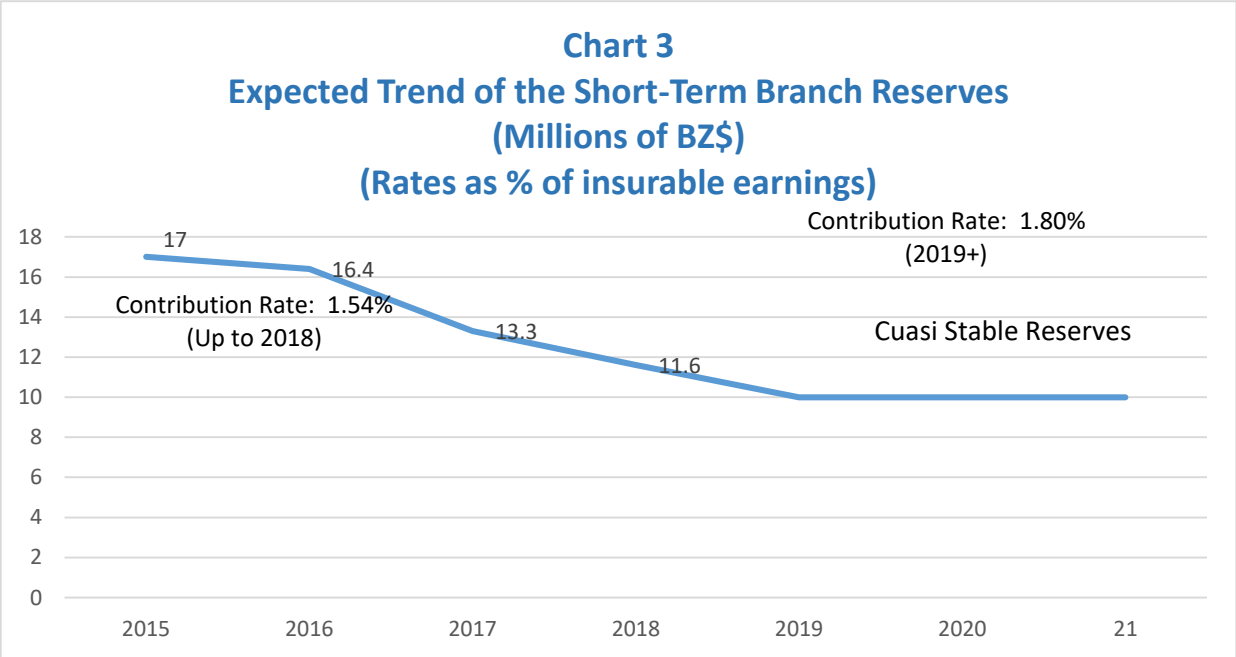
Once the implementation date is known, the cost estimates of the Long-term branch would need to be adjusted at the next performance assessment on 31 December 2019. The adjustment to the contribution rates would not modify the funding allocation to the Short-term and the EI branch, as actuarial income from the increase in the ceiling would be partially offset by an increase

5. Actuarial Trend of the Short-Term Branch

Preliminary financial data as of 31 December 2018 shows that the maturity process of the SSB continues unabated, despite significant managerial and operational improvements, with a steady reduction of the consolidated reserves.

Due to the allocation of contribution lower than required, the branch experienced a deficit of $1.218 million in 2018, lower than in 2017 ($3.057 million), due to a reduction of sickness claims. The deficit caused a year-end reduction of reserves (Chart 3) to $11.617 million ($13.278 million in 2017), but still in excess of the minimum ratio stipulated in Section 17 (1) of the Financial Regulations, as shown in Tables 13 and 15 of the report.

The reallocation of the contribution rate assigned to the branch should contribute, jointly with investment income of the contingency reserve, stabilize the ratio of contributions and benefits, ensuring the long-term financial sustainability of the branch, with reserves exceeding the statutory provisions.



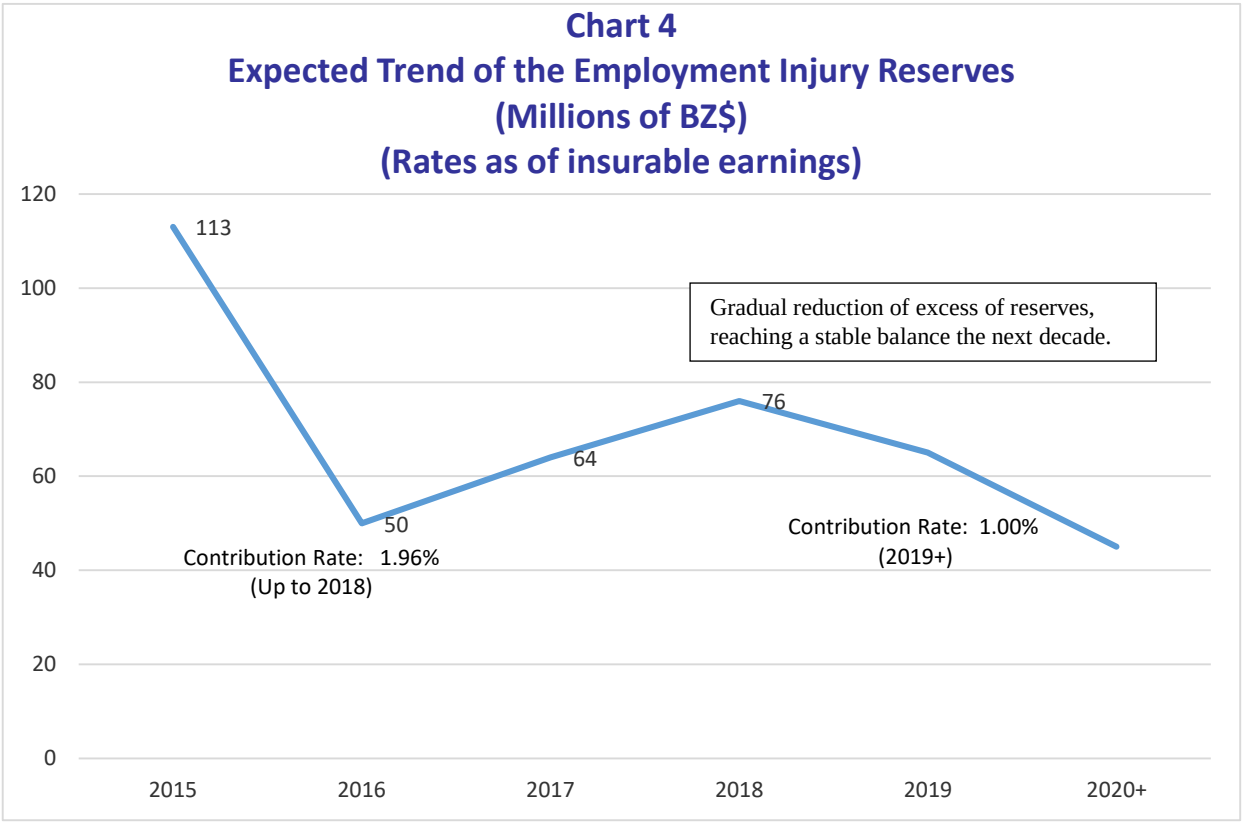
6. Actuarial Trend of the Employment Injury Branch (EI)

The employment injury branch (Short-Term benefits) operates under the same actuarial model as the short-term branch, while the Disablement & Death pensions operate under the Terminal Reserve method, with reserves equal to the present value of pensions in force.

The EI branch continues to experience actuarial cost lower than the rate of contributions assigned to the branch, yielding an operating surplus of $16.8 million in 2018, and an increase in reserves to $78.266 million at year-end, in excess of the actuarial requirements (Chart 4).

As from 2019, the financial allocation to the branch will decline from 24.5% of contributions to only 12.5% of contributions, the latter equivalent to a rate of 1% of insurable earnings. Jointly with interest income on the excess reserves, a gradual reduction of the contingency reserves might be expected medium term, ensuring the long-term actuarial sustainability of the branch. As shown in the report, the consolidated assessment of the actuarial obligations shows a positive balance of $52.7 million (Table 35), with the surplus of the Short-term EI benefits compensating the deficit of the Disablement & Death actuarial obligations. The reallocation of the contribution rate should cause a gradual reduction of the excess reserve to a stable level in approximately 10 years, but due to the fluctuation of Disablement and Death cases, the financial trend of the EI branch will be subject to a certain degree of volatility.

The allocation to the Social Developments funds will diminish temporarily, due to the reduction of the contribution rate, resuming an upward trend once the ceiling and the rate of contributions are adjusted.



7. Actuarial Trend of the Long-Term Branch

a) 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 a level such 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".

b) Financial Operations

The long-term branch accounts for three-quarter of benefit expenditure and operates under the scaled-premium system of finance, wherein contributions should increase gradually to ensure a gradual capitalization of reserves. Net income has been decreasing steadily and, for the first time since the inception of the scheme, total income was lower than total expenditure, yielding a negative balance at 31 December 2018 (versus a surplus in 2017). Legal amendments effective 12 January 2019 increased the allocation to the branch to 65% of contributions (a rate of 5.20% of insurable earnings), which is projected to increase gradually by an additional 2% in 2021, reaching an allocation to the branch of 7.20% of insurable earnings, positioning the branch for a

steady accumulation of reserves for 5 to 6 additional years, assuming amendments become effective by mid-2019.

The analysis shows a steady increase in benefits expense, yielding a current deficit (contribution less expenditure) of $19 million in 2018, a gap covered by 100% of investment income, yielding a net deficit of $2.4 million in 2018 versus a surplus of $2.9 million in 2017 (Table 36). **The 2018 increase in benefits was focused basically on retirement benefits, due to the dual impact of a 5% pension adjustments as from April 2017, and an acceleration in the number of early retirement pensions at ages 60 to 64 years, including the self-employed.**

The sharp decline in the actuarial situation on the Long-term branch should be addressed in 2019 by adjusting the contribution rate allocated to the branch, increasing the ceiling on contributions, and restricting the option of self-employed persons to opt for early retirement.

The analysis shows that the increased allocation to the branch would reduce the "current deficit" from 1.75% of insurable earnings in 2018 to 0.48% in 2019, and to only 0.10% if scenario 1 become effective as from 1 July 2019, as shown in Table 44.

c) Summary of the Trend of Reserves

Table 45 shows that the allocation of the contribution rates to 5.20% of insurable earnings suspends the decline of the actuarial reserve, yielding a modest increase to $421 million in 2019 (Option A).

Option B assumes that if the implementation of Scenario 1 takes place as from 1 July 2019, yielding additional income to the branch, an additional increase in reserves at the close of 2019 should be anticipated, assuming that investment income performs as anticipated.

8. Investments

The reallocation of the contribution rates among the benefit branches as from 12 January 2019 will not have any incidence on the ability of the scheme to diversify the investment portfolio, an asset would decline until the ceiling and the rates of contribution become effective, albeit at a rather modest pace due to the gradual adjustment of these critical parameters, rather than as envisaged in the preceding actuarial valuation.

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.

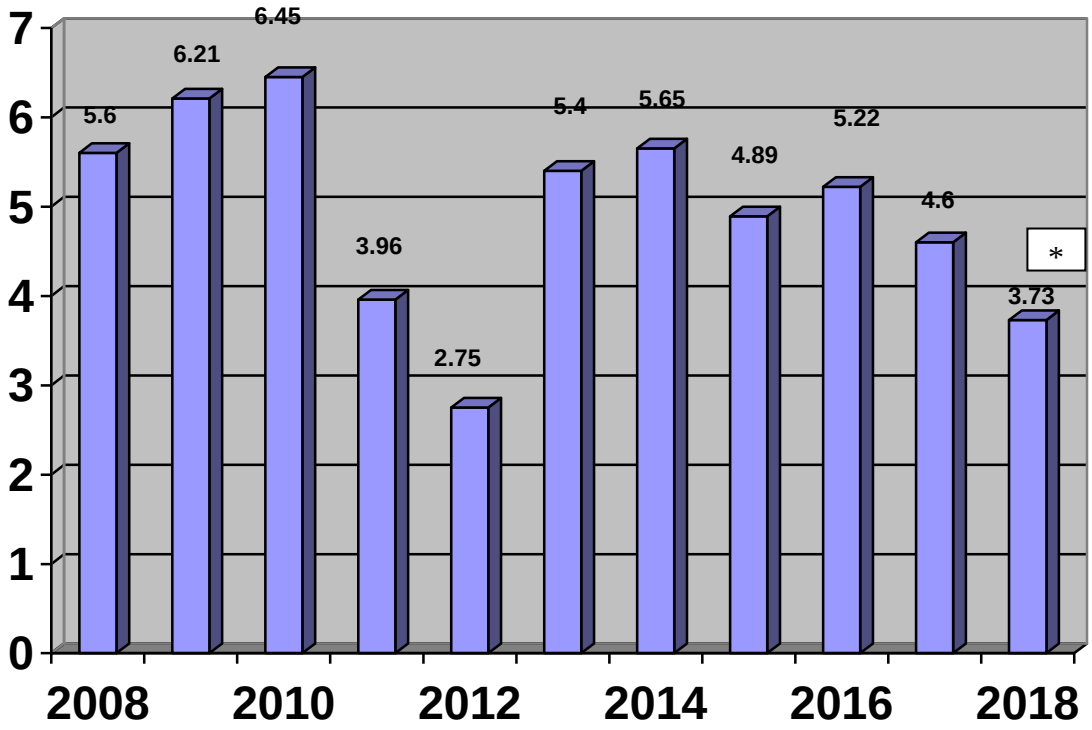
The analysis shows that a diversification of the investment portfolio seems advisable, with fresh funds targeted to alternative investments, preceded by **i) a sound risk/reward assessment, ii) a favorable anticipated risk-adjusted return, and iii) a careful evaluation of the collateral funds, to ensure a full recovery of the unamortized portion of the investment in case of default. Scenarios of risk-adjustment returns are shown in the report.**

The report shows an analysis of the investment portfolio, as required by the Third Schedule of the Act, Section 17, and an Appendix, with a Sectoral Analysis and the feasibility of asset allocation to "development projects", with decreasing rates of return in 2018 (Chart 5). **The attainment of these goals is subject to the implementation of the long overdue set of legal amendments**.

Chart 5

Consolidated Nominal Rates of Return on Investments

(in percent)



* Impacted by BTL's restatements.

9. **Self-Employed Scheme**

The analysis shows that the financial performance of the self-employed scheme has been negative, **due to faulty design, including the voluntary feature of the scheme**, which is conducive to **adverse selection** of individuals with a higher risk for short-term benefits and who can qualify for a minimum age pension with a low number of contributions, negatively impacting the actuarial situation of the SSB, and 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" as self-employed; requiring a higher number of self-employed contributions to qualify for pensions, eliminating the window of early retirement and establishing "compliance" standards once they become voluntarily insured.**

Most of the pensioners have opted to claim pensions before the statutory age of 65 years, with the SSB is unable to verify whether the individuals continue to work, in the absence of an employer. Substantial actuarial deficits are emerging, to be subsidized by employers and employees in the general scheme, affecting negatively the financial situation of the long-term branch. The actuarial assessment shows actuarial costs twice the statutory contributions of 7% of insurable earnings.

10. Non-Contributory Pension Scheme

The payment of Non-Contributory Pensions (NCP) was transferred from the Ministry of Social Services to the SSB in July 2003.

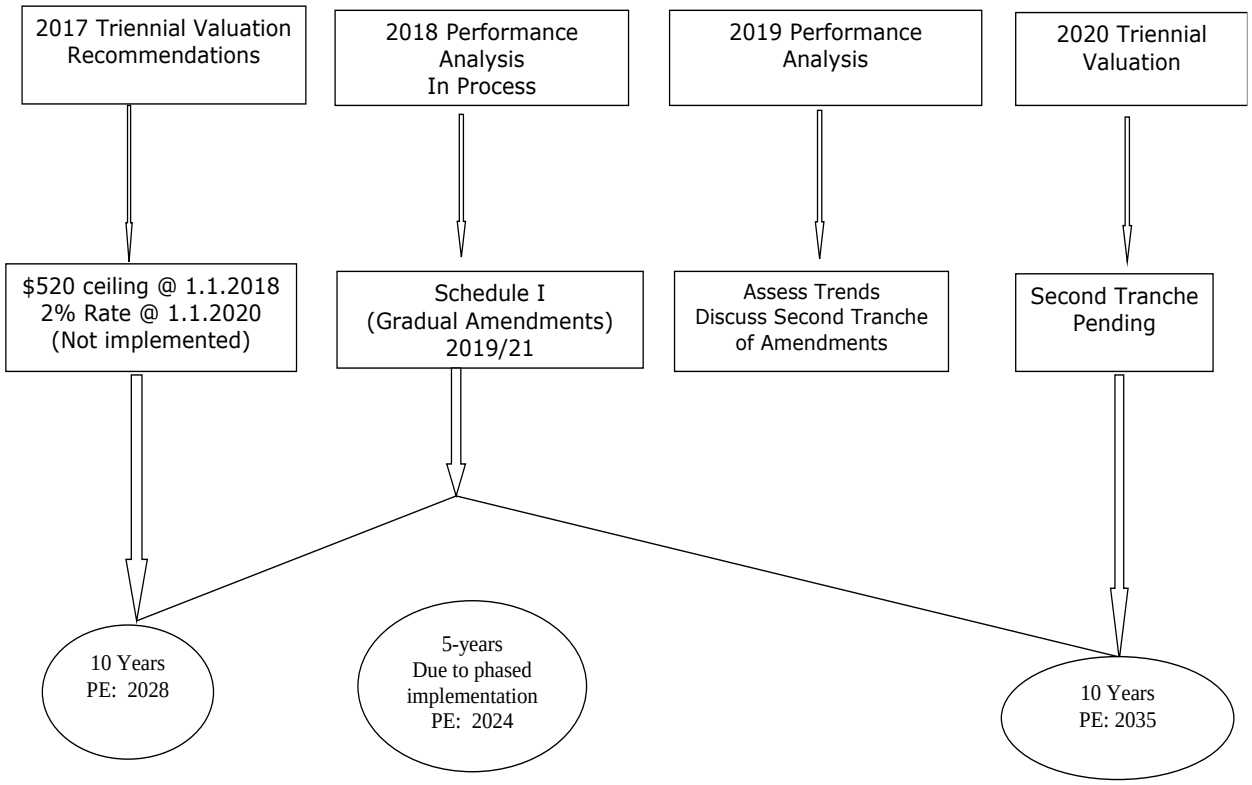
In December 2007, the Government decided to add eligible males as beneficiaries of NCP and increased the payment to $100 per month, which caused a significant increase in the number of beneficiaries and benefit expenditure.

The total number of NCPs has declined steadily from a peak of 4,934 early in 2008 pensions in payment in December 2018. The mortality of pensioners and more thorough evaluation procedures contributed to offset the abnormal surge of pensions awarded during the initial phase of operations.

Assuming a restricted pace of revaluation of pensions in payment, jointly with a long-delayed adjustment to the ceiling of insurable earnings, the updated long-term trend for shows actuarial costs of 0.18% of insurable earnings. Raising the initial eligibility age to 67 years for females would reduce further the actuarial cost.

The actuary concurs with the recommendation of the NCP Committee to increase to 67 years the minimum entitlement age of females, in accordance with international guidelines, setting the eligibility age two years higher than the SSB normal retirement age; to increase to 20 years the residency requirement for naturalized residents; to allow only one NCP to spouses or persons in the same household, and the non-entitlement to a NCP if the individual has opted for the SSB grant.

Chart 6
SSB Actuarial Scenarios



II

LEGAL BASES AND CONSOLIDATED FINANCIAL OPERATIONS

1. Legal Bases, Coverage and Benefit Provisions

The social protection system in Belize, as regards to cash benefits, is composed of the national social security scheme administered by the Social Security Board (SSB), as the first pillar of pension protection, the Civil Service Pension Scheme and a limited number of complementary pension schemes, as a second pillar. The SSB operates a "defined benefit" and contributory scheme funded on a bipartite basis by employers and employees, whereas the Government system is non-contributory and unfunded, with payments made from current revenues. The remaining complementary schemes are usually funded on a bipartite basis. No individual retirement provisions (IRA) with tax incentives are presently envisaged as a third voluntary pillar of pension protection. The adequate planning of social protection should take into consideration these arrangements for an adequate and sustainable design of the pension system in Belize, although the present report deals exclusively with the national social security scheme administered by the SSB.

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, including a National Health Insurance Scheme, the outdated ceiling on contributions were amended, as described below. On 1 January 2003, a voluntary self-employed scheme was introduced; in May 2003, non-contributory pensions to eligible females were introduced, and on 1 July 2003, the rate of contribution was increased from 7% to 8% of insurable earnings, to strengthen the actuarial situation of the long-term branch. Late in 2007 non-contributory pensions for males as from 67 years of age were introduced and the amount of non-contributory pensions were increased to $100 per month, affecting negatively on the actuarial situation of the long-term branch. Also, a Third Schedule regulating the Investment Framework, as recommended by the Actuary, was annexed to the Act in 2007.

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 prior to retirement. However, the minimum pension increased from $47 per week to $49.35 per week as from April 2016 and represents a rather high percentage of the salary for low income or low-density workers.

The scheme covers all employed persons from 14 to 64 years of age, with specified exceptions such as domestic workers working less than 8 hours per week, persons in the military service and elected officials. Employed persons 65 years and over are covered only against employment injury. A summary of the benefit provisions is shown in Appendix A. Effective 1 January 2009, the distribution of contributions by branch was amended as shown below. A further adjustment is required as from 2015, apportioning to the short-term branch a higher level of contributions, to allow the recapitalization of the branch, and to strengthen the financial bases of the long-term branch.

Further, as from 2009, allocations to the Social Development Fund have been charged to the Employment Injury Branch, but a limit should be stipulated in the Regulations, such as 0.10% of insurable earnings.

2. Financial Bases

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. Medical care for employment injury was provided only in government installations but as from September 1999, private medical facilities have been integrated into the available options, and at present, most of such care is dispensed by the private sector.

At present, the rate of contributions paid by employers and employees is 8% of insurable earnings (7% for the self-insured), up to a contributory ceiling of $320 per week, as follows:

Weekly earnings	Employee	Employer	Total
	(as % of insurable earnings)		
Up to $139.99	1.50%	6.50%	8.00%
$140/320	1.97% to 2.95%	5.63% to 5.02%	8.00%

If the insured person is over 65 years, the employer pays only $2.60 per week only for employment injury benefits, **a rate that should be adjusted due to the high cost of medical treatment of 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.

The original contribution ceiling of $130 per week has been increased only once, in 2001, when the ceiling was raised to $320 per week, and the skewed original bipartite contribution schedule (6:1 the employer/employee) was reset at one-half each for earnings above $130 per week. However, low-income workers are eligible for a minimum pension of $47 per week and are still paying a minimum contribution of $0.83 per week.

The distribution by the branch is as follows:

Table 1
Distribution of Contributions by Benefit Branch
(in percent)

Branch	Gradual increase (as from 2021) Proposal [b/]	As from 2019	2009/2018
Short-term	18.0 (1.80)	22.50 (1.80)	19.25(1.54)
Employment injury	10.0 (1.00)	12.50 (1.00)	24.50(1.96)
Long-term	72.0 (7.20)	65.00 (5.20)	56.25(4.50)
Total	100% (10.00)	100% (8.00)	100% (8.00)

[a/] In parenthesis: Contribution Rates
[b/]Scenario I of financial amendments.

3. Actuarial Systems

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 trend would be covered by a "contingency" reserve. The reserve is established in the regulations as the six months average benefit expenditure in the last three years for the short-term branch, and 12 months of the same average for the employment injury branch.

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 "technical" reserve should theoretically be sufficient to meet the actuarial liabilities in respect of pensions in force. This method was recommended in the actuarial valuation carried out

prior to the inception of the scheme and should be retained, due to the distinct nature of short-term obligations and long-term disability pensions.

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.

4. Legal Amendments

Amendments to the Regulations submitted by the Board were approved by the Minister responsible for Social Security early in 2019. Several of the amendments would have a minor incidence on the actuarial situation of the scheme, such as amendments to Non-Contributory Pensions and Claims and Payments Regulations. Amendments to three other provisions will have a specific incidence on the financial trends to the benefits branches. **However, only the increase in the ceiling and the rate of contributions, which are still pending as of the date of this report, would contribute to extending the Period of Equilibrium of the scheme. Key amendments are as follows, as from 12 January 2019:**

I. **Financial and Accounting Regulations: Redistributes the share of contributions by the branch,** as per actuarial recommendations.

II. **Restores the maximum pension of 60% of the average weekly insurable earnings,** excluding the 5% erroneous adjustments to new pensions.

III. **Provides for the payment of invalidity pensions for life** upon the attainment of 60 years of age.

IV. **Upgrades the qualifying conditions for pensions from 110 to 250 weekly contributions**.

5. Pending Amendments

As of the date of the draft report, critical financial amendments to the ceiling and the rate of contributions (Scenario I) have yet to be implemented.

The social partners have issued supportive statements recognizing the urgent need of the SSB to update the obsolete financial bases, recognizing the critical actuarial juncture of the scheme after stagnant legal provisions which have become seriously outdated after amendments to the financing structure that took place eighteen years ago.

It is also noted that the phased amendments to the financing provisions would have a minimum impact on labour cost to employers, ensuring the medium-term **sustainability** of the scheme, and restoring the **adequacy** of the benefits provisions to more than 100,000 insured persons and their dependents, with a positive impact on 85% of the population of Belize.

Once the Governments ratifies the long-overdue first phase of legal amendments, updating the entire spectrum of the benefit and financing bases of the scheme, the positive incidence would be reflected on the statutory actuarial medium-term actuarial projections to be submitted for consideration by the Board as of the close of 2019.

Due to the material actuarial incidence of the pending financial amendments (Scenario I), the actuarial trends on 31 December 2019 are subject to significant variability depending on the specific date of implementation. Postponement on the implementation date, estimated as at 1 July 2019, would have a negative impact on the actuarial forecasts.

Once the implementation date is known, the cost estimates of the Long-term branch would need to be adjusted at the next performance assessment on 31 December 2019. The adjustment to the contribution rates would not modify the funding allocation to the Short-term and the EI branch, as actuarial income from the increase in the ceiling would be offset be a correlative increase in short-term benefits.

6. National Health Insurance Program

On the basis of recommendations of a National Health Sector Reform Committee, the Government amended the Social Security Act to include a new chapter in order to introduce a National Health Insurance Scheme (NHI). The Act was gazetted on 29 July 2000 but the financing regulations have yet to be implemented. On a transition basis, a focalized program at present is funded exclusively by Government transfers, although managed by the SSB. The program was focalized initially in two geographical areas (Belize City and Southern Belize) and is being expanded to the north Regions of Belize.

7. Income and Expenditure

Accounting standards and policies are set forth in Section 46 (1) of the Act and the report of the external auditors. Also, investment income is recorded on an accrual basis, and income from associates is accounted for by the equity method.

Table 2 shows the consolidated income and expenditure in the last four financial years, excluding NHI operations.

Table 2
Consolidated Statement of Income and Expenditure (ex-NHI Operations)
(Amounts in thousands of BZ$)

Income	2018	2017	2016
Contributions [1/]	87,043	82,611	80,092
Investment income	19,749	23,889	26,208
Other income [2/]	1,263	1,084	615
Total Income	108,055	107,584	106,915
Benefits			
Short-term branch	14,357	15,233	12,843
Long-term branch [3/]	54,032	49,859	45,082
Employment injury branch	5,755	5,410	5,920
Benefit Expenditure	74,144	70,502	63,845
Administrative and other expenses	22,415	22,792	19,739
Total expenditure	96,559	93,294	83,584
Net income	11,496	14,290	23,331
Contributions less expenditure	(9,516)	(10,683)	(3,492)

[1/] Excludes GOB contribution to the NHI Fund and NHI operations.
[2/]Includes interest on rental income, staff advances and surcharges for late contributions.
[3/] Includes non-contributory pensions.

8. Other Income

The rate of other income has fluctuated between 0.11% and 0.15% of insurable earnings, including interest on late contributions, and rental income. The income is distributed in equal parts among the three benefit branches, pursuant to the provisions of Section 14(3) of the Financial Regulations. The actuarial rate will be adjusted based on future valuations if higher compliance by employers tends to reduce the penalties for late contributions.

9. Balance Sheet and Reserves by Branch

Table 3 shows the balance sheet (unaudited).

Table 3
Balance Sheet of the Social Security Board (as at 31 December)
(Amounts in thousands of BZ$)

	2018	2017	2016
Cash and bank balance	35,934	30,943	29,345
Short-term investments	29,988	27,272	102,400
Long-term investments [a/]	416,106	428,201	345,144
Accounts receivable and others	28,391	26,114	19,870
Fixed & other assets (net)	27,685	28,043	25,638
Total assets	538,104	540,573	522,397
Liabilities and deferred income	(13,913)	(13,804)	(9,635)
Net reserves and special funds	524,191	526,769[b/]	512,762[c/]

[a/]Includes investments in Associates and loans.
[b/]Restated to $512,948
[c/]Restated to $498,941

The percent distribution of the investment portfolio is as follows:

Table 4
Percent Distribution of the Investment

	2018	2017	2016
Short-term & other	22.7	25.1	33.9
Associates	35.9	34.3	29.7
Long-term	41.4	40.6	36.4
Total	100%	100%	100%

As to the distribution of reserves by branch, Table 5 shows an increase in both Long-term branch and EI branch reserves, the latter exceeding accepted benchmarks, whereas the Disablement and Death reserve has remained relatively stable.

The Short-term branch reserves increased in 2014 due to a transfer of $18 million from the EI Reserves, restoring the balance above the statutory level of the six-month average benefit expenditure in the last three years, required by Section 17(1) of the Financial Regulations).

Table 5
Distribution of Reserves by Branch
(As at 31 December, in thousands of BZ$)

Benefit Branch	2018	2017	2016
Short-term	11,617	13,278	16,354
Long-term	417,178	431,200	428,315
Employment Injury	78,266	64,331	49,933
Disablement and Death	13,401	14,546	15,595
National Health Insurance Fund	2,543	2,206	1,960
Social Security Development Fund	2,176	1,502	1,094
Pension reserve [a/]	(990)	(294)	(489)
Total	524,191	526,769[b/]	512,762[c/]

[a/] As per the actuarial reviews
[b/]Restated to $512,498
[c/]Restated to $498,941

10. Reserves as a Percent of GDP

Table 6 shows the consolidated SSB reserves as a percent of GDP, slightly above 14% of GDP (current prices).

Table 6
SSB Reserves as Percent of Gross Domestic Product (GDP)

	2018	2017	2016
	(amounts in millions of BZ$)		
GDP [1/]	3,680[p/]	3,640	3,542
SSB Reserves	524	527	513
As % of GDP	14.2%	14.5%	14.5%

[1/]Current prices.
[p/]Provisional

11. Rate of Return on Investments

As shown in Table 7 the **Rate of Return on Assets (ROA)** has fluctuated significantly, with a triennial average of 4.5% of the real (inflation-adjusted) return.

Table 7
Rates of Return on Financial Investments (net assets)
(Amounts in millions of BZ$)

	2018	2017	2016
Net investment income	19,749	23,889	26,208
Nominal rate of return [1/]	3.73%	4.60%	5.22%
Average inflation rate	0.30%	1.10%	0.70%
Real return [2/]	3.41%	3.46%	4.49%

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

Due to the importance of the number of reserves and of the investment return, it is imperative that a strategy is 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, in conjunction with expert advice on investments, provide a platform for a long-term investment strategy as from 2017.

12. The integrity of the Reserves and Non-Performing Investments

The Board has strengthened compliance procedures with debtors and it is expected that the risk of potential losses on investment will be reduced gradually. In view of the above, the external auditors have strengthened the status of non-performing investments, to determine any material incidence on the actuarial reserves, yielding a substantial increase in the provision for losses on investment and providing the SSB with a more realistic picture of the financial situation of the scheme.

13. Administrative Expenditure

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. Table 8 shows the trend in the administrative expenditure of the basic scheme.

Table 8

Distribution of Administrative Expenditure (amounts in thousands of BZ$)

	2018	2017	2016
Total operating expenditure [1/]	22,415	22,791	19,739
Depreciation (administration)	(964)	(964)	(962)
Amortization (establishment)	(466)	(466)	(482)
Net operating expenses	20,985	21,361	18,295
Actuarial cost (total) [2/]	2.06%	2.20%	1.97%
Actuarial cost (net)[3/]	1.93%	2.06%	1.83%
Budget Performance Indicators			
as % of contributions	25.7%	27.6%	24.6%
as % of contributions + benefits	13.9%	14.8%	13.7%

[1/] Excluding NHI expenses
[2/] As percent of insurable earnings
[3/] Excluding depreciation / amortization
[p/] Projection, subject to adjustment

The bottom part of Table 8 shows the performance ratios of administrative expenditure, which are applicable for budgeting purposes, with a decline in the rate of administrative expenditure over the last two years, as compared to contributions and benefits.

The distribution by a branch of the total actuarial costs is shown in Table 9.

Table 9
Administrative Expenditure by Branch, as a percent of insurable earnings

	2018	2017	2016
Short-term branch	0.41%	0.47%	0.41%
EI branch	0.35%	0.36%	0.35%
Long-term branch	1.30%	1.37%	1.21%
Total	2.06%	2.20%	1.97%

[a/]Includes retroactive salary adjustments and restoration of contributions to the staff pension plan.

When the ceiling on contributions is updated, raising the level of insurable earnings, the relative cost of administrative expenditure should decline, but reaching a competitive level of similar social security schemes in Central America and the Caribbean requires additional cost-curtailment measures. Costs are not comparable, as the Belize scheme operates nine District Offices and two sub-offices, which is not the case in smaller schemes in the Caribbean. The workload arising from the waiver of the waiting period required additional clerical staff in order to process the increase in the number of sickness claims lasting less than three days.

14. Social Development Fund and Disaster Fund

Pursuant to the provisions of statutory instrument No. 60 (1990), 0.15% of insurable earnings of the short-term branch had been assigned to a Social Development Account, reducing the effective financing of short-term branch benefits. As from 2009, the financing of those funds has been transferred to the EI branch, as recommended by the actuary. As of 31 December, the accounts had the following balances:

Table 10

Reserves of the Social Development of Disaster Funds

	2018	2017	2016
		(Amounts in thousands of BZ$)	
Social Development Fund	625	201	43
Natural Disaster Fund	1,551	1,301	1,051
Total	2,176	1,502	1,094

As from 2019, the allocation would be reduced due to the lower rate assigned to the EI branch, based on legal provisions in force at 12 January 2019. Once the ceiling is adjusted, the allocation would start to increase gradually.

15. Trend of NHI Financials

The NHI financial trend is shown in Table 11.

Table 11

	2018	2017	2016
		(Amounts in thousands of BZ$)	
GOB contributions	17,600	17,000	17,000
Benefit expenses	(16,305)	(15,823)	(16,141)
Administrative expenditure	(958)	(931)	(778)
Surplus	337	246	81
Reserve	2,543	2,206	1,960
In benefit months [a/]	1.87	1.67	1.76

[a/]Minimum desirable reserve: 6 months benefit expenditure

16. Trend of Active Insured Persons and Insurable Earnings

The trend of insurable earnings is shown in Table 12.

Table 12

(Amounts in thousands of BZ$)

	2018[p/]	2017	2016
Insured persons	108,269	104,683	103,251
Contributions *	$87,043	$82,611	$80,092
Insurable earnings	$1,088.037	$1,032.637	$1,001.150
Average insurable earnings (per week)	$192	$190	$185

[p/]Provisional

III

ANALYSIS OF THE SHORT-TERM BENEFIT BRANCH

1. Financial Operations

Table 13 shows the financial operations of the short-term benefit branch. Total expenditure has consistently exceeded the total income. Reserves keep declining gradually but still exceeding standard benchmarks due to the transfer of $18 million of reserves from the EI branch in 2014, as shown below.

Table 13
Income and Expenditure of the Short-Term Benefits Branch
(Amounts in Thousands of Belize Dollars)

	2018	2017	2016
Contributions	16,756	15,903	15,417
Investment and other income	918	1,126	1,106
Total Income	17,674	17,029	16,523
Maternity allowances	4,013	3,604	3,268
Sickness benefits	9,348	10,658	8,620
Maternity grants	996	971	955
Total Benefits	14,357	15,233	12,843
Operational expenses	4,535	4,854	4,094
Total Expenditure	18,892	20,086	16,937
Income less Expenditure	(1,218)	(3,057)	(0.414)
Contingency Reserve	11,617[a/]	13,278[b/]	16,354[c/]

[a/]Steady decline would be suspended due to the higher contribution allocation as from 12 January 2019.
[b/]Restated to $14,123
[c/]Restated to $15,174

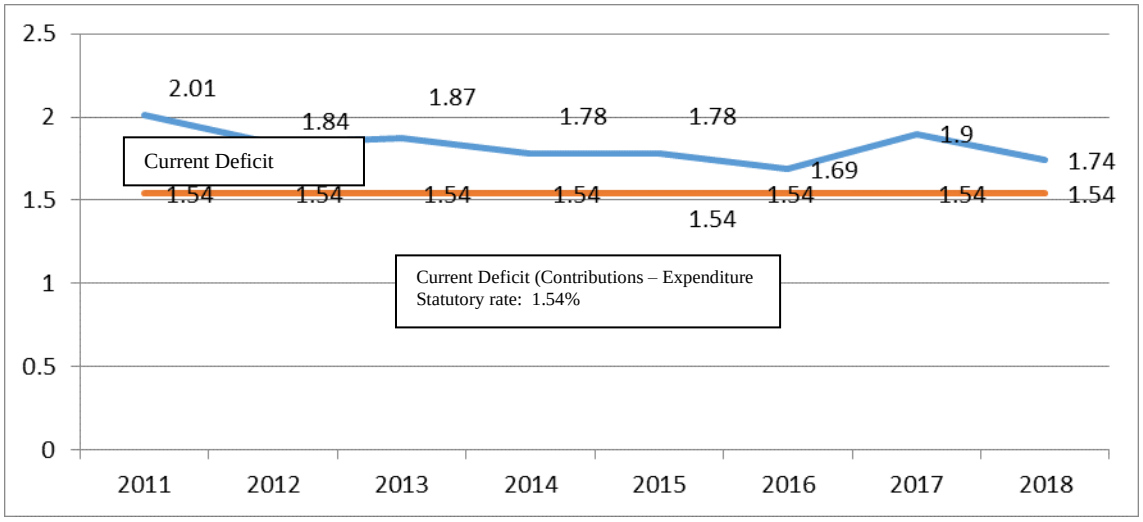
2. Income and Expenditure as a Percent of Insurable Earnings

Income and expenditure as a percentage of insurable earnings are shown in Table 14. Total cost (benefit and administrative expenditure) exceeds the contribution rate allocated to the branch. Investment income contributed to reducing the deficit, but as reserves have been declining, investment income also declined.

Table 14
Income and Expenditure of the Short-Term Branch as a Percent of Insurable Earnings

	2018	2017	2016
Contributions	1.540	1.540	1.540
Investment & other income	0.084	0.110	0.110
Total Income	1.624	1.650	1.650
Maternity allowances	0.368	0.346	0.326
Sickness benefits	0.860	1.007	0.861
Maternity grants	0.091	0.094	0.096
Total Benefits	1.319	1.447	1.283
Operating expenses	0.046	0.465	0.409
Total Expenditure	1.736	1.914	1.692
Income less Expenditure	(0.112)	(0.263)	(0.042)

Actuarial Cost of the Short-Term Branch
(% of insurable earnings)



3. Cost and Fund Ratios

Section 17 (1) of the Financial Regulations set a minimum level of reserves equivalent to six months the average benefit expenditure in the last three years. As shown in Table 15, at the end of 2018 the reserve stands above the minimum stipulated in the regulations

Table 15
Statutory Minimum Level of Reserves (31 December)

	2018	2017	2016
	(amounts in thousands of BZ$)		
Minimum statutory reserve [1/]	7,072	6,878	6,338
Actuarial reserve [2/]	11,657	13,278	16,354
Reserve ratio (actual / minimum)	1.65	1.93	2.58

[1/] Six months average benefit expenditure in the last three years.
[2/]Includes a $15 million transfer from the EI reserves in 2009 and $18 million in 2014.

Table 16 shows the cost and funding ratios of the short-term branch, with all cost ratios increasing in 2017, the following summary:

a) **The ratio of benefits divided by contributions,** an 87% average in the last three years.

b) **The Cost Ratios (expenditure divided by contributions and total income) are higher than one, meaning sustainable "current deficits".** Even including investment income still yields sustainable deficits.

c) The Fund Ratio shows a steady decline, and on 31 December 2018 was equivalent to 0.62 or 7.4-month' expenditure, slightly above the internationally accepted minimum of six months' total expenditure.

d) The transfer of reserves in 2014 restored the reserve position above the minimum state in the regulations, but in the absence of an increase to the share of contributions, the reserves had been declining gradually and would have fallen with change as from 2019 due to the reallocation ratios below the statutory minimum medium term.

Table 16
Cost and Fund Ratios of the Short-Term Branch

	2018	2017	2016
Benefits ÷ contributions	0.86	0.93	0.83
Total expenditure ÷ contributions	1.13	1.24	1.10
Total expenditure ÷ total income	1.07	1.16	1.02
Fund Ratio [a/]	0.62	0.69	0.97

[a/] Reserve ÷ total expenditure in the year

4. Frequency and Unit Cost of Sickness Benefit

The analysis for the period under review shows (Table 17):

a) **The average duration of terminated sickness cases of 9.5 days**, higher than in the preceding two years.

b) **Average "morbidity rates"** (days paid per insured per year) of 3.08 days, with a moderate rising trend (all cases).

c) **Morbidity rates for females higher than for males**, a variation that deserves an in-depth analysis by the research section, to determine causalities and introduce cost reduction strategies.

d) **An average duration per new cases** in a calendar year of 10.13 days, and average days per insured of 3.08 days in 2018.

Table 17
Sickness Incidence of Terminate Cases

	2018	2017	2016
Insured Population			
Males	65,837	64,265	63,667
Females	42,432	40,418	39,584
Total Active Insured	108,629	104,683	103,251
Terminated Cases			
Cases	3,963	4,671	3,777
Days paid	37,721	34,565	17,572*
Average duration (days)	9.50	7.40	4.65
New cases	33,011	39,546	30,926
Days paid	334,685	351,391	268,421

*Abnormal variation

Table 18

Sex Differentials of Sickness Claims Granted (New Cases)

Granted New Cases	2018	2017
No. of Cases	33,011	39,546
No. of Days	334,685	351,391
Active Insured	108,629	104,683
Average days per case	10.13	8.88
Average cases per insured	0.30	0.38
Average days per insured [a/]	3.08	3.36
Cases / Insured		
Males	0.25	0.32
Females	0.39	0.46

[a/]Morbidity rate

5. Actuarial Cost of Sickness Benefit

Table 18 shows the actual and projected actuarial cost of sickness benefits with a 4-year average of 0.91% of insurable earnings. For the intermediate period 2019/20, a rate of 0.90% of insurable earnings has been assessed, taking into consideration that the anticipated increase in the ceiling would reduce the incidence of sickness claims.

Table 19

Average	Actual			
	2018	2017	2016	2015
Cases per 100 insured	0.30	0.38	0.30	0.31
Days per insured (Morbidity rate)	3.08	3.36	2.70	2.85
Cost per case	$283	$263	$278	$277
Cost per day	$28	$29	$31	$29
Cost per insured	$86	$99	$83	$88
Actuarial cost[a/]	0.86%	1.01%	0.86%	0.89%

[a/]As a percent of insurable earning.

6. The trend of Maternity Benefits

The rates of maternity allowances were as follows:

Table 20
Actuarial Cost of Maternity Benefits

	2018	2017	2016
Active contributors	108,629	104,683	103,251
Female contributors	42,432	40,418	39,584
Number of allowances paid	1,468	1,341	1,271
Number of grants paid	3,334	3,195	3,168
Allowance paid per 100 females	3.46	3.28	3.18
Grants paid per 100 females	3.49	4.43	3.30
Allowances by 100 average contributors	1.35	1.28	1.25
Grants per 100 average contributors	3.07	2.09	3.10

7. Actuarial Cost of Maternity Benefits and Grants

The cost of maternity allowances and grants has remained rather stable in the last three years, (Table 21). For the period 2015/17, the average cost was assessed at 0.50% of insurable earnings, while the actual rate of 0.45% is slightly lower.

Table 21
Actuarial Cost of Maternity Benefit

	2018	2017	2016
Actuarial cost (allowances)	0.37%	0.35%	0.33%
Actuarial cost (grants)	0.10%	0.09%	0.10%
Total	0.47%	0.44%	0.43%

The 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 estimate of 10% of the population over 60 years of age, as compared to 8% in 2002, a ratio that should be monitored periodically.

The sequential experience is shown in Table 22, showing a steady reduction of the actuarial cost due to lower fertility rates:

Table 22

Year	Allowances as % of Insurable earnings	Total
2015/17	0.35	0.45
2012/14	0.38	0.46
2009/11	0.43	0.56

For the actuarial valuation, the same rates as in the preceding year have been assessed, as shown below.

8. Actual versus Expected Experience and Projected Actuarial Cost

Table 22 shows a comparison between the actual and expected actuarial cost of the short-term branch benefits. The actuarial cost estimate for 2019 is assessed at 1.80%, assuming stable morbidity and fertility rates. No significant reductions should be expected until a waiting period, the ceiling of insurable earnings is updated, or until the former benefit, provisions are restored on a partial basis.

Table 23
Comparison between Actual and Expected Actuarial Cost of Benefits
(As % of insurable earnings)

	Projected	Actual
	2019/20	2017/18
Sickness allowance	0.90	0.91
Maternity allowance	0.35	0.35
Maternity grant	0.10	0.09
Total benefits	1.35	1.35
Administrative expenses	0.45	0.43
Total	1.80%	1.78%

10. Amendments to the Short-Term Branch (as from 2020)

a) Elimination of the Waiting Period

Statistics on sickness claims show that approximately 45% of the total lasted from one to three days, accounting for 13.6% of the total days paid and 14.4% of the amounts paid. Therefore, the elimination of the 3-day waiting period in the legal amendments enacted in 2001 has almost doubled the number of claims processed, generating a significant increase in the administrative workload, while increasing the SSB cost of sickness benefits. **Restoration of a waiting period will have no material incidence in the direct cost to employers, but it will reduce the SSB administrative cost.** Partial restoration of 2-days (lower than the usual 3-days in many CARICOM schemes) would be advisable as from 2020.

The morbidity rate (days paid per insured) should decrease by 25%, due to a high incidence of cases in the agricultural sector, usually prior to the conclusion of the harvesting season. **The high replacement ratio of 80% of the average insurable earnings, as compared to 60% to 70% in other schemes, also contributes to the high incidence and duration of sickness cases, particularly if the beneficiary is able to work in the informal sector as a self-employed without being detected by the SSB.**

The restoration of a waiting period and a benefit rate of 70% rather than 80% for sickness and maternity benefits would align the SSB legal provisions with other schemes, and reduce further the cost of the Short-Term branch. Restoration of the waiting period in 2022/23 would also contribute to reducing the workload involved in processing the number of claims and the cost of administration.

b) Incidence of Amendments to the Sickness Provisions

The application of the waiting period and a level replacement rate of 70% rather than 80% would reduce the actuarial cost is shown in Table 24.

Table 24

Alternative Cost of the Short Term Branch

	Percent of Insurable Earnings
Actuarial cost, present legal provisions	1.80[a/]
With a 2-days waiting period and a 70% rate	1.70
With a 3-days waiting period and a 70% rate	1.60

[a/]22.5% of contributions, declining to 18% with a 10% rate of contributions as from 2020.

IV
ANALYSIS OF THE EMPLOYMENT INJURY BRANCH

1. Financial Operations of the Employment Injury Branch

Table 25 shows the operations of the employment injury branch, which records as expenses the actuarial present value of disablement and survivor' pensions, in accordance with the actuarial method of "terminal reserves" or "assessment of constituent capital" applied to the scheme. The transfer of $80 million in 2016 to the long-term branch reduced the reserve to $49.9 million at 31 December 2016 but increased again to $76.5 million at 31 December 2018 due to the excessive contribution rate earmarked to the branch.

Table 25
Income and Expenditure of the Employment Injury Branch
(Amounts in thousands of BZ$ Dollars)

	2018	2017	2016
Contributions	21,326	20,240	19,623
Investment and other income	2,862	2,699	6,264
Total Income	24,188	22,939	25,887
Disablement grants	484	518	551
Employment injury (short-term)	2,348	2,468	2,569
Disablement benefits (actuarial value)	599	109	666
Death benefits (actuarial value)	223	212	25
Funeral grants	9	2	2
Total Benefits	3,663	3,309	3,813
Operating expenses	3,727	3,769	3,464
Total Expenditure	7,390	7,078	7,278
Income less Expenditure	16,798	15,860	18,609
Net Reserve (Short-term benefits)	78,266[b/]	64,330[c/]	49,933[a/] [d/]

[a/] Net of the $80 million transferred to the long-term branch in April 2016.
[b/] In excess of actuarial requirements. Lower allocation of contributions would suspend the anomalous increase in reserves as from 2019.
[c/] Restated to $62,978
[d/] Restated to $8,574

2. Income and Expenditure as a Percent of Insurable Earnings

Income and expenditure as a percentage of insurable earnings are shown in table 26. Total benefits in 2018 were equivalent to 0.34% of insurable earnings or (0.37% in 2017), yielding a substantial surplus, which confirms that the financing of the branch exceeds actuarial requirements.

Table 26

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

	2018	2017	2016
Contributions	1.960	1.960	1.960
Investment and other income	0.263	0.262	0.626
Total Income	2.223	2.222	2,586
Disablement grants	0.044	0.050	0.055
Employment injury (short-term)	0.216	0.240	0.256
Disablement benefits (actuarial value)	0.056	0.011	0.067
Death benefits (actuarial value)	0.020	0.020	0.003
Funeral grants	0.001	0.000	0.000
Total Benefits	0.337	0.321	0.381
Operating expenses	0.342	0.365	0.346
Total Expenditure	0.677	0.686	0.727
Income less Expenditure	1.546	1.274	1.859

3 Statutory and Actual Reserves

Reserves of employment injury benefits have evolved as shown in table 27. 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 21.7 times higher than the stipulated minimum, a clear indication that the contribution rate assigned to the branch exceeds the actuarial requirements.**

Table 27

Employment Injury Benefits Reserves

(Amounts in thousands of BZ$)

31 December	Reserve	Statutory Minimum	Multiple Minimum Reserve
2018	78,266	3,595	21.7
2017	64,330	3,736	17.2
2016	49,933[a/]	4,183	11.9
2015	112,738	4,322	26.1

[a/]Impact of $80 million transferred to the long-term branch

The minimum reserve as per international benchmark can be assessed at the average benefit expenditure in the preceding 12 months, or $7,390,000.

4. Incidence of Short-Term Injury Benefits

Table 28 shows the incidence and cost ratios of employment injury benefit.

Table 28
Incidence of Employment Injury Short-Term Benefit

	2018	2017	2016
Cases paid	1,746	1,781	1,842
Amount paid (in thousands)	$2,348	$2,468	$2,569
Active insured persons	108,629	104,683	103,251
Cases per 100 insured	1.61	1.70	1.79
Cost per case	$1,344	$1,385	$1,395
Cost per insured	$21.61	$23.64	$24.88
Actuarial cost (% of salaries)	0.216	0.240	0.256

The emerging trend shows that the anticipated incidence has been slightly lower to the actuarial expectations, as from in Table 29. For the next two years, a lower estimate is assessed, equivalent to 0.26**.**

Table 29
Actual and Expected Cost of Injury Benefits [a/]

	2018		
	Actual	Expected	2017
Cases per 100 insured	1.61	1.00	1.81
Actuarial cost (% of salaries)[a/]	0.22%	0.30%	0.27%

[a/]Excludes medical expenses

	Projected (2019/20)	Actual 2016/18
Employment Injury	0.30%	0.24%
Disablement Grants	0.05%	0.05%
Funeral Grant	0.01%	0.01%
Total	0.36%	0.30%

5. Financial Trend of the Disablement & Death Benefits

The sub-branch operates based on the actuarial funding method of “assessment of constituent capitals” or terminal reserves. Each year the actuarial present value (APV) of the cases occurring during the year is credited to the reserve of the sub-branch, jointly with the investment income earned by the reserve. The updated cumulative reserve should be sufficient to cover the cost of pensions in payment at the close of the year.

Table 30 shows the income, expenditure, reserve and the Fund Ratio of the Disablement and Death benefits. The Disablement and Death Reserve, is of a different nature, representing the amounts required to pay pensions in payment until the cessation

of payment due to death, recovery or termination of survivors' benefits, while the short-term branch contingency reserve is designed to cover adverse deviations in the experience.

Table 30

Income, Expenditure, and Reserves of Disablement & Death Benefits

	2018	2017	2016
APV disablement benefits	599,349	108,717	665,902
APV death benefits	222,682	211,772	25,139
Total APV	822,031	320,489	691,041
Net investment income	547,421	727,152	867,671
Total income	1,369,452	1,047,641	1,558,712
Expenditure			
Disablement pension	1,446,074	1,453,450	1,442,446
Death benefits	646,540	647,438	664,098
Total benefits	2,092,614	2,100,888	2,106,544
Excess of income over expenditures	(723,161)	(1,053,247)	(547,832)
Actuarial Reserve	13,400,713	14,541,268	15,594,510
		Key Indicators	
Actuarial cost (new cases) [a/]	0.08%	0.03%	0.07%
Fund Ratio Reserve ÷ benefit expenditure	6.41	6.92	7.38

[a/]APV of new cases ÷ insurable earnings

6. Incidence of Disablement and Death Benefits

Table 31 shows the rates of accidents per 1000 insured persons due to EI accidents. The incidence of accidents declined in 2017, according to preliminary data, but the cases of permanent incapacity rose.

Table 31

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	Death
2018	1,746	226	13	16.2	2.09	0.15
2017	1,781	165	12	17.1	1.59	0.12
2016	1,842	132	1	17.9	1.29	0.01
Average 2016/18	1,790	174	9	17.0	1.66	0.09

7. The trend of Pensions in Payment

The statistics shown in Table 32 indicate a gradual increase in pensions in payment.

Table 32

EI Pensions in Course of Payment

	2018	2017	2016
Disablement Pensions			
Number	478	472	469
Monthly amount	$115,123	$113,378	$110,963
Widows			
Number	86	86	84
Monthly amount	$39,667	$32,180	$30,671
Orphans			
Number	164	170	181
Monthly amount	$25,886	$27,461	$27,461

8. Medical Expenses

Medical expenses are budgeted as a separate item but are shown on a consolidated basis with employment injury benefits in the financial statements, as noted above. **It is recommended that the financial statements show injury cash benefits and medical expenses separately.**

9. Expected Cost of the EI Branch

The assessed actuarial cost for 2019/20 is equivalent to 1% of insurable earnings, which includes a safety factor to account for catastrophic cases causing substantial medical expenses.

Table 33

Actuarial Cost of the EI Branch

(As % of insurable earnings)

Benefit	2019/2020 Projected	2016/18 (Actual)
Employment Injury	0.40	0.30
Disablement & Death Benefits (APV)	0.10	0.06
Grants & Medical	0.10	0.06
Total Benefits	0.60	0.42
Administrative Expenditure	0.40	0.36
Total	1.00%	0.78%

10. Funded Status of the Disablement and Death Reserve

Direct analysis of the level of sufficiency of the Disablement and Death Reserve was performed at 31 December 2017 and extrapolated on 31 December 2018. The calculations were carried out according to the following bases.

Mortality Table: GAM-83

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: 4% (ad hoc pension adjustments)

Actuarial Reserve: $14.5 million (at 31 December 2017)

Table 34
Funded Status of the EI/Disablement & Death Reserve
(at 31 December)
(Amounts in millions of BZ$)

	2018	2017	2016
Present value of pensions in payments	31,540	31.661	30.661
Reserve	(13,414)	(14.541)	(15.595)
Net Liability	18,126	17.120	15.066

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.

Table 34 shows a consolidated assessment of the EI branch. The surplus reserves of short-term benefits, assessed at 17.2 times the statutory minimum, at 31.12.2017 compensates the deficit of the Disablement and Death Obligations, still yielding a consolidated surplus of $28.593 million at 31 December 2016.

Table 35
Consolidated Assessment of the Employment Injury Brand
(at 31 December 2018)

	Reserve	Actuarial Liabilities	Surplus (Deficit)
	(amounts in millions of BZ$)		
Short-term benefits	78,266	(7.390)	70,876
Disablement death benefits	13,401	(31,540)	(18,139)
Total (31.12.2018)	91,667	(38,930)	52.737
Total (31.12.2017)	78,884	39,113	39,751

11. Update of the EI Degree of Disablement Schedule

The Second Schedule of the Benefit Regulation 43 should be updated by the SSB. For example, Item 15 (loss of one thumb) stipulates a 30% degree of disablement, allowing the insured person to a minimum life pension of $47 per week, **and to continue in active employment.** However, Item 25 (loss of all toes of both feet) stipulates a 20 degree of disablement, allowing the insured person to only a lump-sum grant. For an insured person with average earnings of $55 per week, the minimum pension would be equivalent to 85% of the salary.

Measures are being implemented to avoid the payment of disablement pensions to individuals who return to work as self-employed, thus avoiding detection by the SSB compliance services.

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 36 shows the trend of benefit and administrative expenditure in the period under review. The analysis shows a steady increase in benefits expense, yielding a current deficit (contribution less expenditure) of $17.56 million in 2018, a gap requiring over 100% of investment income causing a minor decline in reserves.

The increase in benefits was focused basically on retirement benefits, due to the dual impact of a 5% pension adjustments as from April 2016, and an acceleration in the number of early retirement pensions at ages 60 to 64 years, including the self-employed.

The sharp decline in the actuarial surplus of the long-term branch should be addressed in 2019 by the adjusting the contribution rate allocated to the branch, increasing the ceiling on contributions, restricting the option of self-insured persons to opt for early retirement, and increasing gradually the rate of contributions.

Table 36
Income and Expenditure of the Long-Term Branch
(Amounts in thousands of Belize Dollars)

	2018	2017	2016
Contributions	48,962	46,468	45,052
Investment and other income	16,684	20,417	18,584
Total Income	65,646	66,885	63,636
Retirement benefits	39,405	35,453	31,085
Invalidity benefits	3,631	3,588	3,449
Survivors' benefits	7,627	7,160	6,782
Funeral Grants	1,361	1,361	1,262
Non-contributory pensions	2,009	2,297	2,505
Total Benefits	54,033	49,859	45,083
Operating Expenses	14,031	14,164	12,179
Total Expenditure	68,064	64,023	57,262
Contributions less expenditure (current deficit)	(19,102)	(17,555)	(12,210)
Income less Expenditure	(2,418)	2,862	6,374
Actuarial Reserve	417,178	431,199[a/]	428,315[b/]
Fund Ratio [1/]	6.1	6.7	7.5[2/]

[1/] Reserves ÷ total expenditure
[2/]Increase due to the transfer of $80 million from the EI reserve.
[a/]Restated to $419,595
[b/]Restated to $416,733

3. Income and Expenditure as a Percent of Insurable Earnings

Table 37 shows the financial experience as a percent of insurable earnings. Total benefits rose to 4.96% of insurable earnings, and total expenditure to 6.25% of insurable earnings, higher than the 4.5% rate allocated to the branch. The "current deficit" (contributions less expenditure) also increased, as anticipated, a trend that should be addressed by the legal amendments or pending implementation.

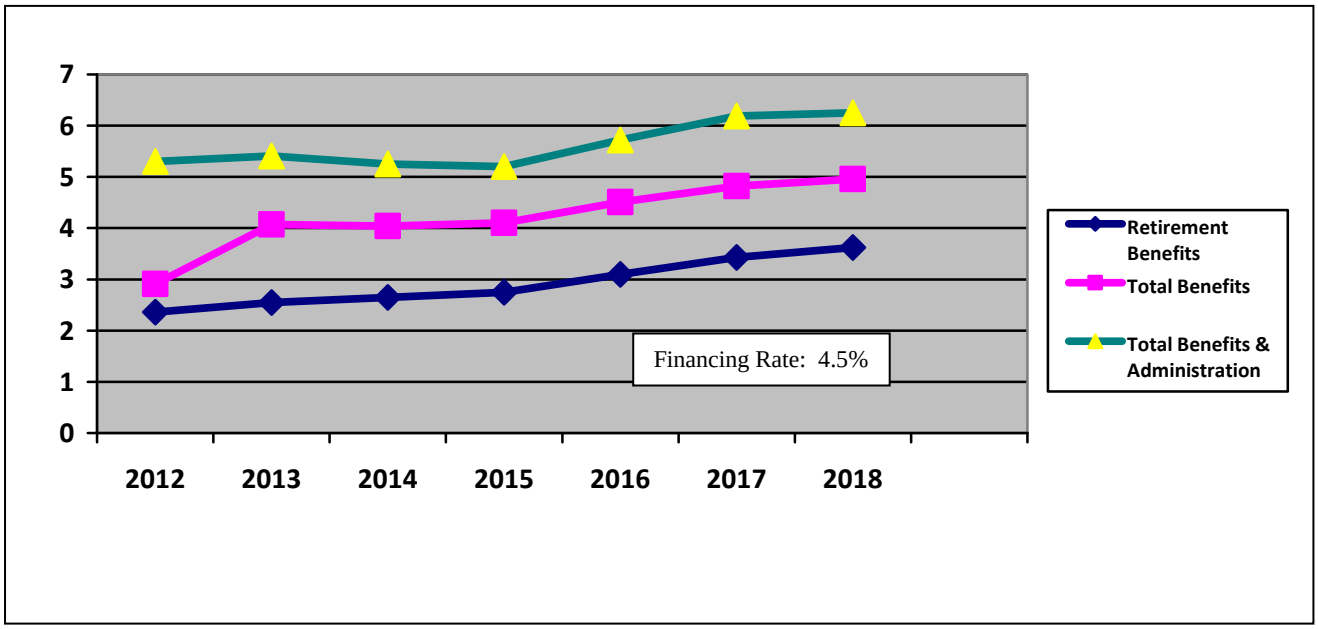
Table 37
Income and Expenditure as a Percent of Insurable Earnings

	2018	**2017**	**2016**
Contributions	4.50	4.50	4.50
Investment & other income	1.54	1.97	1.86
Total Income	6.04	6.47	6.36
Retirement benefits	3.62	3.43	3.10
Invalidity benefits	0.33	0.35	0.35
Survivors' benefits	0.70	0.69	0.68
Funeral Grants	0.12	0.13	0.13
Non-contributory pensions	0.19	0.22	0.25
Total Benefits	4.96	4.82	4.51
Operating Expenses	1.29	1.37	1.21
Total Expenditure	6.25	6.19	5.72
Income less Expenditure	(0.21)	0.28	0.64
Current Surplus (deficit)[a/]	(1.75)	(1.69)	(1.22)

[a/] Contributions less expenditure

Long-Term Branch

Income & Expenditure (% of insurable earnings)



4. Trend of Pensions in Payment

Table 38 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 38
Number of Pensions in Payment (year-end)

	Retirement	Invalidity[a/]	Widows/ers	Orphans	Total Pensions	Rate of Increase (%)
2015	5,309	413	1,216	1,380	8,236	7.2
2016	5,827	449	1,336	1,471	8,967	8.8
2017	6,446	480	1,387	1,544	9,632	7.4
2018	6,957	500	1,451	1,589	10,497	8.9

[a/]Pensions transferred to the category of retirement pensions at age 60.

The low rate of increase in the number of invalidity and orphans' pensions is due, in the first instance, to high termination rates due to the transfer of invalidity persons to retirement pensions as from 60 years of age, and also due to terminations, as many pensioners resume work and the pension is then suspended, or by reaching the maximum qualifying age in the case of orphans.

5. Invalidity Pensions and Grants

Tables 39 and 40 show the incidence of invalidity pensions awarded and of invalidity grants.

Table 39

Number and Frequency of Invalidity Pensions Awarded

	Number awarded	Incidence Rate (per thousand)
2018	52	0.48
2017	58	0.54
2016	69	0.68
2015	56	0.56
2014	52	0.56

Table 40

Invalidity Grants Paid

	Number	Rate per 1,000 insured
2018	30	0.28
2017	49	0.47
2016	38	0.37
2015	57	0.57
2014	41	0.42

6. Trend of Demographic Ratios (Pensioners ÷ active insured)

Table 41 shows the trend of demographic ratios. The higher rate of the increase took place for retirement pensions, with 6.44 pensioners per 100 active contributors in 2017. The consolidated ratio increased to 9.71 on 31 December 2018.

Table 41

Trend of Demographic Ratios

(At 31 December)

	2018	2017	2016	2015	2014
Demographic Ratios (Pensioners ÷ active contributors, in %)					
Retirement [a/]	6.44	6.08	5.62	5.21	4.96
Invalidity [b]	0.46	0.37	0.37	0.35	0.37
Survivors [c/]	2.81	2.81	2.71	2.44	2.53
Total (actual)	9.71	9.26	8.70	8.00	7.86

[a/] Excludes NC pensions

[b/] Pension transferred to an old-age category at age 60, up to 2018 only.

[c/] Includes orphans

7. Distribution of Statutory Contributions

The gross share of contributions allocated to the long-term branch is equivalent to 4.50% of insurable earnings as from 1 July 2003. Deducting the estimated costs of grants, the non-contributory scheme, and administrative and other expenditures, yields a

net rate of 2.92%, as shown in Table 42. As from 2019, the net allocation for pension benefits will increase substantially, due to the impact of the legal amendments.

Table 42
Distribution of the Statutory Contribution Rate as a percent of Insurable Earnings (Excluding investment income)

	2019	2018	2014/17
Gross rate	5.20	4.50	4.50
Other income	0.02	0.02	0.04
Total contributions	5.22	4.52	4.54
Administrative expenditure	(1.30)	(1.29)	(1.23)
Grants [a/]	(0.12)	(0.12)	(0.20)
Non-contributory pensions	(0.16)	(0.19)	(0.34)
Net rate for contributory pension benefits	3.64%	2.82%	2.77%

[a/]Includes all grants

8. Macro-Economic Trends

After a stagnant period due to the worldwide economic recession, the economy of Belize has shown signs of a steady recovery as from 2016, in an environment of low inflation. Recent data by the Statistical Institute of Belize show modest GDP increases and a declining unemployment rate.

As from 2014, the active insured population has been increasing significantly, yielding a coverage rate of two thirds the total employed labour force, that includes the self-employed (SIB data), with a level of compliance estimated at 90% by the SSB, excluding the self-employed. The inception of a self-employed scheme as from 1 March 2003, although on a voluntary basis in the first phase, does not have a material incidence in the total active insured population, due to a stagnant level of "voluntary" participation. **Statistical data show 45,000 persons categorized as "own business", of which only 3% are voluntarily contributing to the self-employed scheme, many on an irregular basis.**

The economy is characterized by a highly seasonal pattern of employment, and a significant proportion of insured persons spend part of the year either unemployed or in self-employed activities. Contributions are equivalent to approximately 2% of the Gross Domestic Product (GDP), and accumulated reserves are equivalent to 14% of GDP.

The total population of Belize has increased in the last decade at a pace similar to the high variant projections of the Statistical Institute of Belize (SIB). Such a rate of population increase is expected to decline in the future from an average of 2.7% in 2000/2010 to 1.5% as from 2018, but the new entrants in the labour force would be

lower, averaging 1.2% per year. Family planning and higher educational standards should slow the intrinsic rate of fertility. From an actuarial standpoint, high fertility rates contribute to delay in the aging of the population and, thus, the demographic ratio of pensioners over active contributors. Nevertheless, the age-structure of the population has experienced a gradual change, with a demographic ratio (population 60 years and over divided by the population 15 to 60 years), that has increased to 10.5%, indicative of the gradual incidence of aging and its emerging incidence on pension costs in the future. However, the gross mortality rates have declined from 28 per thousand in 1990/95 to 15 per thousand, and the life expectancy at birth increased by three years in the last 15 years, reaching an average of 73.7 years at present, according to estimates of the Statistical Institute of Belize (SIB), while the life expectancy at 60 years of age has also increased by approximately two years, impacting the actuarial cost of pensions in payment.

9. Actuarial Projections and Potential Amendments

Long-term actuarial projections have been carried out every three years, based on legal provisions in force at the valuation date. However, structural legal amendments to the financing bases are presently under discussion by the stakeholders, with implementation anticipated the second-half of 2018. These amendments would have a material incidence on the cash flows of the SSB as a whole, and on each of the statutory branches. Therefore, the projections also show scenarios of a set of long-delayed actuarial recommendations, to ensure the financial sustainability and adequacy of the scheme.

In view of the above, the basic projection at the valuation date (31 December 2017) and the related actuarial parameters, are transitory and subject to material adjustments to be updated once the set of legal amendments are enacted by the Minister responsible for social security.

10. Summary of the Demographic Projections

The ratio of pensioners to active insured persons continue to increase an indicator of the demographic maturity of the long-term branch. The ratios are expected to evolve as follows. Longer term, the demographic ratios 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.

Table 43

Trend of Demographic Ratios

(Pensioners ÷ Active Insured)

Year	Retirement Pensions	All Pensions
2014	5.0	7.8
2018	6.5	9.7
2020	6.8	9.9
2023	7.7	10.2
2030	10.3	11.4
2040	15.6	14.7
2050	23.6	21.6
2060	35.8	31.8

11. **Financial Trend and Reserves**

Once the increase in the ceiling and the contribution rate are adjusted, the financial projections are subject to a greater degree of variability than demographic projections, due to the sensitivity of financial forecasts to changes in economic assumptions, such as the level of salary trends, inflation and pending legal amendments concerning eligibility and financing provision. The financial projections are based on the legal provisions in force, **but assuming long-term periodic adjustments to the ceiling and pensions in force in correlation with inflation, an assumption subject to fluctuations due to the period elapsed since the ceiling was adjusted in 2001. For these reasons, the projections are subject to material variations depending on the timing and nature of the proposed set of legal amendments.**

The key indicator derived from the financial projections is the ratio of expenditure derived by the wage base of the active insured persons, or Pay-as-you-go ratio (PAYG). Its comparison with the contribution rate provides a measure of the adequacy of the financing bases of the long-term branch.

The PAYG ratio (expenditure/insurable earnings) increases steadily, providing an indicator of the income that will be required in the future to ensure the financial sustainability of the long-term branch, after offsetting the incidence of investment income.

Table 44
Summary of the Financial Trend (Present ceiling)
(Amounts in millions of BZ$)

Year	Contributions $	Total expenditure $	Current surplus [1/] (deficit) $	PAYG [2/] Ratio	Actual Contribution Rate (%)	Net Deficit (%)
2016	45.1	57.2	(12.1)	5.72	4.50	(1.22)
2017	46.5	64.0	(17.5)	6.20	4.50	(1.70)
2018	48.9	68.0	(19.1)	(6.26)	4.50	(1.76)
2019[a/]	59.0	75.0	(16.0)	(5.68)	5.20	(0.48)
2019[b/]	64.0	77.0	(13.0)	(5.50)	5.40	(0.10)

[1/]Excludes investment income
[2/] Ratio of total expenditure ÷ insurable earnings, in percent

The analysis shows that the increased allocation to the branch reduces the actuarial deficit from 1.76% of insurable earnings in 2018 to 0.48% in 2019, and to only 0.10% if scenario 1 become effective as from 1 July 2019.

Summary of the Trend of Reserves

Table 45 shows that the allocation of the contribution rates to 5.20% of insurable earnings stops the decline of reserves from $431 million in 2017 to $417 million in 2018, yielding a modest increase to $421 million in 2019 (Option A).

Option B assumes that implementation of Scenario 1 takes place as from 1 July 2019, yielding additional income to the branch and a $17 million additional increase in reserves at the close of 2019 assuming investment income performs as anticipated.

Table 45
Trend of Actuarial Reserves
(Amounts in millions of BZ$)

	2019 (B)	2019 (A)	2018	2017
Rate	5.45% [a/]	5.20%	4.50%	4.50%
Contributions	65.0	59.0	48.9	46.5
Expenditure	(77.0)	(75.0)	(68.0)	(64.0)
Current income (deficit)	(12.0)	(16.0)	(19.1)	(17.5)
Investment income	21.0	20.0	16.7	20.4
Net surplus (deficit)	9.0	4.0	(2.4)	20.9
Reserve	4.30	421	417	431

[a/]As from 1 July 2019 (formal proposal by stakeholders).

VI

ASSESSMENT OF THE INVESTMENT PORTFOLIO

(Third Schedule of the Act, Section 17)

1. Investment Portfolio

Table 47 shows the investment portfolio of the scheme. 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. In the last fiscal year, the Board increased the allocation in Associates and long-term investments and reduced the proportion in other categories.

It is also noted that a more comprehensive assessment was carried out in 2018 by a consulting firm, with recommendations undervaluation by the Board. Therefore, the present report is focused on key specific issues dealing with the performance of the investment portfolio.

Table 46

Distribution of the Investments

Investment Mix	2018	%	2017	%
Belize City Council Municipal Bonds	5,482,200.00	1%	7,482,200.00	2%
Debentures	6,200,000.00	1%	6,200,000.00	1%
Shares	15,558,813.00	3%	15,545,813.00	4%
Treasury Notes	75,627,550.36	17%	65,664,389.16	15%
Mortgage and Housing	7,360,541.43	2%	7,535,319.31	2%
Private Sector Loans	113,785,135.19	25%	119,697,997.36	27%
Investment in Associates	193,263,669.24	43%	194,729,383.70	44%
Term Deposits	29,988,181.46	7%	27,272,010.20	6%
Other	-	0%	-	0%
Total	447,266,090.68	99%	444,127,112.73	101%

Table 47

Percent Distribution of the Assets (at 31 December)

	2018	2017	2016
Cash equivalents	6.9	5.7	5.6
Short-term investments	5.6	5.0	5.3
Long-term investments	42.6	40.9	36.3
Investment in Associates	37.0	38.7	35.5
Sub-Total	92.1	90.3	82.7
Other assets	7.9	9.7	7.3
Total	100	100	100

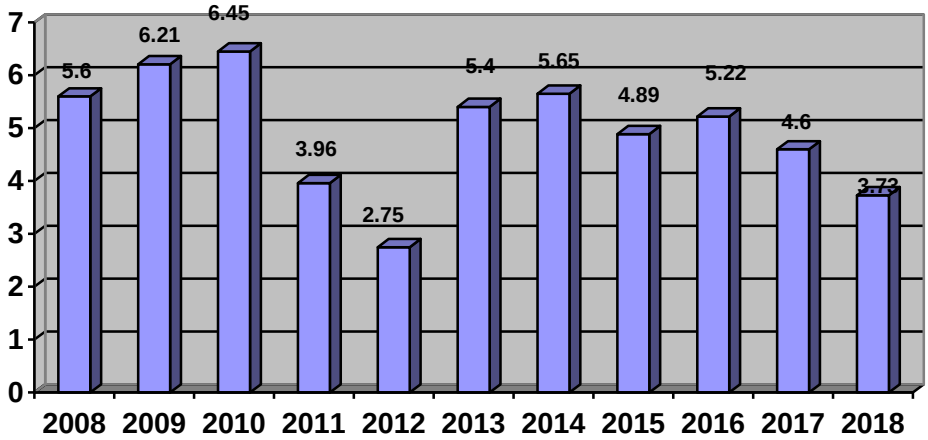
2. Rates of Returns on Investments

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 analysis shows nominal rates of return of 4.09% in 2018 (4.68% in 2017) a decline due to non-payment of dividends by one of the entities.

Nominal Rate of Return on Investments

(In percentages)



3. Cash Balance

Pursuant to the provisions of Section 19 of the Financial and Accounting Regulations, the SSB should maintain a **cash working balance to meet the current expenditure of two months average expenditure over the preceding three financial years.** The amount as of 31 December 2018 complies with the aforementioned requirement.

4. **Diversification of the Portfolio**

As the short-term bank deposits are below the actuarial rate of 3% to 3.5% real, net of inflation, an increase in allocations in Central Bank obligations would enhance the SSB ability to obtain a real rate of return on the investment portfolio in accordance with the actuarial recommendations, a strategy under consideration by the SSB, as well as a higher asset allocation to "development" investments rather than "financial" investments, as shown in the Appendix.

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 dividend and interest in cash, as no recapitalization of shares are feasible due to the SSB need for liquid returns. Avoiding allocation in a single entity in excess of 20% of assets should also be required, in compliance with ISSA guidelines.

5. Investment Constraints

The purchase of additional shares issued by statutory bodies or private enterprises is no longer advisable, to meet diversification and liquidity principles. The actuary is also of the opinion that, in the absence of an urgent adjustment to the outdated ceiling on contributions, the liquidity position of the SSB and ultimately its financial sustainability, would be seriously compromised, as set forth in the periodic actuarial reviews.

This negative process would be abetted by an increase of pensions in force and administrative expenditure at a higher rate than contribution income, resulting eventually in declining reserves when total income becomes lower than total expenditure (Period of Equilibrium), a process that has been impacted by a lower return of the investment portfolio and higher pension expenses, including a 5% adjustment to pensions in payment in 2017.

6. **The scenario of Risk-Adjusted Returns**

The Sharpe Ratio is a risk-adjusted measure of the excess return of a portfolio and how efficient the asset allocation is on a risk/reward basis. **The higher the ratio the better the performance.**

Assuming a risk-free return of 5%, the Sharpe Measure yields the following risk-adjusted return for each category.

S=Rp – r / SD, where **Rp**=Return of the investment, **r=** Risk-Free return (Central Bank Notes).
SD= Standard deviation

The higher the Sharpe Ratios the better the risk-adjusted return on the investments.

Sharpe Ratios (Post -ante) 2016

Term deposits = (0.025 – 0.050) / 0.05 = **-0.50**
Associates & loans= (0.065 – 0.050) / 0.10 = **0.12**
Total portfolio = (0.0462 – 0.050) / 0.06 =**- 0.05**

The post - ante examples, based on actual returns show that high-risk investment in Associates and loans (with higher nominal returns and risks) performed better than low-risk bank deposits. The assessment shows the advisability of reducing the high proportion of assets in Bank CDs, avoiding further allocations in shares, while increasing the positions in Notes at the Central Bank. The formulae show that with issues at the Central Bank yielding 5.25% risk-free (plus contingent CPI "long-term" adjustments), yield expected returns of 7.25%. Therefore, rates payable on new loans should exceed rates payable by the Central Bank, to yield a "risk-adjusted" return compatible to the Central Bank Notes.

7. 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, with an investment horizon, which, at present is rather time-limited, including Central Bank obligations.

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 ever be lower for collateral such as land.

The actuary further advises avoiding additional purchases of local shares, as there is no active securities market in Belize due to liquidity concerns, as well as the

higher risk of a shareholder as compared to a bondholder or depositor. Allocations on 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. It is not possible to ascertain for how long this cycle will persist, but as the economic slowdown subsides, the demand for loans, and thus the "passive" rates of interest, should again move upward.

The Board could assess the feasibility or negotiating with the banking sector the establishment of "special deposits", for loans to private enterprises or individuals (earmarked), at the same rates that "active" interest rates are payable by borrowers, allowing the banks an adequate profit margin, yielding a net SSB return that might be higher than the "passive" rates payable on term deposits. To this effect, the SSB financial area should inform the Board, on a periodic basis, of the on-going rates charged by the banks on personal and institutional loans, plus closing costs.

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

The actuary reiterates that the SSB is in the midst of a second-phase of actuarial maturity, with contributions lower than expenditure by a steadily wider margin, as shown in the actuarial valuation. **As a result, the availability of cash for new investments arises exclusively from a decreasing share of investment income, and allocations to instruments that do not provide liquid cash returns. This would restrict the availability of funds to meet current obligations, requiring the potential liquidation of deposits to pay benefits, unless legal amendments are enacted to increase the level of contributions to the long-term in 2019.**

The Board is actively assessing to allocate funds to international investments, which is allowed under the SSB Act, in line with the recommendation of the IFC Consultants who prepared the Investment Strategy.

8. 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. In view of the above, the CEO provided the actuary with specific models in order to attain a more adequate balance, in accordance with recognized diversification principles and Board's policies, to enhance the development of the agricultural sector of Belize, as discussed at a special meeting in the Investment and the Strategic Committees of the Board held the 24 January 2018.

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 from 57% of the portfolio to 53% in 2020 and 40% in 2025.
- Prioritizing the investment of fresh funds targeted to the Agricultural and related sectors, in order to enhance the value of exports, employment creation, and additional social security contributions, from 21.7% to 35% in the same period.
- The attainment of these goals **is subject to the implementation of the long overdue set of legal amendments**, as otherwise surplus funds between income (contributions and investments), and total expenditure (benefits and administration), would become negligible in 2018 and negative as from 2020. The latter the date of implementation, the more stringent the adjustment to the financing bases in order to guarantee the actuarial sustainability of the scheme.
- As shown in Tables 4 and 5, once the legal amendments are enacted, a material amount of fresh funds would become available to target funds to development issues, although the distribution at the specific dates would depend on market condition, as the Board might modify the anticipated distribution if, for example, GOB bonds and/or utilities offer a better "risk/reward" ratio than agricultural loans.

- The analysis also shows that the financial statements at 31 December 2018 adequately meets the Cash Working Balance set forth in Section 19 of the Financial Regulations, as well as the Liquidity Position, which was updated late last year addressing concerns by the Chairman of the Board and the CEO.
- The Actuary appreciates the technical guidance by the CEO and the Investment and Strategic Committees of the Board for the technical and policy guidance concerning the composition of the investment portfolio in order to enhance the economic development of Belize.

9. Cash Working Balance and Liquidity Requirements

a) Cash Working Balance

Section 19 of the financial regulations stipulate a "**cash working balance**" of two months average expenditure over the preceding three years. At 31 December 2017, the unaudited financial statements show a cash position of $30.6 million (Table 3), twice the statutory minimum of $14.1 million.

Table 48
Comparative Liquidity Position (at 31 December)

	2018	2017	2016
	(amounts in millions of BZ$)		
Cash & equivalents	35.9	30.6	29.3
Short-term investments	29.9	26.2	80.3
Total	65.8	56.8	109.6

b) Liquidity Position

In addition to the minimum **cash working balance, liquid assets** also include short-term investments in CDs and related items, for a total of $65.8 million at the close of 2018, as shown in Table 8, investments in 2017 with updated actuarial guidance. Going forward, liquidity requirements should be assessed periodically in relation to emerging scenarios concerning the implementation of the set of legal amendments.

10. Proposed Adjustments to the Investment Portfolio

The CEO requested the actuary to evaluate alternative investment goals, similar to the Tanzania model in developing countries, to restore a more adequate balance of the investment portfolio **between Financial Issues and Development Issues.**

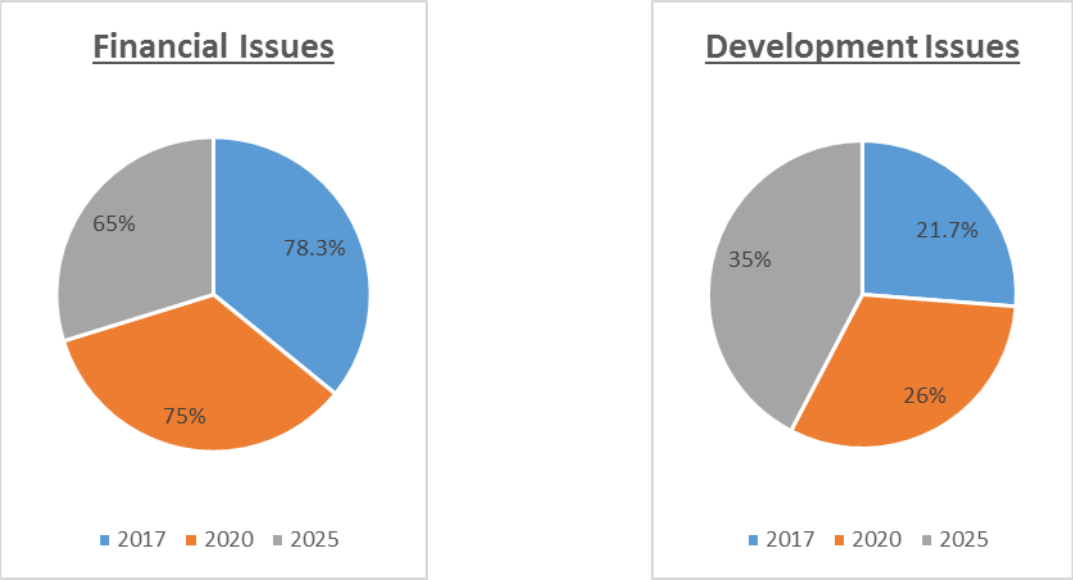
Table 4 shows a scenario increasing the proportion of **Development allocations** from 21.7% to 35% in seven years. Conversely, the proportion of **Financial Issues** would decline from 79.4% to 65%, with a balance of the portfolio more in accordance with diversification guidelines.

The **gradual decline in allocations to utilities would be attained by freezing** the nominal allocation in monetary terms, rather than investments. **Fresh assets would then be re-directed in its entirety to Development Issues,** particularly the **Agricultural Sector,** from 9.2% of the portfolio to 13% in 2020 and by 23% in 2025. This is contingent upon the articulation of a solid investment strategy complete with risk parameters for each sector of investment e..g, agro-productive and the setting of investment ceiling per sector e..g, 20% of reserves in the agro-productive sector, etc.

Table 49
Proposed Medium-Term Investment Limits by Category (2018/22)
(Adopted / Tanzania Model)

Item	2020	2025
GOB and private financial entities obligations	16%	17%
Investment in utilities	53	40
Certificates of Deposits	4	4
Other (municipal, loans, etc.)	2	4
Sub-Total (Financial Issues)	75%	65%
DFC	5	5
Agriculture	13	23
Mortgages / Land / Tourism / Education	8	7
Sub-Total Development Issues	26%	35%
Total	100.0	100.0

Relative Distribution of the Investment Portfolio (2018/2020/2015



11. Attainment of the Investment Goals and Implementation of the Legal Amendments

The enhancement of the investment portfolio with fresh funds targeted to the agricultural and related social sectors would be constrained if the proposed set of legal amendments were not applied timely, as follows:

Scenario A. No Legal Amendments: SSB would be unable to comply with the investments goals and will have to start liquidating assets as from 2020, as total income (contributions + investments) would be lower than total expenditure.

Scenario B. Partial Legal Amendments (Scenario I): Positive additional income as from 2019 would increase steadily until 2024. Enhanced liquidity would allow only a marginal increase in allocations to development projects before 2021.

Scenario C. Full Set of Legal Amendments (Ceiling of $520M as from 1 January 2019 + 2% rate by 2020): Would allow the full development of the distribution of the investment portfolio, with rising cash flow until 2027. An expansion of the investment portfolio, including additional allocations to the agricultural sector, land and offshore investments (US shares & Bonds), would then become feasible. However, this option will not be applied, only Scenario I.

VII

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 program (NHI). However, the financing regulations have yet to be enacted and transitional pilot projects have been in operation in specific areas of Belize City, then in the Southern Region (Stann Creek and Toledo Districts), and gradually in the Northern Region as from 2016.

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 funded in its entirety by the SSB until December 2007, co-financed with GOB transfers as from 2008 and entirely by GOB funds as from 2009.

3. Financing of the Program

In the first phase, the program was financed by the SSB, which implied a substantial financial burden to the SSB of about BZ$40 million. From a fiscal standpoint, the redistribution of income was very regressive, as funds contributed by all stakeholders were utilized to benefit a small segment of the population, regardless of their social insurance status.

As from late 2006, in view of the financial inability of the SSB to earmark additional funds for the roll-out (expansion) to additional geographical areas, the Government began to supplement the funds allocated by the SSB with transfers from the MOH budget and direct Government transfers. As recommended in the actuarial assessment, no further SSB subsidies were feasible, and as from 2009, the program has been financed exclusively by GOB transfers to the SSB, and residual reserves from previous SSB transfers, which have been consumed.

4. 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.

5. NHI Financial Trends

Expenses in 2015 were lower than GOB transfers, reducing the reserve to $1.89 million. A non-material surplus in 2016 increased the reserve to $1.96 million, and a further surplus in 2017 increased the reserve to $2.206 million.

Table 50
Financial Trends of the National Health Insurance Fund
Amounts in thousands of BZ$

	2018[a/]	2017	2016
Total contributions (GOB)	17,800	17,000	17,000
Payments to providers (benefits)	16,305	15,937	16,141
Operating expenses	958	801	778
Total expenditure	(17,263)	(16,738)	(16,919)
Excess of income over expenditure	337	262	81
NHI Reserves [b/]	2,543	2,206	1,960

[a/] Unaudited financial statements.
[b/] Excludes claims pending payment

6. Financial Ratios

Key financial ratios have evolved as shown in Table 50.

Table 51
Key Financial Ratios

	2018	2017	2016
Benefits as % of contributions	92.6%	93.7%	95.8%
Total expenses as % of contributions	98.1%	98.5%	99.5%
Operating expenses as % of benefits	5.9%	5.0%	4.8%
Fund ratio (reserves ÷ total expenditure)	0.15	0.13	0.12
* In months	1.7	1.6	1.4

The analysis shows a level of reserves equivalent to only 1.6 months of expenditure, (1.4 months in 2016) **which is below the minimum international accepted benchmarks of six months expenditure**. The ratio would decline further if outstanding claims were deducted from the reserves. Therefore, a key task of the NHI is to strengthen the Fund Ratio with contingency reserves equivalent to six months average expenditure, to cover potential increases in claims or the need for additional GOB funding.

If outstanding claims are equivalent to 5% the average monthly benefit expenditure, a rather liberal ratio, about almost $1 million would be deducted from the gross reserve, practically erasing the reserve registered in the accounts.

7. Summary of Financial Operations by Region

Table 50 shows a summary of the financial operations by region, according to the NHI activity reports. Expenses in Southside Belize increased to 57% of the total, as several services are provided only in Belize City. Expenses in the Northern Region account for only 8% of the total, with the cost of clinical services in that region were compensated by a reduction in expenses in the Southern Region.

Table 52
Financial Operations by Region
(percent distribution)

	2018	2017	2016
South Side Belize City	51	54	49
Southern Region	35	36	40
Northern Region	8	5	6
Total purchasing expenses	94	95	95
Administrative expenses	6	5	5
Total expense	100%	100%	100%

8. Cost of Benefits by Type of Service

Table 51 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. PCP accounts for 73% of total benefits expenditure, pharmaceuticals at 12%, and Lab tests 9%, with non-material secular variations.

Table 53
Benefit NHI Expenditure by Specific Service, (in thousands of BZ$)

	2018	2017	2016
Primary Care (PCP)	11,655	10,993	10,957
Pharmacy	1,246	1,748	2,009
Imaging	636	579	617
Lab tests	1,378	1,299	1,361
Ophthalmology	222	236	207
Hospitalization	248	223	259
Total (three regions)	15,385[a/]	15,078	15,410

[a/] $16,305 including other items.

9. Membership Data

Table 52 shows the membership (beneficiaries) data for the **last three years**, with a decline in the number of beneficiaries in **2017,** as per preliminary data.

Table 54
NHI Membership Southside Belize, Southern Region and Northern Region (December 2018)

	2018	2017	2016	2015	2014
BFLA	12,775	13,693	14,041	13,530	13,031
BMA	11,997	13,293	13,825	13,418	12,986
Integral	11,909	13,795	14,370	14,254	13,863
M. Roberts	10,526	12,363	13,856	13,733	13,669
Sub-total	**47,207**	**53,144**	**56,092**	**54,935**	**53,549**
Dangriga	15,790	16,336	16,838	16,327	16,988
Independence	14,524	14,147	13,890	13,515	13,637
Punta Gorda	12,594	12,477	13,093	12,724	13,164
San Antonio	9,611	9,498	9,917	9,939	10,102
Mercy Clinic	2,842	1,758	1,657	1,459	1,229
Corozal PCP	11,194	-	-	-	-
Presbyterian	3,575	-	-	-	-
San Narcisso	3,336	-	-	-	-
Sub-total	**73,466**	**54,216**	**55,395**	**53,964**	**55,120**
Total	**120,673**	**107,360**	**111,487**	**108,899**	**108,669**

10. Actuarial Cost of the Program

Table 53 shows the actuarial costs as a percent of the wage-base, showing estimated actuarial costs of 5.40% in 2017 (5.32% in 2016), assuming a “notional” wage base of 30% the total SSB insurable earnings.

Table 55
Estimated Actuarial Cost of Benefits (2014 valuation)
(Amounts in thousands of BZ$)

	2018	2017	2016
SSB wage base	1,088,300	1,032,625	1,001,150
NHI beneficiaries (average)	105,009	109,428	110,198
NHI wage-base (30%)[1/]	326,490	309,787	300,345
NHI benefit expenditure ($)	16,305	15,937	16,141
Administrative expenditure ($)	957	801	778
Total expenditure	17,262	16,738	16,919
Cost as % of NHI wage-base	5.29%	5.40%	5.33%
Cost per member per year	$164	$156	$155

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

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

The total cost of a comprehensive package of benefits to the total population of the country (universal coverage) would amount to approximately 7.5% to 8.5% of the SSB insurable earnings, or BZ$60 million. Deducting from this amount the GOB budget for healthcare with the Ministry of Health and other statutory bodies, along with private health ensuring policies, would provide general indicators of additional resources required to set up a universal National Health Insurance Plan in Belize, funded by contributions and/or earmarked taxes.

11. Cost Estimates of the Rollover

The additional cost to the GOB would depend on the proportion of beneficiaries to be covered, whether 100% or a lower proportion. A specific analysis should be carried out in order to assess the utilization and cost of the pending rollover.

12. Conclusions and Recommendations

The GOB has in place a program for residents of a section of Belize City and selected areas in the Southern and Northern Regions, financed by budget transfers. The reserve ratio represents only 1.4 months of expenditure as at 31 December 2016, below the accepted benchmarks of six months' average expenditure. The ratio may fall further taking into account outstanding claims not reflected yet in the financial statements.

The estimated average actuarial cost is assessed at 5.4% the notional wage base of the targeted population and the unit cost per beneficiary is assessed at $155 per year.

Primary health services account for about 60% of total benefit expenditure, and 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.

The authorities have not yet adopted a decision on the remaining roll-out strategy or the financing of the scheme, and more comprehensive actuarial assessments should be carried out once policy decisions in this respect are adopted. The administrative cost of the scheme is below 5% of benefits, within accepted benchmarks.

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 A

PERFORMANCE ANALYSIS OF THE SELF-EMPLOYED SCHEME

1. Registered and 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 three percent the number of self-employed persons in the country. An anomalous situation as it would be expected that most eligible self-employed would be males. This might be due to the inclusion of housewives among the "self-employed," a category which in many legislations are not considered as self-employed.

Global statistics show more than 48,165 self-employed persons in Belize, of which only a fraction is actively contributing in the SSB's voluntary self-employed scheme, but on an irregular basis.

Table 1
Registered Self-Employed and Active Contributors by Year

Year	Active Insured Self-employed	Rate of Increase	New Registrations
2015	1,197	9.4%	400
2016	1,389	16.0%	521
2017	1,464	5.4%	439
2018	1,556	6.6%	515

2. Distribution of the Self-Employed by Wage-Group

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 one-third of insured self-employed persons have declared low notional earnings with only 24% in the top wage branch.

Table 2
Percent Distribution of Active Insured by Wage-Group

Income Range	Weekly Wage-group	Percent Distribution	
		Self-employed	Employed
Low	Less than 110	33	11
Middle	110/300	43	49
High	300 and over	24	40
	Total	100%	100%

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

Table 3 shows that **22% of the active self-employed are 55 years and over, as compared to only 7% in the general scheme, an indicator of "adverse selection", in order to obtain a "financial gain" by participating in the self-employed scheme at later ages.**

Table 3
Percent Distribution of Active Self-employed by Age Group
(At 31 December 2018)

Age-Group	Percent	Percent
15/34	18%	56%
35/54	60%	37%
55 +	22%	7%
Total	100%	100%

4. The trend of Benefits Awarded to the Self-Employed

Table 4 shows the statistics related to benefit claims awarded to the self-employed.

Table 4
Benefits Awarded to Self Employed Insured Persons

Benefit Type	Number of Claims Allowed	
	2018	2017
Total	310	326
Short Term	233	244
Sickness Benefit	208	214
Maternity Benefit	12	13
Maternity Grant	13	17
Long Term	62	66
Funeral Grant (NC)	5	4
Invalidity	3	1
Retirement	49	56
Survivor's	5	5
Employment Injury	15	16
Injury Benefit	15	15
Disablement	-	1
Death	-	0

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

a) Table 5 shows the frequency of short-term benefit by the active self-employed persons.

Table 5
Frequency of Claims by the Self-Employed
Short-Term Benefits

Year	Number of Total Claims	Claims Sickness	Active Self-Employed	Incidence Rate	Sickness Benefit Only
2014	170	137	1,091	15.6%	12.5%
2015	184	162	1,197	15.4%	13.6%
2016	221	191	1,389	15.9%	13.8%
2017	263	214	1,464	17.9%	14.6%
2018	253	208	1,563	16.2%	13.3%

Table 6 shows the differential rates of claims for **sickness benefit**, with a lower incidence by the self-employed, which has the "preference" for retirement pensions by participants in the voluntary self-employed scheme, rather than a short-term branch.

Table 6

The Ratio of Short-Term Benefits to Active Insured Person

	Total Insured	Self-Employed Scheme
2014	0.37	0.16
2015	0.38	0.15
2016	0.37	0.16
2017	0.45	0.18
2018	0.38	0.16

6. Pension Benefits to the Self-Employed

Table 7 shows the number of pensions awarded to the self-employed, with a ratio much higher than for employed persons. In only 15 years of operation, the number of pensions in force has increased steadily**, as the individual has no employer,** an issue that should be subject to a specific assessment as from 2019.

The cost of short-term benefits has remained rather stable over the past five years, whereas the cost of long-term benefits has increased steadily, in correlation with the number of pensions in force.

The aforementioned experience shows conclusively that self-employed scheme has experienced an intense rate of "adverse selection", arising from the faulty design of the self-employed scheme.

Data also shows that more females than males are active contributors to the SE scheme, due to the anomalous inclusion of housewives as self-employed. Further, the incidence of Short-term benefits is lower than in the general scheme.

Table 7
Benefits Awarded to Self Employed Insured Persons
2014 - 2018
Date Processed: March 25, 2019

Benefit Type	Number of Claims Allowed				
	2014	2015	2016	2017	2018
Total	**201**	**224**	**268**	**326**	**310**
Short Term	**158**	**178**	**210**	**244**	**233**
Sickness Benefit	137	162	191	214	208
Maternity Benefit	9	9	7	13	12
Maternity Grant	12	7	12	17	13
Long Term	**31**	**40**	**46**	**66**	**62**
Funeral Grant (NC)	0	2	0	4	5
Invalidity	1	3	3	1	3
Retirement	26	33	39	56	49
Survivor's	4	2	4	5	5
Employment Injury	**12**	**6**	**12**	**16**	**15**
Injury Benefit	12	4	11	15	15
Disablement	0	1	0	1	0
Death	0	1	1	0	0

Source: Social Security Board

Table 8

Comparative Demographic Ratios (General versus Self-Employee Schemes)

Pensions	General Scheme	Self-Employed Scheme
	(Pensioners ÷ active contributors), in %	
Retirement	6.44	17.7
Invalidity	0.46	1.0
Widows [a/]	2.81	1.6
Total	9.71%	20.3%

[a/]Includes orphans

Table 8 shows that in only 16 years, the maturity of the self-employed scheme as measured by the ratio of pensioners to active contributions is twice the maturity of pensioners in the general scheme, as measured by the number of pensioners divided by the active contributors at the close of the fiscal year. Although a proportion of former self-employed pensioners also had previous credits as employed persons, the disparity in the demographic ratios show 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 only 10 years, is having a negative impact on the sustainability of the long-term branch.

7. Financial Performance

Table 9 shows the widening gap between contributions and expenditure of the self-employed scheme.

Table 9

Financial Performance of the Self-employed

	2018	2017	2016
Contributions	828,256	742,676	662,182
Benefit Expenditure	(1,638,458)[a/]	(1,498,120)	(1,113,029)
Share of administrative expenditure	(200,000)	(200,000)	(189,000)
Total expenses	(1,838,458)	(1,698,120)	(1,302,029)
Net surplus (deficit)	(1,110,202)	(955,444)	(639,847)

[a/]91% pensions and 9% short-term benefits.

8. Actuarial Cost of the Self-Employed Scheme

The scheme is financed by 7% of insurable earnings, and already is confronting financial deficits, as shown in Table 10. 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 10
Actuarial Cost of the Self -Employed Scheme
(In percent of insurable earnings)

	2018	2015
Contributions	7.0%	7.0%
Short-term benefits	1.4	1.3
Long-term benefits	12.4	10.8
Administrative expenditure	1.7	1.5
Total expenditure	15.5	13.6%
Surplus (deficit)	(8.5)%	(6.6)%

ANNEX B

ASSESSMENT OF THE NON-CONTRIBUTORY PENSION SCHEME

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.

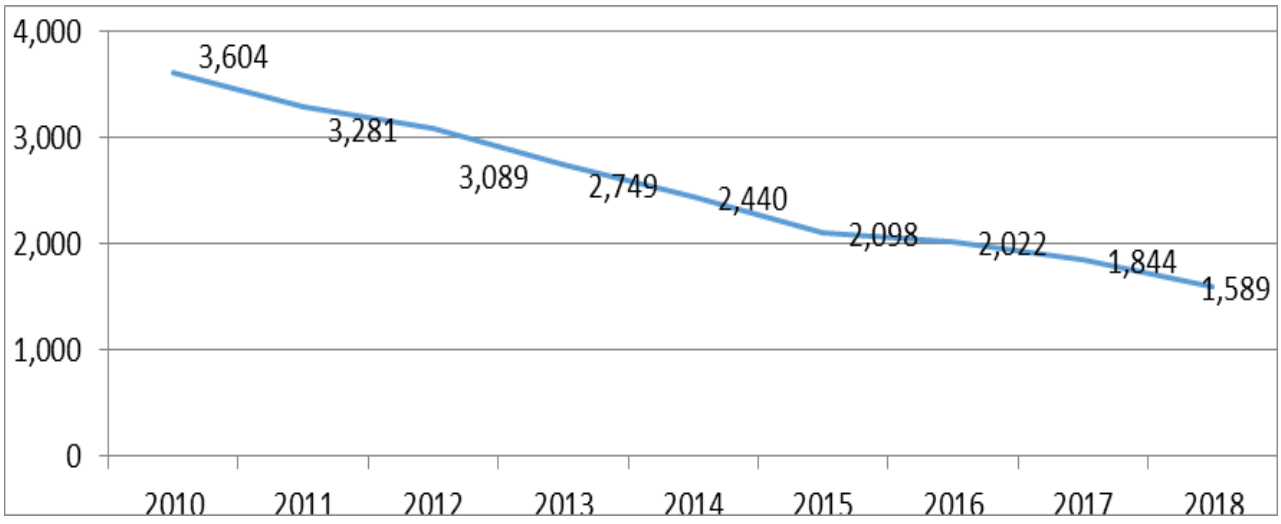
2. The trend of Pensions in Payment

The total number of NCPs has declined steadily from a peak of 4,934 early in 2008 to 1,844 pensions in payment in December 2017. The mortality of pensioners and more thorough evaluation procedures contributed to offset the abnormal surge of pensions awarded during the initial phase of operations.

Table 1
The trend of NCP Pensions (at 31 December)

	2018	2017	2016
Number of pensions in payment			
Males	525	614	666
Females	1,064	1,230	1,356
Total	1,589	1,844	2,022

Trend of NCP Persons



3. Financial Trends

Table 2 shows the trend of benefit expenditure on non-contributory pensions with a steady reduction in benefit expenditure and a lower incidence in long-term actuarial cost.

Table 2
NCP Benefit Payments
(Amounts in thousands of BZ$)

Year	Expenditure (BZ$)	Rate of Increase (decrease) in %
2010	$4,201	(10.7)
2011	$4,189	(1.3)
2012	$3,781	(8.8)
2013	$3,404	(10.0)
2014	$3,032	(10.9)
2015	$2,754	(9.2)
2016	$2,505	(9.0)
2017	$2,297	(8.3)
2018	$2,009	(12.5)

4. Rates of Award and Terminations

Table 3 shows the rates of terminations and awards in the past three years. A gross death rate of 12.3% for terminations in 2014 has exceeded the 1.1% rate of new awards, thus yielding an 11.2% reduction in the number of pensions in force.

Table 3
Rates of Award and Terminations of NCP (In percent)

	2018	2017	2016
Death	(7.6)	(7.1)	(5.2)
Other	(8.1)	(4.1)	(5.0)
Sub-total		(11.2)	(10.2)
New awards	2.7	2.5	2.3
Net increase (decrease)[a/]	(12.9)	(8.1)	(7.9)

[a/] Related to the balance at the beginning of each year

5. Actuarial Cost of the Scheme

The actuarial cost of benefits has evolved as follows, excluding management expenses:

Table 4
Actuarial Cost of NCP Benefits

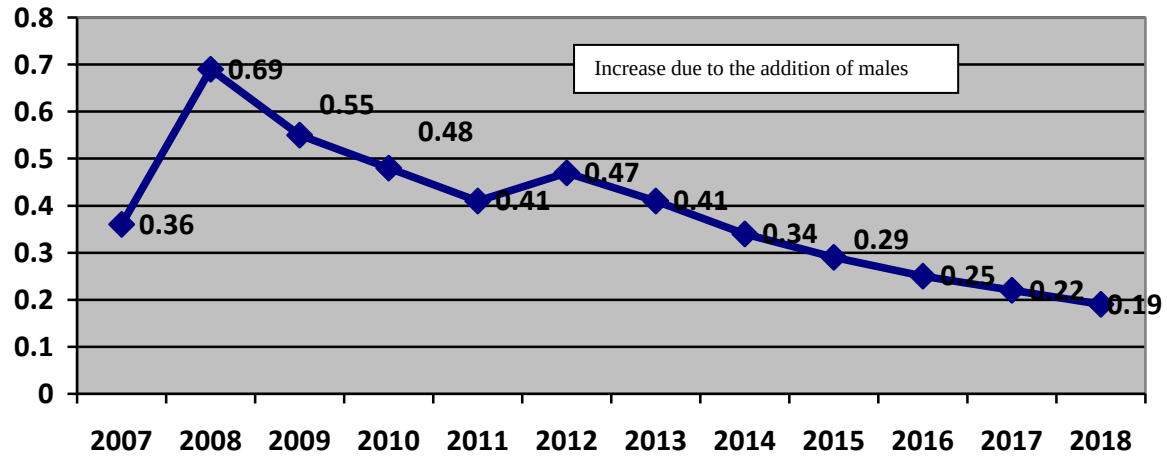
Year	Percent of insurable earnings
2007	0.36%
2008	0.69%*
2009	0.62%
2010	0.55%
2011	0.55%
2012	0.47%
2013	0.41%
2014	0.34%
2015	029%
2016	0.25%
2017	0.22%
2018	0.19%

* Increase due to the addition of males

At 2014, triennial actuarial valuation the PAYG cost of NCP was projected at an average of 0.24% of insurable earnings, with mortality of pensioners offsetting the award of new pensions to a significant extent, declining to only 0.19% at 31 December 2018. Assuming a restricted pace of revaluation of pensions in payment, jointly with a long-delayed adjustment to the ceiling of insurable earnings, the updated long-term trend for 2019/20, shows actuarial costs of 0.17% of insurable earnings. Raising the initial eligibility age to 67 years for females would reduce further the actuarial cost.

Actuarial Cost of NCP Scheme

(% of insurable earnings)



6. Amendments to the Non-Contributory Scheme

The actuary concurs with the recommendation of the NCP Committee to increase to 67 years the minimum entitlement age of females, in accordance with international guidelines, setting the eligibility age two years higher than the SSB normal retirement age; to increase to 20 years the residency requirement for naturalized residents; to allow only one NCP to spouses or persons in the same household, and the non-entitlement to a NCP if the individual has opted for the SSB grant.

Jointly with the re-allocation of contributions between the Short-term branch and the EI branch, and amendments to the Self-employed scheme, the proposals set forth above should be included in the set of legal amendments required by the SSB in the first phase. Transferring to the Government the financing of NCP would require only deleting the NCP Regulations but keeping the Committee as the management entity of the NCP scheme.

Section 18 of the regulations stipulates an **option** between the Grant and the NCP. As insured persons are allowed to claim the grant of ages of **60 to 65 years,** the Committee should verify if claimants have previously received the grant and if so, to disallow the NCP claim.

ANNEX C

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 with 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 from the second day in 2002). From the first day in 2001 and 2002 if, 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 actually 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 to 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: $49.35 per week as from April 2016.

Maximum pension: 60% of average insurable earnings.

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 five contributions paid in the last 13 weeks.
Special credits:	Claimant 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 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 from 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 was in receipt of 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 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 to give 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 from December 2007), and meeting the conditions to qualify for pensions. The monthly amount of $100 increased from $75, as from November 2007.

ANNEX D

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 on 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 "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 benefit 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 which 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.