

Final

B E L I Z E

Social Security Board

**Actuarial Performance Analysis of the Social Security Scheme
(as at 31 December 2016)**

14 July, 2017

14 July 2017

Social Security Board
Belmopan, Belize

In accordance with the provisions of Section 45 of the Social Security Act, an actuarial assessment of the scheme was carried out as of 31 December 2016, as a complement to the triennial valuation carried out every three years, to assess the performance of the benefit branches and the adequacy of the statutory contributions to support benefits. The review was based on the legislative provisions in force, including amendments introduced since the last review. It is noted that the Board has initiated a first set of statutory amendments, duly approved by the Government early in 2016, by adjusting pensions and transferring reserves to strengthen the actuarial position of the long-term branch. The analysis also comprises an assessment of the Investment Portfolio, the National Health Insurance Program, the Self-Employed scheme, and the Non-Contributory pension scheme.

As stipulated in the Financial Regulations, the scheme operates three basic benefit branches, which are financially autonomous and therefore, income allotted to one branch can not be used to cover expenditure related to another branch. Concurrently with the performance analysis, a Working Group, including the actuary, is designing a comprehensive set of legal amendments under evaluation by the Board, for implementation early in 2018.

Key challenges of the Board in 2017 should be focused on two main areas: i) completion of the complex set of pending legal amendments, to address critical issues and distortions arising from the regulations and to ensure the financial sustainability of the scheme, and ii) ensuring an adequate return of the investment portfolio in accordance with the actuarial expectations.

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

Attestation

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

Yours sincerely,

For: Consultores Actuariales, SRL

Hernando Pérez Montás

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EXECUTIVE SUMMARY

The actuarial analysis shows that the legal bases of the social security scheme should be updated urgently to ensure the long-term financial sustainability of the scheme. Total income of the long-term branch is now anticipated to exceed total contributions in approximately 3 years (period of equilibrium), with a decline in reserves thereafter, based on legal provisions in force. Any delay in implementing legal amendments beyond January 2018 will compromise the financial sustainability of the scheme, resulting in restrictions on funds available for investments, liquidity constraints, curtailment of operational expenses and potential liquidation of investments when the period of equilibrium is attained. Therefore, a business-as-usual scenario is no longer feasible. Key amendments include: **i)** An internal reallocation of contributions amongst the benefit branches, allocating 65% of contributions to the long-term branch, and 72% after the total rate is increased to 10% of insurable earnings. This amendment would still ensure the long-term solvency of the short-term and employment injury branches; **ii)** An increase in the ceiling of insurable earnings to approximately \$500 per week, reducing the gap between actual earnings and pensions to over 40% of insured persons with earnings above the present ceiling of \$320 per week, with contributions based on insurable earnings. Most employees in the agricultural, construction and trade sectors will not be affected by this amendment; **iii)** An increase in the contribution rate from 8% to 10% of insurable earnings, effective as from 1 January 2020 or earlier, to be entirely allocated to the long-term branch, increasing the share of contributions to the branch to 72% (7.2 of the 10% rate); **iv)** A set of amendments to the self-employed scheme, which is already facing actuarial and financial losses, as a result of a deficient set of legal provisions, including the voluntary nature of the scheme conducive to a high level of “adverse selection”; **v)** Adjusting the legal provisions regarding multiple pensions, invalidity grants, and validation of credits.

Furthermore, delaying the implementation of the amendments would also require more drastic measures in the future, necessitating greater government intervention. The Board has already started to restructure the investment portfolio in order to improve the rate of return on investments, and to ensure also an optimum level of liquidity of the reserves. The first set of amendments shown above would ensure the actuarial solvency of the long-term branch until the middle of the next decade.

As shown in the long-term projections, to be updated at the close of the present fiscal year, the reserves of the long-term branch would start decreasing in about three years, assuming a 4% real rate of return on investments, increasing or decreasing by approximately two years for alternative rates of return on investments, unless the required legal amendments to the scheme are not implemented.

The Long Term Branch is maturing steadily, with geometric increases at the rate of 8% per year, compared to a lower rate of increase in contributions. When adding the higher cost of administrative expenditure arising from new compensation policies, the period of equilibrium could be reached faster than anticipated.

Contributions to the branch are lower than expenses, with the difference covered by a rising share of investment income. It is also noted that the branch is financed by only one-half the 8% contributions rate, the lowest rate of pension schemes in the CARICOM area, with the gross 4% rate depleted by administrative expenses and the cost of non-contributions pensions, reducing the net revenues to cover the rising cost of general pensions to only 2.9% of insurable earnings, including pensions awarded to self-employed persons.

A second set of amendments should be implemented in approximately 5 years to address the ageing of the population of Belize, and the increase in the life expectancy, as follows: i) Updating the eligibility provisions from 10 years to 20 years of contributions to the scheme. Allowing an insured person to qualify for a retirement pension lasting 20 to 25 years with only 10 years of contributions would be conducive to very high actuarial costs in the future. Similar adjustments to the eligibility provisions to qualify for invalidity pensions should also be addressed; ii) A gradual adjustment to the minimum retirement age with entitlement to a full pension from 60 to 65 years, but allowing early retirement with actuarially reduced formulae. At present, a high proportion of retirees are claiming pensions before the nominal age of 65 years including the self-employed, with the SSB unable to verify the termination of the self-employment status.

The triennial long-term projections to be carried out at the close of the present fiscal year should incorporate the first set of proposal specified above, to ensure the financial sustainability of a social security scheme which is already in an advanced phase of maturity, as measured by the rising proportion of pensioners in relation to the number of active contributors, with the number of pensioners anticipated to double during the next 7 years.

A shortened investment horizon scenario due to the reduction of the period of equilibrium implies higher liquidity of the investment portfolio. This will affect policies concerning the asset allocation strategy, with no additional feasible allocation to shares in statutory bodies, as well as restrictions on loans to private enterprises.

The 2001 elimination of the waiting period for Sickness Benefits has increased the administrative workload as well as the cost of the Short Term Branch. A partial or full restoration of the waiting period will reduce the cost of the branch and align the qualifying conditions with other Social Security schemes.

The Committee should also continue to reduce the number of Non-Contributory pensions by enforcing more stringent valuation procedures jointly with the required amendments to the eligibility provisions (67 years for females and a 20-year residency requirement to qualify). A reduction in the number of NCP pensions in force to 1,500 persons over three years would have a positive impact on the cost of the long term branch.

I

SUMMARY AND RECOMMENDATIONS**1. Synopsis of Evolving Trends**

a) The **Short-term branch reserve** position was restored by the internal transfer of \$18 million in 2014, but reserves have begun to decline in the absence of an increase in the rate of contributions, but are anticipated to remain above the minimum statutory level over the medium term. The restoration of a waiting period should contribute to align the cost of the scheme to the statutory contributions, ensuring the long-term sustainability of the scheme.

b) **The EI branch is overfunded**, and reserves are rising again, with a balance in excess of actuarial benchmarks, despite the transfer of \$80 million to the Long-Term branch early in 2016. A reallocation of the contribution among the branch reducing the share allocated to the EI branch should be implemented as from 1 January 2018.

c) The cost of the **Non-Contributory Pension scheme** continues to decline, and could decline further, as stated in the Executive Summary, by equalizing at 67 years the minimum retirement age of females to that of males, and requiring a 20-year legal residence in Belize to qualify for a pension, will contribute to reduce the cost of the Non-Contributory Pension scheme, and the number of cases to 1,500 in approximately five years.

d) As for the **Self-Employed Scheme**, the analysis shows that the performance of the self-employed scheme has been deficient, **due to faulty design, including the voluntary feature of the scheme**, which is conducive to **adverse selection**. 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 option of early retirement, and establishing “compliance” standards once they become voluntarily insured**. The emerging experience shows a cost of the scheme of 13.6% of insurable earnings as compared to contribution rates of only 7%, indicative that the self-employed scheme has become already insolvent from a financial and actuarial standpoint. Therefore, cost-containment measures are required to control the spiraling cost of the self-employed scheme, which in relative terms is higher than the general scheme, according to recent data provided by the statistical section of the SSB.

Note also that Section 3 (3) of the Self-employed Regulations state that once a person is registered on a voluntary basis “the self-employed person shall contribute on a sustainable basis to the Social Security Fund” to become eligible. Management should verify if that conditionality is being enforced in practice.

e) **The cost of the Long-Term branch** has increased at a faster rate than anticipated, due to the combined impact of the gradual maturity of the scheme, a 5% across the board pension adjustment as from April 2017, and an acceleration of pensions awarded to self-employed persons. Further, the analysis also shows that most insured persons are claiming pension as from the age of 60 years, including the self-employed, with the SSB unable to detect or control working activity before age 65. Also the number of pensioners with two benefits has increased steadily, due to an amendment several years ago, with a negative incidence on the long-term branch. Legal amendments effective as from 1 January 2018 are required including an increasing the ceiling, reallocating the branches, and increasing the rate of contribution from 8% to 10% as from 1 January 2020, as set forth in the executive summary.

The diversification of the investment portfolio is a key task of the Board, and the report shows guidance on risk-adjusted analysis, as a supplement to nominal and real returns.

The analysis shows that the implementation of the first set of legal amendments early in 2018 is a key priority, to ensure the financial sustainability of the scheme and to restore a better balance between actual salaries and the amount of social security pensions.

2. Consolidated Financial Performance

The analysis shows a modest increase in contributions, which are constrained by a frozen ceiling on insurable earnings, while benefit and operational expenses exceeded contributions by \$3.23 million in 2016, a gap which is covered by a portion of investment income. Therefore, the capitalization of the scheme going forward would arise exclusively from a decreasing share of investment income, indicative of a rather high rate of maturity and the need to update the financing bases to ensure the long-term sustainability of the scheme. The net surplus between total income and expenditure was \$23 million, the same amount as in the preceding year, while consolidated reserves increased by 4.3% to \$522 million.

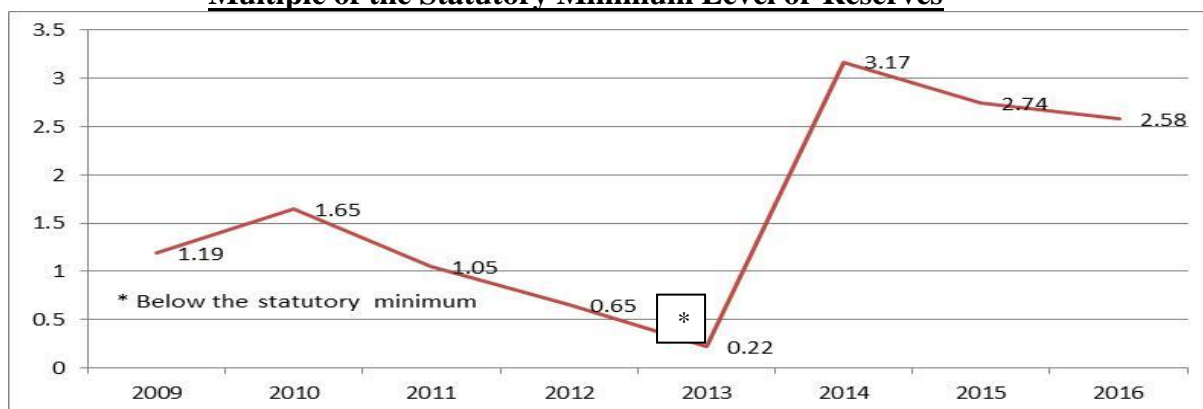
Actuarial liabilities have been increasing at a faster rate, as evidenced by a 13.6% increase in the long-term branch benefit expenditure. Until parametric reforms to the financial bases are enacted, the scheme will continue to experience higher current deficits between contributions and expenditure, and a potential reduction in the level of reserves of the long-term branch in approximately 3 years, assuming a 4% real rate of return on investments.

3. Short-Term Branch

The actuarial system applied to the short-term branch operates under the assessment or pay-as-you-go (PAYG) system of finance, as relative costs are expected to remain within a macro range over a long-period; no long-term liabilities are accumulated over time, and a “contingency reserve” is required to cover adverse fluctuations in the experience.

The analysis shows that the transfer of \$18 million in reserves to the branch in 2014 restored the funded status of the branch above the minimum level stipulated in the Regulations. However, the share of contribution allocated to the branch does not suffice to cover the cost of benefits and administration expenses of the branch, which would cause a gradual reduction in reserves and, ultimately, the need for a further transfer from the employment injury branch in approximately 7 to 8 years.

Short-Term Branch
Multiple of the Statutory Minimum Level or Reserves



The actuarial valuation shows average actuarial costs, including the share of administrative expenditure, of 1.75% of insurable earnings in the last three years, as compared to statutory contributions equivalent to 1.54% of insurable earnings (19.25% of contributions). Therefore, increasing the share of contributions to the short-term branch to 1.80% of insurable earnings or 22.5% of contributions (by an equivalent reduction of the allocation to the employment injury branch), would ensure the long-

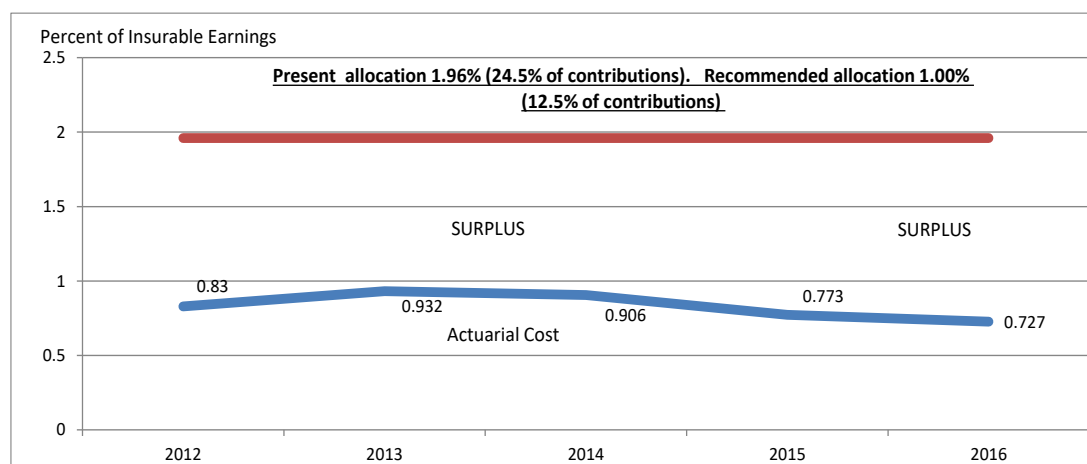
term sustainability of the branch. Sickness allowances accounted for two-thirds the total benefit expenses, and should the high level of fertility decrease in the future, the rate of maternity benefit would tend to decrease, a worldwide trend associated to a higher level of literacy and education standards of females, plus family planning awareness. The eventual partial restoration of a 2-days waiting period and a replacement ratio of benefit of 70% rather than 80%, would reduce further the actuarial cost of the branch and extend the level of sufficiency of the reserves.

4. Employment Injury Branch

a) Operational Performance and Reserves

Despite the 2014 transfer of \$18 million in excess reserves to restore the funded status of the short-term branch above the minimum level required by the financial regulations, and an additional transfer of \$80 million to strengthen the funded status of the long-term branch early in 2016, the cost and reserves of the EI branch continue to exceed the actuarial requirements. Income less expenditure reached a record amount of \$18.6 million in 2016, and the actuarial valuation estimates actuarial costs of 1% of insurable earnings (12.5% of contributions rather than 24.50% of contributions). **Even after the restructuring of the rate of contributions, the reserves are anticipated to continue to increase due to the interest income arising from the investment portfolio assigned to the branch.** Therefore, a substantial portion of the excess reserves should be transferred as from 2020 to the long-term branch to strengthen its funded status.

EI Branch Actuarial Cost (as % of Insurable Earnings)



b) Disablement and Death Reserve

The valuation shows that the Disablement and Death Reserve of the EI branch of \$15.6 million at 31 December 2016 covers approximately fifty percent the present value of pensions in payment. **New cases and the balance of the reserves are subject to**

significant fluctuations and, at present, there is no need for an internal transfer of reserves from the Short-term EI sub-branch to the Disablement and Death reserve.

The table below shows a consolidated surplus of \$28,593 million at the valuation date, with consolidated reserves equivalent to 2.29 times the joint liabilities.

Consolidated Assessment of the Employment Injury Branch
(at 31 December 2016)

	Reserve	Actuarial Liability	Surplus (deficit)
	(Amount in millions of BZ\$)		
Short-term benefits	\$49.933	6.274 ^{a/}	43.659
Disablement death benefits	15.595	30.661	(15.066)
Total	65.528	36.935	28.593

^{a/}Estimated at 1.5 times the statutory minimum reserve (Section 17.2, Financial Regs.).

5. Long-Term Branch

a) General Trend and Actuarial Indicators

The analysis shows an actuarial maturity of the scheme at a faster pace than anticipated, due to the combined effect of a 5% increase of pensions in payment, the legal amendment allowing retired persons to continue to become eligible also for survivors pensions, and new pensions awarded exceeding the rate of increase of contributions and investment income. The “current” operations (contributions less total expenditure) yielded a deficit of \$12,210 million in 2016, as compared to a deficit of \$7.4 million the previous year. The operational surplus declined to \$6.37 million (from \$10 million in 2015).

The analysis shows that a large proportion of retirement pensions are awarded before the normal retirement age of 65 years, with 30% of pensions in payment at 60/64 years of age. A postponement of the minimum retirement age, as from the next decade, due to a longer life expectancy of the population, has been recommended in the matrix of legal amendments.

The PAYG Ratio (expenditure as a percent of insurable earnings) increased to 5.72% in 2016 (5.26% in 2015), and **the Fund Ratio** (reserves ÷ total expenditure) increased to 7.5 due to the addition of \$80 million to the reserve. **The Demographic Ratio** (pensioners divided by active contributors) also increased, indicative of the gradual maturity of the branch. Demographic projections show a gradual increase in the demographic ratios, due to the increase in the proportion of pensioners in comparison to the active contributors. The last triennial financial projections carried out at 31 December 2014 were based on the legal provisions in force, **but assuming a**

dynamic and gradual adjustment to the ceiling and pensions in correlation with inflation. For these reasons, the next projections at 31 December 2017 will be subject to material variations depending on the timing and nature of the proposed set of legal amendments to be submitted to the Board by the Working Group before December 2017.

The analysis shows that the present statutory contribution rate of 4.5% of insurable earnings, of which only 2.90% is assigned to cover retirement, invalidity and survivors' pensions, is not sufficient to cover the total expenditure, with a steadily rising gap between contributions and expenditure. The deficit is covered by a increasing share of investment income, until a period of equilibrium is reached, when the investment income would not be sufficient to cover the deficits. In the absence of adjustments to the contribution rate, reserves would then start to decline in approximately 3 years.

b). **Period of Equilibrium**

At 31 December 2014 the period of equilibrium of the long-term branch ranged from only 5 years with a 4% real rate of return on investments, 7 years with a 5% rate of return, and only 3 years with a 3% return.

At 31 December 2016, despite a more robust funded status due to the \$80 million transfer of reserves, the surplus between total income and total expenditure decreased to \$6.34 million from \$10 million the preceding year. Should that trend continue, then the period of equilibrium would decrease to approximately three years at the end of 2016, subject to a re-assessment at the triennial valuation as at 31 December 2017. **Therefore, in addition to an increase in the ceiling in 2018, an adjustment to the contribution rate would be required as from 1 January 2020 or earlier.**

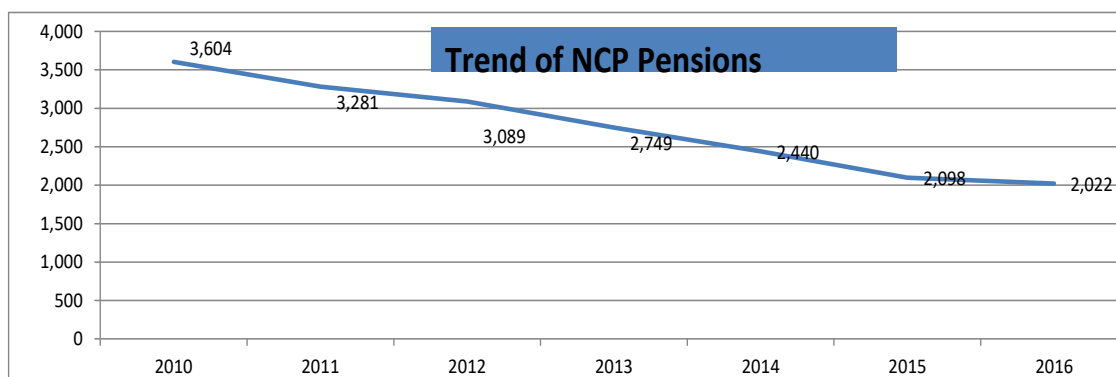
It is also reiterated that the projections are based on legal provisions in force, which are likely to be amended medium-term and long-term, such as the initial retirement age, which most countries are increasing gradually due to the longer life expectancy of populations and the added cost to national pension schemes. For these reasons, projections should be updated periodically. Nevertheless, the medium term projections provide sufficient evidence of the urgent need to introduce a series of amendments to the financing and benefit bases of the scheme.

c). **Impact of the Adjustment to Pensions**

Effective 10 February 2016 the Minister responsible for social security approved a proposal by the Board increasing contributory pensions by 5%, and a transfer of \$80 million from the EI branch to the Short-term branch, in order to strengthen the reserve position of the long-term branch, in effect since 2013. The minimum pension of \$47 per week now increases to \$49.35. The adjustment, effective 1 April 2016, had an impact on the pension cost of the long-term branch, by increasing total expenditure by 13.6% in 2016 (9.19% in 2015). Another 5% increase in 2018, once the ceiling is increased, would increase pension expenditure by \$2.6 million and partially offset the additional flow of income derived from the new ceiling. A lesser impact would be attained by limiting the adjustment to pensioners 65 years and over, to reduce the incidence of early retirement.

6. **Non-Contributory Pension Scheme (NCP)**

The valuation shows a steady reduction of pensions in force, due to a high level of mortality and terminations due to other causes. The cost of the program declined to 0.25% of insurable earnings at 31 December 2016 (0.29% in 2015 and 0.34% in 2014). Assuming no adjustments to non-contributory pensions or that any increase would be borne by the Government, the medium-term cost of the program is now assessed at 0.25% of insurable earnings with the present ceiling, or 0.22%, once the ceiling is updated. The actuarial cost would decline further if the minimum retirement age of females is set at 67 years, the same as for males, in accordance with international benchmarks, setting the eligibility two years higher than the basic normal retirement age of 65 years. Pending additional legal amendments would require a 20-year residence requirement for naturalized residents, and stricter eligibility provisions for beneficiaries in the same household, and for beneficiaries of retirement grants.



7. Self-Employed Scheme

The analysis shows that a significant proportion of self-employed persons have been able to qualify for pensions, with conclusive evidence of an intensive level of “adverse selection”. Most of the pensioners have opted to claim pensions before the statutory age of 65 years, and therefore 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, impacting negatively on the already mature situation of the long-term branch. The actuarial assessment shows actuarial costs almost twice the statutory contributions of 7% of insurable earnings.

The recommended set of amendments should be enhanced by additional provisions, eliminating the window for early retirement, the elimination of “employment injury” benefits (an unusual feature in a voluntary self-employed scheme), and the coverage of housewives (husbands). The actuary considers the proposed amendments to the self-employed scheme as a priority as from 1 January 2018.

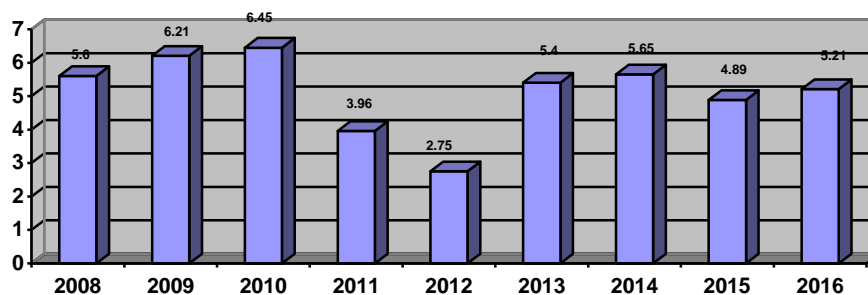
8. Investments

Investments are carried out on a Pooled Fund basis. The low inflation environment allowed real rates of return above the 3% to 4% actuarial benchmarks. 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. However, new asset allocations should be vested with high liquidity, as total consolidated contributions to the SSB are lower than total expenditure, requiring a portion of investment income to cover the deficit, a gap that would widen steadily on

the basis of the legal provisions in force, until the outdated ceiling on insurable earnings is adjusted to reflect actual earnings more adequately.

The analysis show 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 guaranteeing loans, 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.

Nominal Rates of Return on Investments (in percent)



The analysis also shows risk-adjusted returns more favourable in Statutory Bodies than in deposits in financial institutions, despite a higher risk, an assessment that should be carried out on a sequential basis.

Annex A shows an assessment of the Investment Portfolio, pursuant to the provision of the Third Schedule of the Act, Section 17, including formulae to assess risk-adjusted returns, financial risk management, and concepts of liquidity.

9. Internal Redistribution of the Financing Structure

The analysis of the benefit branches shows the need to modify the internal allocation of contributions by branch as shown below. This would ensure the long-term financial sustainability of the short-term branch and the employment injury branch, and to strengthen the level of contributions allocated to the long-term branch, which is facing current deficits between contributions and expenditure.

10. Schedule of Key Financial Amendments

a) Increase in the Ceiling (2018)

To allow a large proportion of the population a better correlation between benefits and actual earnings and to ensure the short term financial sustainability of the scheme, it is essential to adjust the ceiling on contributions of \$320 per week to approximately \$500 per week, either with a wage-band model or as a percent of actual earnings.

The proportion of insured persons at the top wage bands has increased steadily from 35% of active insured persons in 2013 to 40%, constraining the rate of increase in contributions while administrative expenditure and pension benefits have continued to increase at a higher rate, worsening the current deficit between contributions and expenditure.

b) Re-distribution of the Contribution Rate (Section 12 (1) of the Financial Regulations)

Jointly with the increase in the ceiling, the distribution of contribution income among the benefit branches should be amended as follows, to achieve a better correlation of contribution income to the financial requirements of the benefit branches.

Branch	2018 ^{a/}		2017	
	Insurable Earnings	Percent of contributions	Insurable Earnings	Percent of contributions
Short-Term	1.80	22.50	1.54	19.25
Employment Injury	1.00	12.50	1.96	24.50
Long-Term	5.20	65.00	4.50	56.25
Total	8.00%	100%	8.00%	100%

^{a/}Key priority of the set of Legal Amendments

The proportion of insured persons at the top wage bands has increased steadily from 35% of active insured persons in 2013 to 40%, constraining the rate of increase in contributions while administrative expenditure and pension benefits have continued to increase at a higher rate, worsening the current deficit between contributions and expenditure.

11. Increase in the Rate of Contributions (as from 1 January 2019/ 2020)

The 8% rate of contribution to the scheme has remained frozen since 2003, despite the actuarial maturity of the long-term branch. After deducting the statutory allocation to the Employment injury branch and the Short-term branch, the remaining allocation to the Long-term branch needs to be upgraded, in accordance with the scaled system of finance (partial capitalization) applicable to the branch. After deducting the cost of administrative expenditure and the cost of non-contributory pensions, the net share of contributions of the long term branch to cover the cost of age, invalidity, and

survivor's benefits is reduced to only 2.92% of insurable earnings. A 2% increase in the rate of contributions to ensure the financial sustainability of the branch is thus required, effective as from 1 January 2020, raising the consolidated contribution rate from 8% to 10% of insurable earnings, of which 7.20% should be allocated to the long-term branch (72% of contribution income) .

Concurrently, adjustments to the qualifying conditions and the retirement ages would also be required, as set forth in the second phase of legal amendments.

12. Administrative Expenditure

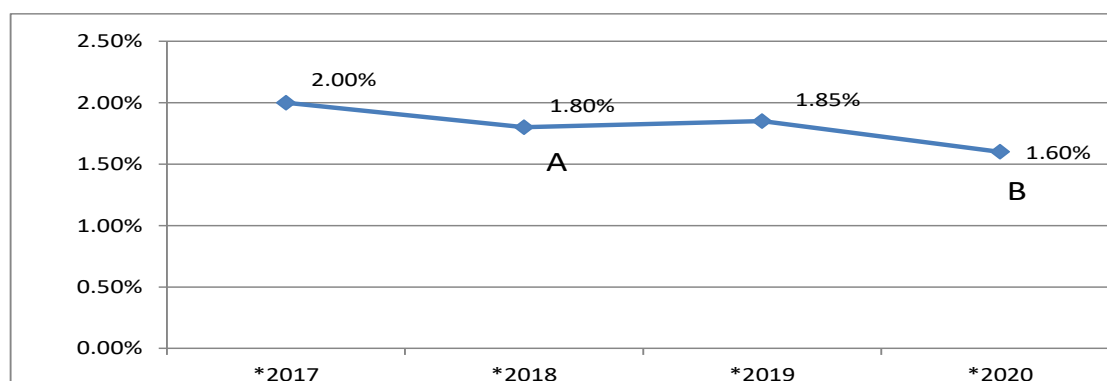
After a significant period of stagnant salaries, a more dynamic approach is under consideration by the Board, including retroactive salary adjustments as from 2015, assuming the ceiling is adjusted in 2018, then the **relative** cost of administrative expenditure should decline, with a further decline once the 8% rate of contributions is increased in 2020.

Projected Cost of Administrative Expenditure

(Assumes an increase of the ceiling early in 2018, and an increase in the rate from 8% to 10% in 2020)

Year	Percent of insurable earnings	Percent of contributions
2017	2.00%	25.0%
2018	1.80%	22.5%
2019	1.85%	23.0%
2020	1.60%	16.0%

Expected Reduction in the Actuarial Cost Administrative Expenditure



A. Increase in the ceiling

B. Increase in the rate of contributions

13. Complementary Pension Plans

Entities sponsoring complementary pension plans, including the Government of Belize might need to adjust the benefit formula in case the joint pensions exceed accepted benchmarks, such as 80% of salary, thus offsetting the financial requirements arising from the amendments to the national social security scheme.

14. Summary of Key Parameters (at 31December)

	2017 ^{p/}	2016	2015	2014
<u>Actuarial cost (as % of insurable earnings)</u>				
Short-term branch ^{a/}	1.65%	1.69%	1.78%	1.78%
EI branch ^{b/}	0.75%	0.72%	0.77%	0.91%
Long-term branch (increasing trend)	6.25%	5.72%	5.26%	5.28%
<u>Reserve position</u>				
Short-term branch (Section 17.1)	2.48	2.58	2.74	3.17
EI branch (Section 17.2) Surplus	13.0	11.9	26.1	24.1
Long-term branch (Fund ratio) ^{c/}	6.9	7.5	6.8	7.1
Period of equilibrium (declining) ^{d/}	2 years	3/4 years	5 years	6 years
<u>Special programs</u>				
<u>Non-contributory pensions</u>				
Number of pensioners (declining)	1,950	2,022	2,098	2,440
Actuarial cost (declining)	0.23	0.25	0.29	0.34
<u>Self-employed scheme</u>				
Number of pensioners	310	262	216	174
Actuarial cost (% of insurable earnings) ^{e/}	14.0%	13.0%	13.6%	9.0%

^{a/} Higher than the statutory contributions

^{b/} Lower than the statutory contributions

^{c/} Reserve ÷ total expenditure

^{d/} Equalization of total income and expenditure, subject to fluctuation based on the performance of the investment portfolio (3% real / basic assumption). Increase in the ceiling will extend the period of equilibrium.

^{e/} Scheme practically insolvent

^{p/} Projected

II

LEGAL BASES AND CONSOLIDATED FINANCIAL OPERATIONS

1. Legal Bases, Coverage and Benefit Provisions

The social protection system in Belize, as regards cash benefits, is composed of the national social security scheme administered by the Social Security Board (SSB), as a first pillar of pension protection, and 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, impacting 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 selected officials. Employed persons 65 years and over are covered only against employment injury. A summary of the benefit provisions is shown in Appendix D. 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.

Table 1
Distribution of Contributions by Benefit Branch

Branch	2018 (recommended)	2009/2017	2008
Short-term	22.50 (1.80)	19.25(1.54)	18.75(1.50)
Employment injury	12.50 (1.00)	24.50(1.96)	25.00(2.00)
Long-term	65.00 (5.20)	56.25(4.50)	56.25(4.50)
Total	100 (8.00)	100 (8.00)	100 (8.00)

^{a/} In parenthesis: rates as % of insurable earnings

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. Legal Amendments

A substantial proportion of the set of legal amendments is still under consideration by the Board. Proposed amendments would address a number of critical provisions dealing with the share of contributions among the benefit branches, the elimination of outdated contributory wage-bands, the provisions regarding eligibility for benefits, the non-duplication of invalidity grants and the self-employed scheme, among others.

Early in 2016, in addition to the transfer of reserves from the EI branch to the long-term branch, pensions in payment were adjusted by 5%, setting a minimum pension of \$49.35 per week rather than \$47 per week.

With retroactive effect as from 1 January 2011, the Benefit Regulations were amended by Statutory Instrument No. 89/2011 of 15 September 2011. The instrument amends sub-regulation (2) of Regulation 62, after the provision (d), adding a new paragraph as follows: “(e) survivor’s benefit with retirement benefit”.

The amendment allows a surviving spouse to receive, in addition to the retirement benefit earned on her own right, the survivor’s benefit payable on the death of the spouse, a rather uncommon feature for pension plans funded on a PAYG basis, wherein the financing of the individual pension would be borne in part by future generations. Before the amendment, only the higher benefit would be payable to the surviving spouse, which is the usual provision of social security schemes funded on a PAYG basis worldwide. The amendment will increase the actuarial cost of the long-term branch, by allowing all age retirees entitled to survivors’ pensions to continue to receive both pensions. Further, when both spouses are entitled to a retirement pensions, as the male usually would die before the female spouse, she will be the beneficiary of the joint pensions.

3. 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 less than 3% are voluntarily making contributions to the self-employed scheme.**

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 2015, declining steadily thereafter. 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 ageing 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 ageing 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).

4. 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 is focalized in two geographical areas (Belize City and Southern Belize) and is being expanded to a region in the north of Belize.

5. 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 earning 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 present ceiling has become obsolete, and once the financial crisis and its negative incidence on employment ceases, the stakeholders should reach an agreement to update the ceiling in order to achieve a better correlation between actual earnings and SSB benefits, including provisions for cuasi-automatic adjustments to the ceiling.

The amendments should also include phasing-out the obsolete wage-band system used to assess contributions, instead of payments based on actual earnings, which are easier to manage by enterprises in the formal sector of the economy.

The distribution by branch is as follows, with further adjustments still pending.

6. 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.

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	2016	2015^{1/}	2014
Contributions ^{1/}	80,092	77,377	72,070
Investment income	26,208	24,792	26,186
Other income ^{2/}	615	1,083	1,106
Total Income	106,915	103,252	99,362
<u>Benefits</u>			
Short-term branch	12,843	13,195	11,987
Long-term branch ^{3/}	45,082	39,687	36,367
Employment injury branch	5,920	6,373	6,614
Benefit Expenditure	63,845	59,255	54,968
Administrative and other expenses	19,739 ^{4/}	19,325	18,666
Total expenditure	83,584	78,580	73,634
Net income	23,331^{5/}	24,672	25,728

^{1/} Excludes GOB contribution to the NHI Fund and NHI operations. Unaudited data.

^{2/} Includes interest on rental income, staff advances and surcharges for late contributions.

^{3/} Includes non-contributory pensions.

^{4/} Excludes retroactive salary adjustments, bonuses, etc., to be recorded in 2017.

^{5/}Contributions less total expenditure (current income) yields a deficit of \$3.23 million.

^{1/}Restated by external auditors

8. Other Income

The rate of other income has fluctuated between 0.11% and 0.15% of insurable earnings, including interest on late contributions, staff advances and rental income, but declined to 0.06% in 2016. 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 as at 31 December 2016 and the preceding two years.

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

	2016	2015	2014
Cash and bank balance	29,345	17,913	24,300
Short-term investments	102,400	118,843	114,795
Long-term investments ^{a/}	345,144 ^{b/}	331,598	306,601
Accounts receivable and others	19,870	12,696	14,249
Fixed assets (net)	25,558	26,138	26,742
Total assets	522,397	510,188	486,687
Liabilities and deferred income	(9,635)	(8,798)	(7,897)
Net reserves and special funds	512,762	501,388	478,790

^{a/} Includes investment in Associates

^{b/} Includes \$155.2 million in associates.

The percent distribution of the investment portfolio at 31 December 2016 is as follows:

Table 4
Percent Distribution of the Investment

	2016	2015	2014
Short-term & other	33.9	29.4	37.0
Associates	29.7	47.2	37.2
Long-term	36.4	23.4	25.8
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 reserves 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	2016	2015	2014
Short-term	16,354	17,029	18,109
Long-term	428,315	348,367	338,333
Employment Injury	49,933	114,517	99,003
Disablement and Death	15,595	16,474	16,468
National Health Insurance Fund	1,960	1,889	3,558
Social Security Development Fund	1,094	2,070	2,277
Pension reserve	(489)	1,042	1,042
Total	512,762	501,388	478,790

10. Reserves as a Percent of GDP

Table 6 shows the consolidated SSB reserves as a percent of GDP, with a balance slightly above 14% of GDP (current prices) in the preceding three years.

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

	2016	2015	2014
(amounts in millions of BZ\$)			
GDP ^{1/}	3,542	3,500	3,398
SSB Reserves	513	501	479
As % of GDP	14.5%	14.3%	14.1%

^{1/}Current prices. Extrapolated from World Bank data (1.2% increase estimate for 2016).

11. Rate of Return on Investments

As shown in Table 7 the **Rate of Return on Assets (ROA)** has fluctuated significantly, and has been influenced by capital gains and provisions for non-performing investments. A nominal return of 5.21% in 2016 (4.89% in 2015), adjusted by a 1.1% CPI, yields a real (inflation adjusted) rate of return of 4.06%. **The Rates of Return of the Investment Portfolio assessed by the Investment Services were as follows: 2016 (6.5%), 2015 (6.0%), and 2014 (6.2%).**

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

	2016	2015 ^{1/}	2014
Net investment income	26,208	24,792	26,186
Nominal rate of return ^{1/}	5.22%	5.16%	5.65%

Average inflation rate	1.5%	(0.9)%	1.00%
Real return ^{2/}	4.06%	5.94%	4.60%

^{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 \$143,968 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.

^{3/} Restated by external auditors

Source: Statistical Institute of Belize

Due to the importance of the amount of reserves and of the investment return, it is imperative that a strategy be developed to ensure a prudent investment policy aimed at maximizing a return compatible with the safety of the capital, the latter being the primary consideration. Actuarial projections, in conjunction with expert advice on investments, provide a platform for a long-term investment strategy as from 2016.

12. 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 administrative expenditure of the basic scheme, with rather stable rates, due basically to a frozen level of remuneration, that will be reactivated as from 2016 on a retroactive basis.

Table 8
Distribution of Administrative Expenditure (amounts in thousands of BZ\$)

	2016	2015	2014
Total operating expenditure ^{1/}	19,739	18,650	18,666
Depreciation (administration)	(962)	(700) ^{2/}	(788)
Amortization (establishment)	(482)	(600) ^{2/}	(684)
Net operating expenses	18,295	17,350	17,194
Actuarial cost (total) ^{2/}	1.97%	1.93%	2.07%
Actuarial cost (net) ^{3/}	1.83%	1.80%	1.91%
Budget Performance Indicators			
as % of contributions	24.6%	24.1%	25.9%
as % of contributions + benefits	13.7%	13.7%	14.7%

^{1/} Excluding NHI expenses

^{2/} As percent of insurable earnings

^{3/} Excluding depreciation / amortization

^{2/} 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 branch of the total actuarial costs is shown in Table 9.

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

	2016 ^{a/}	2015	2014
Short-term branch	0.41%	0.42%	0.45%
EI branch	0.35	0.35	0.39
Long-term branch	1.22	1.16	1.23
Total	1.97%	1.93%	2.07%

^{a/}Excludes retroactive salary adjustments under consideration.

If salary adjustments become effective in 2017, the actuarial cost of administration would tend to increase further. 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 several District Offices, which is not the case in smaller schemes in the Caribbean.

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 have been transferred to the EI branch, as recommended by the actuary. As at 31 December the accounts had the following balances:

Table 10

	2016	2015	2014
(Amounts in thousands of BZ\$)			
Social Development Fund	43	269	726
Disaster Fund	1,051	1,889	1,551
Total	1,094	2,158	2,277

15. Trend of Active Insured Persons

The following tables show the trend of active insured persons by sector, sex and wage-band income. In particular, the proportion receiving earnings in the top income bracket has increased from 33% in 2011 to 40% in 2016, (Table 11.c) indicative that the ceiling of \$320 per week should be updated, as otherwise pensions will become irrelevant to a significant proportion of insured persons.

Table 11 (a)
Trend of Active Insured Persons

Years	Males	Females	Total	Rate of Increase
2016 ^{p/}	63,667	39,584	103,251	3.6%
2015	63,547	38,618	102,165	5.8%
2014	61,577	37,031	98,608	2.9%
2013	58,059	35,113	93,172	1.1%

^{p/}Provisional

Table 11 (b)
Percent Distribution by Age-Group (1%)
(31 December 2016)

	Males	Females
24 and less	23.7	24.7
25/34	33.5	30.9
35/44	23.7	21.5
45/54	13.9	14.5
55/64	4.5	6.6
65 and over	0.7	1.8
Total	100	100

The number of total active insured increased from 90,577 in 2012 to 103,251 in 2016 (13.9% in four years). These high rates are non-sustainable and indicative of an activation of the depressed labour market due to the recession. Employees in the private sector accounts for 80% of the total insured, but earnings are higher in the public sector and statutory agencies.

Table 11 (c)
Percent of Insured Persons by Earnings Bracket

Bracket (by week)	2016	2015	2014
Less than 110	11	13	15
110 < 300	49	49	49

300 and over	40	38	36
Total	100	100	100

Table 11 (d)
Percent Distribution of Insured Persons by Sex and Sector

Sectoral Distribution	2016	2015	2014
Private	80.5	80.7	80.3
Public	14.7	14.5	14.8
Statutory bodies	4.8	4.8	4.9
Total	100	100	100
Sex Distribution	2016	2015	2014
Males	61.6	62.3	62.6
Females	38.3	37.7	37.4
Total	100	100	100

16. Density of Contributions (weeks per year)

The average density of contributions was of 37.9 weeks in 2016 (76% on the basis of a maximum of 50 weeks per year), and higher for females (38.5 weeks) than for males (36.9 weeks).

Table 12
Density of Contributions

	Active Insured	Weeks paid	Density (weeks)
Total	102,165	3,874,240	37.9
Males	63,667	2,849,270	36.9
Females	29,584	1,524,974	38.5

17. Key Statistical Data (2016)

Population	374,083
Percent over 65 years	3.78%
Median age	22.4 years
Population growth rate	1.84%
Birth rate	24.3 per 1000
Death rate	6.0 per thousand
Life expectancy at birth	68.7 years
Fertility rate	2.9 children per woman
GDP (current prices)	US\$1,770 million
Unemployment rates	11%
Inflation rate	1.1%

18. Sectoral Distribution of Contribution (2013 and 2016)

District	2016	2013	Variation
Corozal	4.9	6.5	(1.6)
Orange Walk	6.5	6.1	0.4
Belize	43.7	45.0	(1.3)
Cayo	32.1	30.4	1.7
Stann Creek	11.1	10.5	0.6
Toledo	1.8	1.6	0.2
Total	100%	100%	-

III
ANALYSIS OF THE SHORT-TERM BENEFIT BRANCH

1. Financial Operations

Table 14 shows the financial operations of the short-term benefit branch. Total expenditure has consistently exceeded total income, with a \$0.397 million deficit in 2016, lower than in the previous three years due to lower claims for sickness and maternity benefits. Nevertheless, reserves keep declining gradually but still exceeding standard benchmarks due to the transfer of \$18 millions in reserves from the EI branch in 2014.

Table 14
Income and Expenditure of the Short-Term Benefits Branch
(Amounts in Thousands of Belize Dollars)

	2016	2015	2014
Contributions	15,417	14,895	13,874
Investment & other income	1,106	1,312	472
Total Income	16,523	16,207	14,346
Maternity allowances	3,268	3,616	3,146
Sickness benefits	8,620	8,575	7,882
Maternity grants	0.955	1,004	959
Total Benefits	12.843	13,195	11,987
Operational expenses	4,095	4,184	4,015
Total Expenditure	16,937	17,379	16,002
Income less Expenditure	(0.414)	(1,172)	(1,656)
Contingency Reserve	16,354	16,767	18,109^{a/}

^{a/}Includes transfer of \$18 millions from the EI reserves. Otherwise, the balance would have been negative.

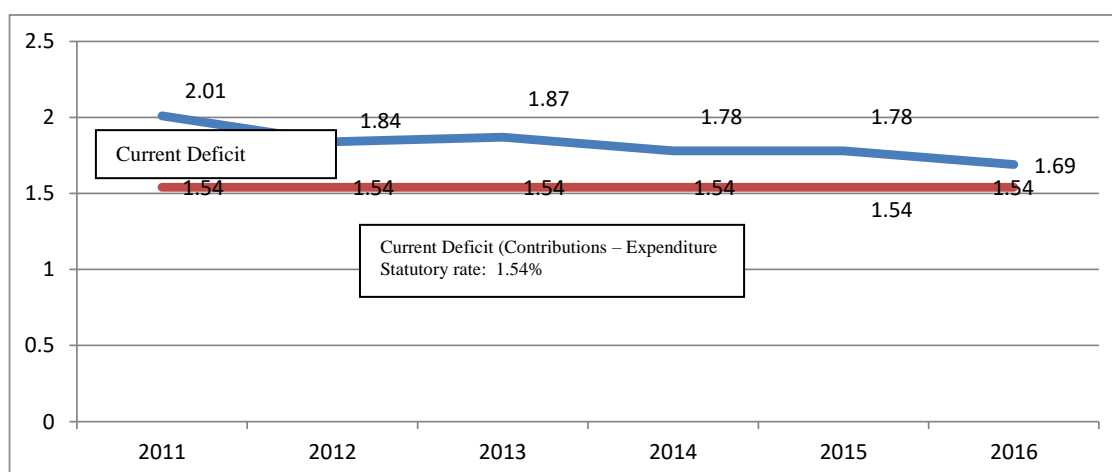
2. Income and Expenditure as a Percent of Insurable Earnings

Income and expenditure as a percentage of insurable earnings is shown in Table 15. Total cost (benefit and administrative expenditure) exceeds the contribution rate allocated to the branch. Investment income contributed to reduce the deficit, but as reserves have been declining, investment income also declined. The deficit declined to 0.04% of insurable earnings in 2016, (0.112% in 2015).

Table 15
Income and Expenditure of the Short-Term Branch as a Percent of Insurable Earnings

	2016	2015	2014
Contributions	1.540	1.540	1.540
Investment & other income	0.110	0.131	0.052
Total Income	1.650	1.671	1.592
Maternity allowances	0.326	0.364	0.349
Sickness benefits	0.861	0.886	0.875
Maternity grants	0.095	0.104	0.105
Total Benefits	1.283	1.364	1.330
Operating expenses	0.409	0.419	0.446
Total Expenditure	1.692	1.783	1.776
Income less Expenditure	(0.042)	(0.112)	(0.184)

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 16, at the end of 2016 the reserve stands above the minimum stipulated in the regulations.

Table 16
Statutory Minimum Level of Reserves (31 December)

	2016	2015	2014
	(amounts in thousands of BZ\$)		
Minimum statutory reserve ^{1/}	6,338	6,120	5,713
Actuarial reserve ^{2/}	16,354	16,767	18,109
Reserve ratio (actual / minimum)	2.58	2.74	3.17

^{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 17 shows the cost and funding ratios of the short-term branch, with the following summary:

- a) **The ratio of benefits divided by contributions** has been rather stable, with an 86% average in the last three years.
- b) **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 at 31 December 2016 was equivalent to one year projected expenditure, above the international accepted minimum of six months' total expenditure.**
- d) **The transfer of reserves 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 will start declining gradually and fall again below the statutory minimum in about 8 to 10 years.**

Table 17
Cost and Fund Ratios of the Short-Term Branch

	2016	2015	2014
Benefits ÷ contributions	0.83	0.89	0.86
Total expenditure ÷ contributions	1.10	1.16	1.15
Total expenditure ÷ total income	1.02	1.07	1.12
Fund Ratio ^{a/}	0.97	0.99	1.13

^{a/}Reserve ÷ total expenditure in the year

4. Frequency and Unit Cost of Sickness Benefit

The analysis for the period under review shows (Table 18):

- a) An average duration of terminated sickness cases of 5.75 days, in 2016 and 6.44 days in 2015, with no discernible trend.
- b) Average “morbidity rates” (days paid per insured per year) of 3.30 days in 2015/16, with a moderate rising trend.
- c) **Morbidity rates for females significantly higher than for males**, an anomaly 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 days, higher than the duration of terminated cases, and average days per insured in a calendar year of 3.10 days.

Table 18
Matrix of Sickness Incidence and Duration

	2016	2015	2014
Insured Population	Exposed to Risk (Active Insured)		
Males	63,667	63,547	61,138
Females	39,584	28,618	36,612
Total Active Insured	103,251	102,165	97,750
Duration of Terminated Cases			
Cases	3,169	3,655	3,463
Days paid	24,744	23,525	18,411
Average duration (days)	6.56	6.44	5.31
Incidence of Sickness and Cost per Case and per Day			
New cases	30,941	30,924	28,973
Days paid	278,903	291,934	275,232
Days per case	8.01	9.44	10.08
Case per insured	30.0	30.2	30.3
(Morbidity Rate) Days per insured *	2.70	2.85	3.05
Amount paid (in thousands)	\$8,620K	\$8,575K	\$7,882K
Cost per case	\$278	\$277	\$272
Cost per day	\$30.90	\$27.79	\$26.99

5. Actuarial Cost of Sickness Benefit

Table 19 shows the actual and projected actuarial cost of sickness benefits of 0.86% of insurable earnings in 2016, lower than in 2015 and on preliminary date.

Table 19

Average	Actual		Projected
	2016	2015	2015/17
Cases per 100 insured	0.30	0.31	0.30
Days per insured (Morbidity rate)	2.70	2.85	3.05
Cost per case	\$278	\$277	\$2.72
Cost per day	\$31	\$29	\$27
Cost per insured	\$83	\$88	\$84
Actuarial cost^{a/}	0.86%	0.89%	0.90%^{a/}

^{a/}As percent of insurable earning.

6. Trend of Maternity Benefits

The rates of maternity allowances declined slightly in 2014/15, as well as the frequency of maternity grants, due to reduced employment levels, as shown in Table 20.

Table 20
Actuarial Cost of Maternity Benefits

	2016	2015	2014
Active contributors	103,251	102,165	97,750
Female contributors	39,584	38,615	36,612
Number of allowances paid	1,272	1,285	1,240
Number of grants paid	3,168	3,329	3,187
Allowance paid per 100 females	3.29	3.59	3.39
Grants paid per 100 females	8.20	9.09	8.70
Allowances by 100 average contributors	1.25	1.31	1.33
Grants per 100 average contributors	3.10	3.41	3.42

7. Actuarial Cost of Maternity Benefits

The cost of maternity allowances has remained rather stable in the last three years, at an average of 0.36% of insurable earnings. For the period 2015/17 the average cost was assessed at 0.50% of insurable earnings, while the actual rate of 0.43% is slightly lower.

Table 21
Actuarial Cost of Maternity Benefit

	2016	2015	2015/17 ^{a/}
Actuarial cost (allowances)	0.33%	0.36%	0.38%
Actuarial cost (grants)	0.10%	0.11%	0.12%
Total	0.43%	0.47%	0.50%

^{a/}2014 actuarial valuation

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 will be monitored periodically.

The emerging experience is shown in Table 22:

Table 22

Year	Allowances as % of insurable earnings	Grants	Total
2016	0.33	0.10	0.43
2015	0.30	0.11	0.47
2014	0.35	0.11	0.46
2013	0.40	0.12	0.52
2012	0.38	0.12	0.50
2011	0.44	0.13	0.57
2010	0.41	0.13	0.54
2009	0.43	0.14	0.57

8. Actual versus Expected Experience and Projected Actuarial Cost

Table 24 shows a comparison between the actual and expected actuarial cost of the short-term branch benefits, with total cost in 2016 of 1.69% of insurable earnings, lower than anticipated. The actuarial cost estimate for 2015/17 (1.85%) will be updated again at the next triennial actuarial valuation as at 31 December 2017. No significant reductions should be expected until the ceiling of insurable earnings is updated, or until the former benefit provisions are restored on a partial basis. **The actuarial cost is higher than the present statutory allocation of 1.54% of insurable earnings (or**

19.25% of contributions), which is insufficient to keep the actuarial solvency of the branch on a long-term basis.

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

	Actual		Projected ^{a/}		
	2016	2015	(2015/17)	2014	2013
Sickness allowance	0.86	0.89	0.90	0.88	0.86
Maternity allowance	0.33	0.36	0.38	0.35	0.40
Maternity grant	0.10	0.11	0.12	0.11	0.12
Total benefits	1.29	1.36	1.40	1.34	1.38
Administrative expenses	0.40	0.42	0.45	0.44	0.47
Total	1.69	1.78	1.85	1.78	1.85

^{a/}Legal provisions in force

9. Sustainability of the Short-Term Branch

Early in 2014 the Board approved a transfer of \$18 million from the EI branch to the Short-term branch, thus restoring, albeit temporarily, the level of reserves above the statutory minimum. An update of the share of contributions is still pending; otherwise the level of reserves of the short-term branch would start decreasing again, but the level would remain above the statutory minimum medium term, provided the transfer of funds from the EI branch does not require amortization. A permanent sustainable financing structure requires a higher allocation of the share of contributions, which is assessed at 1.80% of insurable earnings.

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 have almost doubled the number of claims processed, generating a significant increase in the administrative workload, while increasing the SSB cost of sickness benefits. **A restoration of the waiting period will have no material incidence in the direct cost to employers, but it will reduce the SSB administrative cost.** A partial restoration of 2-days (lower than the usual 3-days in many CARICOM Schemes) would be advisable as from 2020.

It is also to be recalled that claiming sickness benefits payments for only one or two days, entailing additional lost hours of work, causes expenses for claimants and employers, and reduces productivity at the workplace, to the detriment of the cost of production of goods and services.

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.

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

	Insurable earnings
Actuarial cost, present legal provisions	0.90%
With a 2-days waiting period and a 70% rate	0.76%
With a 3-days waiting period and a 70% rate	0.67%

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. Due to the transfer of \$18 million to the short-term branch in 2014, the reserves declined from \$102.8 million as at 31 December 2013 to \$98 million at 31 December 2014, but increased again to \$114.5 million at 31 December 2015. The transfer of \$80 million in 2016 to the long-term branch reduced the reserve to \$49 millions at 31 December 2016, including a \$17.9 million surplus in 2016.

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

	2016	2015	2014
Contributions	19,623	18,958	17,657
Investment and other income	6,265	5,561	6,374
Total Income	25,887	24,519	24,031
Disablement grants	551	496	584
Employment injury (short-term)	2,569	2,322	3,098
Disablement benefits (actuarial value)	666	722	477
Death benefits (actuarial value)	25	543	486
Funeral grants	2	5	3
Total Benefits	3,813	4,088	4,648
Operating expenses	3,464	3,531	3,518
Total Expenditure	7,278	7,619	8,166
Income less Expenditure	18,609	16,900	15,865
Net Reserve (Short-term benefits)	49,933^{a/}	112,738	98,003

^{a/}Net of the \$80 millions transferred to the long-term branch on April 2017.

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 2016 were equivalent to 0.38% of insurable earnings or (0.42% in 2015), yielding a substantial surplus, which shows that the financing of the branch exceeds actuarial requirements.

Table 26**Income and Expenditure as a Percent of Insurable Earnings (EI Branch)**

	2016	2015	2014
Contributions	1,960	1.960	1.960
Investment and other income	0.626	0.552	0.707
Total Income	2,586	2.512	2.667
Disablement grants	0.055	0.051	0.065
Employment injury (short-term)	0.256	0.240	0.344
Disablement benefits (actuarial value)	0.067	0.075	0.053
Death benefits (actuarial value)	0.003	0.056	0.054
Funeral grants	0.000	0.000	0.000
Total Benefits	0.381	0.422	0.516
Operating expenses	0.346	0.351	0.390
Total Expenditure	0.727	0.773	0.906
Income less Expenditure	1.859	1.739	1.761

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 11.9 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
2016	49,933	4,183	11.9
2015	112,738	4,322	26.1
2014	99,003	4,055	24.1
2013	102,813	3,848	26.7
2012	79,744	3,790	23.9
2011	89,646	4,403	18.2
2010	68,021	4,995	13.6
2009	57,020	5,149	11.1

4. Incidence of Short-Term Injury Benefits

Table 28 shows the incidence and cost ratios of employment injury benefit, and table 29 shows the actual and expected costs.

Table 28
Incidence of Employment Injury Short-Term Benefit)

	2016	2015	2014
Cases paid	1,842	1,922	1,888
Amount paid (\$ thousands)	2,569	2,322	3,098
Average insured persons	102,700	100,002	95,461
Cases per 100 insured	1.79	1.92	1.98
Cost per case (\$)	1,395	1,200	1,641
Cost per insured (\$)	25.01	23.22	32.45
Actuarial cost (% of salaries)	0.256	0.240	0.344

The emerging trend shows that the anticipated incidence has been close to the actuarial expectations.

Table 29
Actual and Expected Cost of Injury Benefits ^{a/}

	Projected		Actual	
	2015/17	2016	2015	2014
Cases per 100 insured	2.00	1.80	1.92	1.98
Actuarial cost (% of salaries)	0.30%	0.26%	0.24%	0.34%

^{a/}Excludes medical expenses

5. Financial Trend of the Disablement & Death Benefits

The sub-branch operates on the basis of 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 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 Disablement & Death Benefits

	2016	2015	2014
APV disablement benefits	665,902	722,083	476,479
APV death benefits	25,139	543,257	486,394
Total APV	691,041	1,265,340	962,873
Net investment income	867,671	829,691	967,996
Total income	1,558,712	2,095,031	1,930,869
<u>Expenditure</u>			
Disablement pension	1,442,446	1,356,723	1,315,630
Death benefits	664,098	732,648	650,584
Total benefits	2,106,544	2,089,370	1,966,214
Excess of income over expenditures	(547,832)	5,660	(35,345)
Actuarial Reserve	15,594,510	16,474,646	16,468,895
<u>Key Indicators</u>			
Actuarial cost (new cases) ^{a/}	0.07%	0.13%	0.11%
Reserve ÷ benefit expenditure	7.38%	8.02%	8.36%

^{a/}APV of new cases ÷ insurable earnings

^{v/}Restated

6. Incidence of Disablement and Death Benefits

Table 31 shows the rates of accidents per 1000 insured persons due to EI accidents. The total accidents declined in 2016, according to preliminary data, but the cases of permanent incapacity rose slightly.

Table 31
Number of Accidents by Consequence and Rates per 1000 insured

Year	Number of Cases			Rates for 1000 insured		
	Medical Care only	Permanent incapacity	Deaths	Medical care only	Permanent incapacity	Death
2016	1,844	132	1	17.9	1.29	0.01
2015	1,922	127	3	19.2	1.27	0.04
2014	1,888	114	4	19.7	1.19	0.04
2013	1,804	286	1	19.6	3.18	0.01
2012	1,782	114	6	20.5	1.28	0.08
2011	2,150	127	7	23.3	1.47	0.08
2010	2,320	109	11	25.1	1.24	0.13
Average 2010/14	1,989	118	4	21.6	1.67	0.07

Table 32 shows the experience of disablement incapacity by degree of incapacity, with an average of 90% with a degree lower than 30%.

Table 32
Percent Distribution of New Cases of Permanent
Incapacity by Degree of Incapacity (2016)

Year	60% and over	30/59%	Under 30%	Total
2016	2	6	92	100
2015	2	3	95	100
2014	2	3	95	100
2013	1	12	87	100
2012	1	5	94	100
2011	4	4	92	100
2010	3	5	92	100
2009	2	9	89	100

7. **Trend of Pensions in Payment**

The statistics shown in Table 33 indicate a gradual increase of pensions in payment.

Table 33
EI Pensions in Course of Payment

	2016	2015	2014
<u>Disability Pensions</u>			
Number	469	465	459
Monthly amount (\$)	\$110,963	\$105,217	\$102,343
<u>Widows</u>			
Number	84	87	101
Monthly amount (\$)	\$30,671	\$31,020	\$32,650
<u>Orphans</u>			
Number	181	191	198
Monthly amount (\$)	\$27,461	\$28,882	\$28,561

9. **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.**

10. **Expected Cost of the EI Branch**

The triennial actuarial valuation at 31 December 2014 estimated total costs of 1% of insurable earnings for the period 2015/17. The estimated future cost is equivalent to approximately one-half the present allocation to the branch of 1.96% of insurable earnings.

The experience of 0.715% of insurable earnings in 2016 has been lower than the triennial average, but the rate is subject to fluctuation to be monitored before the next triennial valuation to be carried out at 31 December 2017.

Table 34
Actuarial Cost of the EI Branch
(as % of insurable earnings)

Benefit	2016	2015 (Actual)	2014	2015/17 ^{p/} (Expected)
Employment Injury	0.26%	0.32%	0.34%	0.35%
Disablement & Death Benefits (APV)	0.07	0.13	0.11	0.15
Disablement Grants	0.05	0.05	0.07	0.06
Death and Funeral Grants	0.01	0.01	0.04	0.04
Total Benefits	0.39	0.51	0.52	0.60
Administrative Expenditure	0.33	0.35	0.39	0.40
Total	0.72%	0.86%	0.91%	1.00%

^{p/}Projected at the 31 December 2014 triennial valuation.

11. Funded Status of the Disablement and Death Reserve

A direct analysis of the level of sufficiency of the Disablement and Death Reserve was performed. 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: \$15.54 millions (at 31 December 2016)

The present value of EI pensions in payment and the Fund Ratio is as follows assuming life pensions rather than conversion into age pensions at age 60.

Table 35 A
Funded Status of the EI/Disablement & Death Reserve
(at 31 December) ^{a/}

Discount rate	Present value (in thousands \$)	Fund Ratio ^{a/}		
		2016 ^{b/}	2015	2014
3%	\$35,475	45%	48%	59%
4% (basic)	\$31,374	51%	53%	66%
5%	\$28,067	55%	60%	74%

^{a/}Reserve ÷ APV of benefits

^{b/}Direct Actuarial valuation

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 35B shows a consolidated assessment of the EI branch. The surplus reserves of short-term benefits, assessed at 11.9 times the statutory minimum, compensates the deficit of the Disablement and Death Obligations, still yielding a consolidated surplus of \$28.593 million at 31 December 2016.

Table 35B
Consolidated Assessment of the Employment Injury Brand
(at 31 December 2016)

	Reserve	Actuarial Liability	Surplus (deficit)
	(Amount in millions of BZ\$)		
Short-term benefits	\$49.933	6.274 ^{a/}	43.659
Disablement death benefits	15.595	30.661	(15.066)
Total	65.528	36.935	28.593

^{a/}Estimates the statutory minimum reserve (Section 17.2 Financial Regs.).

13. Reallocation of the Contribution Rate

The recommended allocation of 1% of insurable earnings to the branch, rather than 1.96%, covers anticipated actuarial cost of the EI branch until the next triennial actuarial valuation, but reserves should continue to increase due to the material incidence of investment income. Therefore, even with a reduced allocation of contributions equivalent to almost one-half the present statutory allocation, the substantial reserve of the EI branch will continue to increase in the future.

14. 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.

A certain proportion of disablement pensioners might be in active employment, and also receiving a minimum pension of \$47 per week, as the degree of disablement does not preclude active employment. More thorough research of disallowed claims should be carried out by the SSB.

VACTUARIAL 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, showing the expected increase in pension benefits, with new pensions awarded exceeding the cost reduction arising from the mortality of existing pensioners. The analysis shows a 60% increase in the "current loss" (contribution less expenditure), a gap covered by a higher proportion of investment income. While contribution income rose by only 3.5%, due to a stagnant ceiling, a 13.6% increase in benefit expenditure yielded a substantial increase in the current loss, while the surplus of the branch, including its share of investment income, declined from \$10 million in 2015 to only \$6.37 million in 2016.

The substantial increase was focused basically on retirement benefits, due to the dual impact of a 5% pension adjustments as from April 2017, and acceleration in the number of early retirement pensions at ages 60 to 64 years.

The sharp decline in the actuarial surplus should be addressed early in 2018 by an adjustment of the contribution rate allocated to the branch, an increase in the ceiling on contributions, restrictions in the option of self-insured persons to opt for early retirement, and a 2% increase in the rate of contributions effective as from 1 January 2020.

When the surplus decreases to zero (period of equilibrium), branch reserves would start to decrease unless an adjustment to the contribution rate restores a positive operational balance and reserves continue to increase.

As from 2008 total expenditure began to exceed contributions, with the future increase in reserves arising exclusively from a declining share of investment income, a situation that was accelerated by the addition of non-contributory pensions to males, the adjustment of the basic rate to \$100 per month, and a 5% adjustment to pensions in 2016.

Operational surpluses, including investment income, are expected for approximately 3 years based on legal provisions in force, due exclusively to the incidence of investment income, and extending the growth of reserves until total expenditure exceeds total income, a process that could be delayed temporarily by adjustment to the ceiling on contributions and other amendments to the benefit provisions.

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

	2016	2015 ^{1/}	2014
Contributions	45,052	43,525	40,539
Investment & other income	18,584	18,135	19,478
Total Income	63,636	61,660	60,017
Retirement benefits	31,085	26,608	23,838
Invalidity benefits	3,449	3,509	3,073
Survivors' benefits	6,782	5,597	5,329
Funeral Grants	1,262	1,219	1,095
Non-contributory pensions	2,505	2,754	3,032
Total Benefits	45,083	39,687	36,367
Operating Expenses	12,179	11,609	11,132
Total Expenditure	57,262	51,296	47,499
Contributions less expenditure (current deficit)	(12,210)	(7,771)	(6,960)
Income less Expenditure	6,374	10,363	12,518
Actuarial Reserve	428,315	341,941	338,333
Fund Ratio ^{1/}	7.5	6.8	7.1

^{1/} Reserves ÷ total expenditure

^{2/} Restated

3. **Income and Expenditure as a Percent of Insurable Earnings**

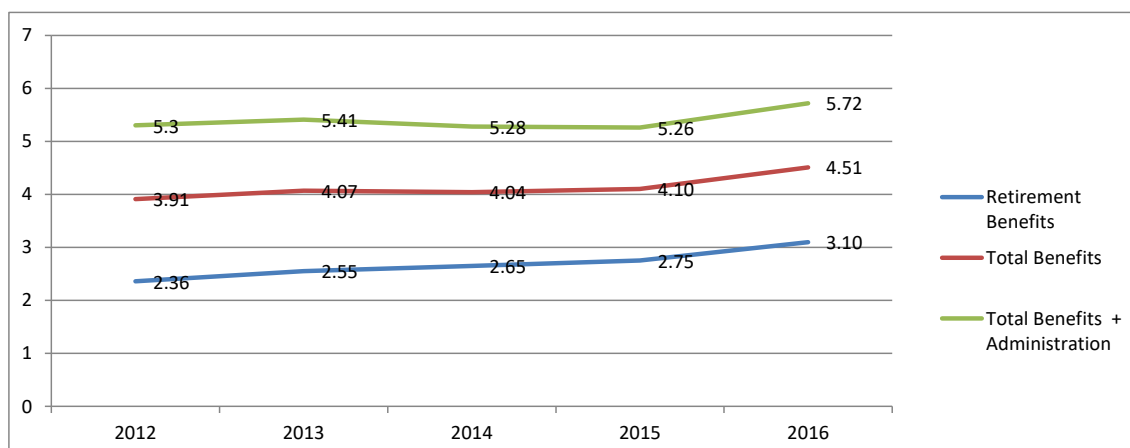
Table 37 shows the financial experience as a percent of insurable earnings. Total benefits rose to 4.5%, and total expenditure to 5.73% of insurable earnings, higher than the 4.5% allocated to the branch. The “current deficit” (contributions less expenditure) has been increasing steadily, a trend that should continue in 2017/18 unless a higher share of contributions is allocated to the branch and the ceiling is adjusted.

Table 37
Income and Expenditure as a Percent of Insurable Earnings

	2016	2015	2014
Contributions	4.50	4.50	4.50
Investment & other income	1.86	1.80	2.16
Total Income	6.36	6.30	6.66
Retirement benefits	3.10	2.75	2.65
Invalidity benefits	0.35	0.36	0.34
Survivors' benefits	0.68	0.58	0.59
Funeral Grants	0.13	0.13	0.12
Non-contributory pensions	0.25	0.28	0.34
Total Benefits	4.51	4.10	4.04
Operating Expenses	1.21	1.16	1.24
Total Expenditure	5.72	5.26	5.28
Income less Expenditure	0.64	1.04	1.38
Current Surplus (deficit) ^{a/}	(1.22)	(0.76)	(0.78)

^{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
Trend of Pensions in Payment (year-end)

	Retirement	Invalidity ^{a/}	Widows/ers	Orphans	Total Pensions	Rate of Increase (%)
2009	3,217	342	874	1,221	5,603	3.9
2010	3,497	354	951	1,217	5,972	6.6
2011	3,831	356	1,993	1,233	6,361	6.5
2012	4,214	346	1,063	1,250	6,813	7.1
2013	4,532	339	1,090	1,212	7,211	5.8
2014	4,855	358	1,175	1,297	7,685	6.6
2015	5,287	353	1,216	1,380	8,236	7.2
2016	5,799	376	1,331	1,471	8,967	8.8

^{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. Retirement Pensions by Age and Sex

Table 39 shows the distribution of retirement pensions in force, by age and sex. A significant number of pensioners (30%) are less than 65 years of age, and presumably are not engaged in active employment.

Table 39
Distribution of Retirement Pensions by Age and Sex (at 31 December 2016)

Age	Males	Females
60/64	1,050	699
65/69	1,276	668
70/74	674	295
75/79	407	199
80/84	199	84
85+	185	63
Total	3,791	2,008

6. Invalidity Pensions and Grants

Table 40 and 41 show the incidence of invalidity pensions awarded and of invalidity grants, indicators for the 2017 triennial valuation.

Table 40
Number and Frequency of Invalidity Pension Awarded

	Number awarded	Incidence Rate (per thousand)
2016	69	0.68
2015	56	0.56
2014	52	0.56

Table 41
Invalidity Grants Paid

	Number	Rate per 1,000 insured amount paid
2016	38	0.37
2015	57	0.57
2014	41	0.42
2013	53	0.57

7. Trend of Demographic Ratios

Table 42 shows the trend of demographic ratios between 2010 and 2016. The higher rate of increase took place for retirement pensions, with 5.62 pensioners per 100 active contributors in 2016. The consolidated ratio increased to 8.70 at 31 December 2016.

Table 42
Trend of Demographic Ratios
(At 31 December)

	2016	2015	2014
Demographic Ratios (Pensioners ÷ active contributors, in %)			
Retirement ^{a/}	5.62	5.21	4.96
Invalidity ^{b/}	0.37	0.35	0.37
Survivors ^{c/}	2.71	2.44	2.53
Total (actual)	8.70	8.00	7.86

^{a/}Excludes NC pensions

^{b/}Pension transferred to old-age category at age 60

^{c/}Includes orphans (51% of total)

8. 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 an updated net rate of 2.90%, as shown in Table 43.

Table 43
Distribution of the Statutory Contributions (Long-Term Benefits)
(excluding investment income)

	2016	2015	2014
Gross rate	4.50	4.50	4.50
Other income	0.04	0.04	0.04
Total contributions	4.54	4.54	4.54
Administrative expenditure	(1.22)	(1.16)	(1.23)
Grants ^{a/}	(0.20)	(0.20)	(0.20)
Non-contributory pensions	(0.22)	(0.28)	(0.34)
Net rate for contributory pension benefits	2.90%	2.90%	2.77%

^{a/}Includes all grants

9. Performance Analysis (2014 Valuation versus 2016 Results)

Comprehensive actuarial projections are carried out on the occasion of the triennial actuarial valuation, to be done at the close of 2017. However, the emerging data shows a faster increase in the number of pensions in payment.

The comprehensive triennial projections carried out at 31 December 2014 indicated the following trend of pensions in force, as compared to the actual experience and the projection as at 31 December 2017.

Table 44

	2014 Actuarial Valuation	Actual 31 December 2016	Estimate 31 December 2017 ^{b/}
Active insured persons	102,257	102,165	104,208
Number of retired pensions	5,604	5,799	6,300
Total number of pensions	8,685	8,967	9,200
Demographic ratio (age pensioners) ^{a/}	5.5%	5.6%	6.0%
Demographic ratio (all pensioners) ^{a/}	8.9%	8.7%	9.0%
Current deficit (contributions less expenditure)	\$11.1 million	\$11.76 million	\$14 million
Cost as % of insurable earnings ^{c/}	5.6%	5.7%	5.9%
Period of equilibrium	7 years	4 years	3 years ^{d/}

^{a/}Pensioners ÷ active insured, in percent

^{b/}Assumes legal provisions in force (no amendments)

^{c/}Benefits expenses as % of insurable earnings

^{d/}Legal provision in force. Increase by approximately 2.5 years assuming pending legal amendments enacted in 2018.

10. Potential Increase of Retirement Pensions in Payment

Statistical data shows the following number of active contributions eligible or close to becoming eligible for retirement pension.

Table 45

Age Group	Number
55/59	4,043
60/64	1,824
65/69	867
70 and over	93
60 and over	2,894

A total of 2,894 active contributors have 60 years of age and over, equivalent to 50% the total number of pensions in payment at 31 December 2016, and an additional 70% at 55/59 years of age. Detailed projections to be carried out at 31 December 2017 would assess the long-term trend. However, the data now shows a potential increase of retirement pensions in payment at an annual rate of almost 10% per year, assuming average retirement at 63 years of age.

11. Incidence of the Reallocation of Contributions to the Long-Term Branch

The allocation to the long-term branch of 65% of contributions rather than 56.25%, as recommended as from 1 January 2018, would increase the flow of funds to the branch by an estimated \$6.7 million in 2018. This would contribute, on a long-term basis, to extend the period of equilibrium of the long-term branch by approximately one year. As stated in Chapter 2, Section 9, the redistribution of contributions would not affect the financial solvency of the other two branches.

12. Summary of the Demographic and Formal Projections

As at 31 December 2014 the key actuarial projections were as follows: These projections, updated on a triennial basis, would be reassessed as at 31 December 2017.

a) Demographic Projection (31 December 2014)

Table 46

Summary of the Basic Demographic Projections (2014 Triennial Valuation)

Year	Number of Pensioners					Demographic Ratios ^{3/}	
	Number of Contributors	Retirement	Invalidity ^{1/}	Survivors ^{2/}	Total	Retirement Pensions (%)	All Pensions (%)
2011	86,551	3,799	340	2,292	6,361	4.4	7.4
2014	97,790	4,855	358	2,472	7,685	5.0	7.8
2017	102,257	5,604	330	2,701	8,685	5.5	8.5
2020	106,928	6,469	103	2,952	9,824	6.1	9.2
2025	122,152	8,217	445	3,422	12,084	6.7	9.9
2030	129,484	10,438	491	3,967	14,896	8.1	11.5
2040	136,817	16,840	599	5,531	22,771	12.1	16.6
2050	150,243	27,171	730	7,165	35,066	18.1	23.3
2060	154,553	43,839	890	9,629	54,358	28.4	35.2

^{1/} Invalidity pensions are converted into age pensions at age 60.

^{2/} Widows and orphans.

^{3/} Ratio of pensioners to active insured, in percent, excluding non-contributory pensions

b) Financial Projections (31 December 2014 Valuation)

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 provisions in force, **but assuming a dynamic and gradual adjustment to the ceiling and pensions in force in correlation with inflation, an assumption which is uncertain due to the period elapsed since the ceiling was adjusted in 2001. Rather, a substantial increase in the present ceiling should be expected. For these reasons, the projections are subject to material variations depending on the timing and nature of the proposed set of legal amendments.**

Table 47 presents a summary of the preceding financial projections, with the last line showing the ratio of total expenditure to insurable earnings in percent, an indicator of the “pay-as-you-go” (PAYG) premium of the branch. The funding requirements of the branch are naturally lower, since investment income provides additional resources, albeit at a decreasing rate, as shown below in the projection of reserves. With a static ceiling on insurable earnings, the negative gap between income and expenditure tends to expand steadily, yielding rising current deficits. **The experience shows that the 2016 current deficit already reached the 2017 target, a reflection of cost increases higher than anticipated in the long-term branch.**

The PAYG ratio (expenditure/insurable earnings) also 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 47
Summary of the 2014 Financial Projection (Present ceiling)
(Amounts in millions of BZ\$)

Year	Contributions	Total expenditure	Current surplus (deficit) ^{1/}	PAYG ^{2/} Ratio (4%)
2014	40.5	47.5	(7.0)	4.9
2015	43.5	50.9	(7.3)	5.3
2016	45.1	56.8	(11.7)	5.3
2017	44.7	55.7	(11.0)	5.6
2020	49.3	65.5	(11.1)	6.0
2030	67.4	113.3	(45.9)	7.6
2040	90.2	200.3	(110.1)	10.0
2050	118.4	361.2	(242.8)	13.7
2060	145.6	660.8	(515.2)	20.4

^{1/}Excludes investment income

^{2/} Ratio of total expenditure ÷ insurable earnings, in percent

c) **Projection of Reserves and Periods of Equilibrium and Sensitivities (2014 Valuation).**

Table 48 shows a basic projection of actuarial reserves, as a by-product of the statutory contribution rate and the financial projections, with a rate of return on investment of 4% per annum, rather than 5% as assumed in 2011, and also sensitivity tests of reserves and periods of equilibrium under alternative rates of interest of 3% and 5%, up to the year 2060. Periods of equilibrium range from only 5 years with a 4% rate of return to 7 years with a 5% rate of return and 3 years with a 3% return. It is also noted that once the reserves become negative, the higher the negative rate of return the higher would be the deficit.

Table 48
Summary of the Projection of Reserves and Period of Equilibrium
(2014 Valuation)
(Present of Equilibrium (Present ceiling)
(amounts in million of BZ\$)

Year end	Rate of Return on Investments		
	3%	4%	5%
2014	338	338	338
2017 (excludes \$80 Million transfer)	340 ^{2/}	351	362
2020	327	350	373
2025	258	303	351
2030	97	162	239
2040	(738)	(664)	(552)
2050	(2,965)	(3,037)	(3,038)
2060	(8,234)	(8,918)	(9,553)
Period of equilibrium ^{1/}	3 years	5 years	7 years

^{1/}Number of years when reserves start declining (as from 2014).

^{2/}\$340 + \$80=\$420 million. Actual reserve of \$428 million is close to the former projection.

VI
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 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 millions. 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.

Table 49
Financial Trends of the National Health Insurance Fund
Amounts in thousands of BZ\$

	2016	2015	2014
Total contributions (GOB)	17,000	17,025	15,834
Payment to providers	16,141	17,937	14,299
Operating expenses	778	757	729
Total expenditure	16,919	18,694	15,028
Excess of income over expenditure	81	(1,669)	806
NHI Reserves	1,960 ^{b/}	1,891	3,358

^{a/}Unaudited financial statements.

^{b/}Excludes claims pending payment

6. Financial Ratios

Key financial ratios have evolved as shown in Table 50.

Table 50
Key Financial Ratios

	2016	2015	2014
Benefits as % of contributions	95.8%	105.4%	90.0%
Total expenses as % of contributions	99.5%	109.8%	94.9%
Operating expenses as % of benefits	4.8%	4.2%	5.1%
Fund ratio (reserves ÷ total expenditure)	0.12	0.10	0.22
* In months	1.4	1.2	2.7

The analysis shows a level of reserves equivalent to only 1.4 months of expenditure, (1.2 months in 2015) 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 51 shows a summary of the financial operations by region, according to the NHI activity reports. Expenses in Southside Belize are equivalent to 42% of the total, as several services are provided only in Belize City. Expenses in the Northern Region account for only 7% of the total, with the cost of clinical services in that region were compensated by a reduction in South Side Belize City expenses.

Table 51
Financial Operations by Region
(percent distribution)

	2016	2015	2014
South Side Belize City	53	56	53
Southern Region	42	39	42
Northern Region	7	6	-
Total purchasing expenses	95	95	95
Administrative expenses	5	5	5
Total expense	100%	100%	100%

8. Cost of Benefits by Type of Service

Table 52 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 70% of total benefits expenditure, pharmaceuticals at 14%, and Lab tests 9%, with non-material secular variations.

Table 52
Benefit NHI Expenditure by Specific Service, (in thousands of BZ\$)

	2016	2015	2014
Primary Care (PCP)	10,957	11,226	9,802
Pharmacy	2,009	2,221	1,989
Imaging	617	686	533
Lab tests	1,361	1,450	1,213
Ophthalmology	207	240	213
Hospitalization	259	301	291
Total (both regions)	15,410	16,125	14,041

9. Membership Data

Table 53 shows the membership (beneficiaries) data for the last three years, with a 2.3% increase in the number of beneficiaries in 2016.

Table 53
NHI Membership Southside Belize and Southern Region (December)

	2016	2015	2014
BFLA	14,041	13,530	13,031
BMA	13,825	13,418	12,986
Integral	14,370	14,254	13,863
M. Roberts	13,856	13,733	13,669
Sub-total	56,102	54,935	53,549
Dangriga	16,838	16,327	16,988
Independence	13,890	13,515	13,637
Punta Gorda	13,093	12,724	13,164
San Antonio	9,917	9,939	10,102
Mercy Clinic	1,657	1,459	1,229
Sub-total	55,395	53,964	55,120
Total	111,497	108,899	108,669

10. **Actuarial Cost of the Program**

Table 54 shows the actuarial costs as a percent of the wage-base, showing estimated actuarial costs of 5.33% in 2016, as compared to 6.44% in 2015 and 5.56% in 2014, assuming a “notional” wage base of 30% the total SSB insurable earnings.

Table 54
Estimated Actuarial Cost of Benefits (2014 valuation)
(Amounts in thousands of BZ\$)

	2016	2015	2014
SSB wage base	1,001,150	967,262	900,866
NHI beneficiaries (average)	110,198	108,784	106,927
NHI wage-base (30%) ^{1/}	300,345	290,179	270,260
NHI benefit expenditure (\$)	16,141	17,937	14,299
Administrative expenditure (\$)	778	757	729
Total expenditure	16,919	18,694	15,028
Cost as % of NHI wage-base	5.33%	6.44%	5.56%
Cost per member per year	\$155	\$168	\$140

^{1/}Estimated average wages of the low income and indigent segment of the NHI target population.

NHI has been covering a rather limited range of benefits, excluding key services such as general hospitalization, surgery, drugs to out-patients, 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 insuring 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.

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 5.5% 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
ASSESSMENT OF THE INVESTMENT PORTFOLIO
(Third Schedule of the Act, Section 17)

1. Investment Portfolio

Table 1 shows the investment portfolio of the scheme at 31 December 2016, with a 35.5% allocation to equities (shares), and 22.9% in Certificates of Deposit at local banks.

Table 1
Investment Portfolio (in thousands of BZ\$)

	31 December 2016	Percent
Certificates of Deposit	100,078	22.9
Investment in Associates (Shares)	155,216	35.5
Government of Belize	20,000 ^{b/}	4.6
Treasury Notes	25,500	5.8
Utilities	53,798	12.3
Sub-Total	354,592^{a/}	81.1%
DFC Loan & Municipal Bonds	10,699	2.4
Agricultural Loans	40,446	9.2
Other Loans (Education / tourism / housing)	35,959	8.2
Provisions	(4,217)	(0.9)
Total	437,479	100%
Liquid holdings	145,578	33.2%
Non-Liquid holdings	291,901	66.8%

^{a/} Out of \$519 million assets, the difference represents cash accounts, receivables and fixed assets.

^{b/} To be reclassified as part of DFC Loan & Municipal Bonds below

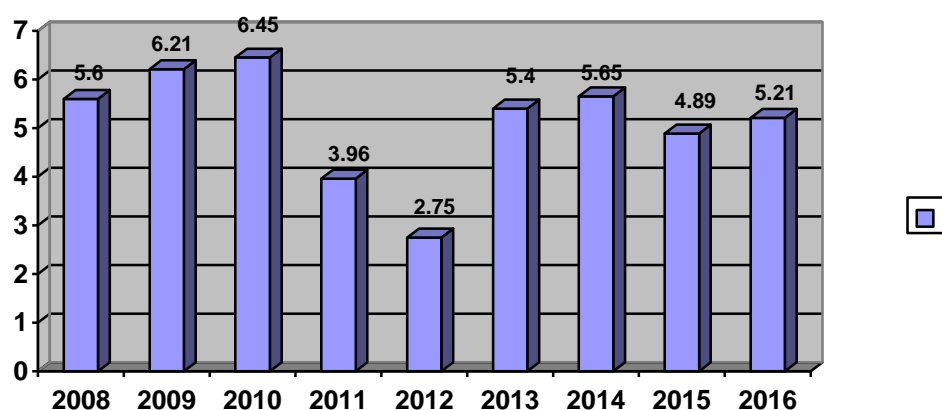
2. Rates of Returns on Investments

Pursuant to the legal provisions, an analysis, from an actuarial standpoint 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 a nominal rate of return of 5.21% in 2016 (4.89% in 2015, and 5.65% in 2014) as shown in Table 6, Chapter 2, a satisfactory performance arising basically from the allocations to domestic entities (BEL and BTL), which have been yielding dividends substantially higher than the interest payable by financial institutions.

Nominal Rate of Return on Investments

(in percentages)



3. Sectoral Distribution of the Investments

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 two fiscal years the Board increased the allocation in Shares and reduced the proportion in other categories.

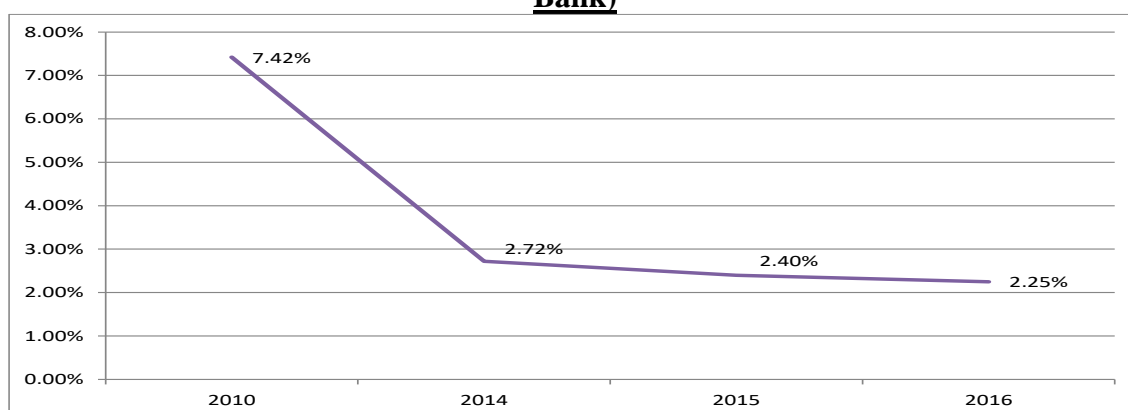
Table 2
Percent Distribution of the Investments (at 31 December)

	2016	2015	2014	2013
Short-term & other	33.4	29.4	37.0	31.7
Associates	40.3	47.2	37.2	39.1
Long-term	26.33	23.4	25.8	29.2
Total	100	100	100	100

4. Trend of Interest Rates

Central Bank data shows the following average rates by the banking sector, with a sharp decline in passive rates as from 2011.

Yield of Time Deposits (Central Bank)



With latent inflation rates estimated at 3% for 2017, (the Statistical Institutions of Belize has assessed a 1.8% cumulative inflation rate the first quarter of 2017, due basically to oil prices), the real (inflation adjusted), the low rates of return on cash deposits at the Commercial Banks would contribute to reduce the average rate of the portfolio below the assumed actuarial parameters. Therefore, rates of return on term deposits are not attractive at present from a financial standpoint, apart from the fact that the supply of medium-term deposits is very limited at present by the banking sector.

At 31 December 2016 the distribution of the investments shows liquid holdings equivalent to one-third of the portfolio. The gradual maturity of the scheme will have an impact on the liquid position of the scheme. Therefore, the SSB needs to improve the rate of return of the investment portfolio to address rather depressed rates payable by the banking sector on term deposits.

5. 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 current expenditure of two months average expenditure over the preceding three financial years. The amount as at 31 December 2016 would be equivalent to \$13 millions. The \$29.2 million cash amount recorded in the financial statements at that date complies with the aforementioned requirement.

6. Diversification of the Portfolio

As the real return of Term Deposits, inflation adjusted, are below the actuarial rate, a reduction in the asset allocation on Term Deposits and an increase in obligations at the Central Bank would enhance the SSB ability to obtain a real rate of return on the investment portfolio in accordance with the actuarial recommendations.

Meeting the demand of investment by the private sector should be subject to the availability of funds, after a suitable allocation of funds in Central Bank obligations have been achieved. 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 of liquid returns.

7. Joint Financing Strategy

In an emerging environment of constrained SSB reserves to expand the portfolio of private sector loans, consideration to joint financing by the SSB and private banks would also contribute to a better balance between the supply and demand for private sector loans.

8. 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 in 2016 by a lower return of the investment portfolio and higher pension expenses, including a 5% adjustment to pensions in payment as from 1 April 2016.

9. Policy Recommendation

In view of the above, the actuary's recommendation concerning the liquidity position of the SSB for 2017 has been updated as follows: **“As a general guideline, the actuary advises to keep the allocation of liquid investments at approximately 20% of the investment portfolio, or a minimum of \$50 million in cash, bank deposits and Central Bank obligations (Bills and Notes), subject to an update at the close of 2017”.**

10. 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.

$S = R_p - r / SD$, where **R_p**=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

$$\begin{aligned} \text{Term deposits} &= (0.025 - 0.050) / 0.05 = \mathbf{-0.50} \\ \text{Associates \& loans} &= (0.065 - 0.050) / 0.10 = \mathbf{0.12} \\ \text{Total portfolio} &= (0.0462 - 0.050) / 0.06 = \mathbf{-0.05} \end{aligned}$$

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 at the close of 2016 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 adjustments), rates payable on new loans should exceed 7.8% to 8%, to yield a risk adjusted return compatible to the Central Bank Notes.

11. Summary

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. Commercial lending parameters for collateral 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 of 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 as from 1 January 2018.

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, without a compensatory transfer of funds, impacting negatively on the actuarial situation of the Long-Term branch. However, the contribution rate was increased by 1% of insurable earnings and assigned in its entirety to the long-term branch.

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

A thorough review as from March 2008 to address unwarranted NCP and to introduce enhanced evaluation procedures has resulted in a steady reduction in the number of NCPs, as shown below. At present, the basic pension of \$100 per month is equivalent to 49% the minimum age pension of \$47 per week.

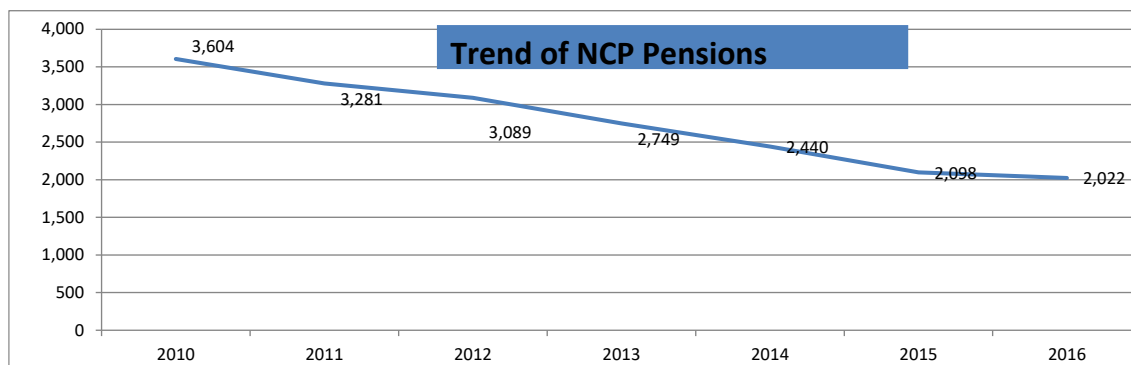
2. Trend of Pensions in Payment

The total number of NCPs has declined steadily from a peak of 4,934 early in 2008 to 2,098 pensions in payment at December 2015. The mortality of pensioners and more thorough evaluation procedures contributed to offset the abnormal surge of pensions awarded during the initial phase of operations.

The proportion of males continues to represent approximately one-third the total numbers of pensioners, while the proportion of pensions in force in the Districts of Orange Walk and Belize represent 35% of the total, while San Pedro shows very few beneficiaries.

Table 1
Trend of NCP Pensions (at 31 December)

	2016	2015	2014
<u>Number of pensions in payment</u>			
Males	666	713	835
Females	1,438	1,385	1,605
Total	2,022	2,098	2,440



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 ^{a/}	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)

^{a/} Financial statements

4. Rates of Award and Terminations

Table 4 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 a 11.2% reduction in the number of pensions in force.

Table 4
Rates of Award and Terminations of NCP
(in percent)

	2016	2015	2014	2013
Death	(5.6)	(7.3)	(6.0)	(5.6)
Other	(5.3)	(10.0)	(6.3)	(6.9)
Sub-total	(10.9)	(17.3)	(12.3)	(12.5)
New awards	7.3	3.4	1.1	1.7
Net increase (decrease) ^{a/}	(3.6)	(13.9)	(11.2)%	(10.8)%
Balance at 31 December	2,022	2,098	2,440	2,749

^{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:

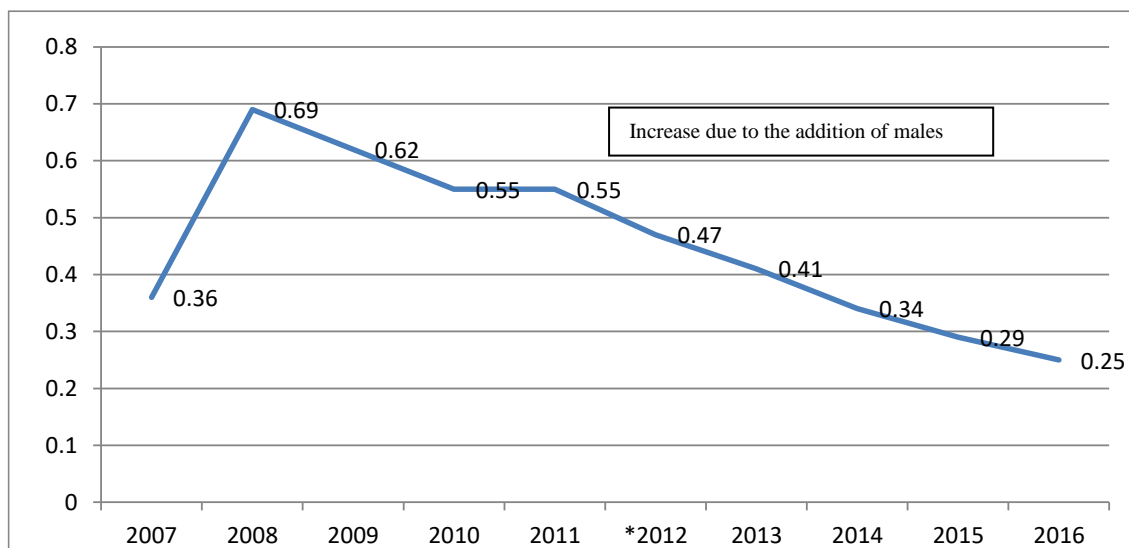
Table 3
Actuarial Cost of NCP Benefits

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	0.29%
2016	0.25%

* Increase due to the addition of males

At the 2011 triennial actuarial valuation the PAYG cost of NCP was projected at an average of 0.50% of insurable earnings, with mortality of pensioners offsetting the award of new pensions to a significant extent. The 2014 triennial valuation anticipated lower long-term actuarial cost, due to a steady reduction in the number of NCP in force, assessed at an average of 0.38% of insurable earnings. 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 at 31 December 2016, shows actuarial costs of 0.20% of insurable earnings. Raising the initial eligibility age to 67 years for females would reduce the medium term cost average further.

Actuarial Cost of NCP Scheme
(% of insurable earnings)



6. Projected Benefit Expenditure and Extension of the Period of Equilibrium

In the event the Government agrees to assume the cost of NCP as from 1 January 2018/19 the period of equilibrium of the long-term branch would be extended by 1.0 years.

An alternative option would be to freeze the awarding of NCPs by the SSB, with the Government responsible for covering the cost of future pensions by financial transfers to the SSB. Under this scenario the NCP expense borne directly by the SSB would decline steadily and become non-material in fewer than 10 years, due to the advanced age of those receiving pensions in payment.

In the event that the SSB is unable to transfer the payment of NCPs to the Government, cost containment strategies should continue to be applied by the Committee, in order to lessen its financial incidence on the scheme, including the enactment of the legal amendments to the NCP scheme; in particular, the increase to 67 years as the initial eligibility age for females, and the 20 year residency requirement for naturalized persons.

7. 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

PERFORMANCE ANALYSIS OF THE SELF-EMPLOYED SCHEME

1. Registered and Active Contributors

The voluntary self-employed scheme started on 1 January 2003 and the numbers of active contributors have remained stable in the period under review with an effective coverage of three percent the number of self-employed persons in the country. **This is a rather 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 most legislations are not considered as self-employed.**

Table 1 show that the coverage rate has been decreasing steadily, from 26% of registered self-employed persons as active contributors in 2010 to only 21% in 2014. An assessment of why such a large proportion of registered self-employed persons are not on active status should be carried out by the SSB.

Global statistics show 33,000 eligible self-employed persons in Belize, of which 97% are not actively making contributions in the SSB’s voluntary self-employed scheme.

Table 1
Registered Self-Employed and Active Contributors by Year

Year	Active Insured Self-employed	Rate of Increase	New Registrations	Cumulative Registrations	Coverage Rate (Active / Registered) In percent ages
2012	1043	9.9%	441	4409	23%
2013	1,032	(1.1)%	391	4,800	22%
2014	1,094	6.0%	396	5,196	21%
2015	1,197	9.4%	400	5,596	21%
2016	1,389	16.0%	521	6,117	23%

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 a rather high proportion of self-employed persons have declared low notional earnings, as compared to the active employed persons, while at the high income range the situation is reversed, with the proportion of employed persons exceeding by far that of the self-employed.

The differences specified above confirm that a high proportion of active self-employed persons have opted to declare unrealistically low notional earnings,

in the expectation of obtaining a minimum life pension of \$47 per week, plus short-term benefits, with contributions of only \$4 to \$6 per week, resulting in a negative incidence on the actuarial situation of the scheme.

Table 2
Percent Distribution of Active Insured by Wage-Group (2016)

Income Range	Weekly Wage-group	Percent Distribution	
		Self-employed	Employed
Low	Less than 110	31%	11%
Middle	110/300	44	49
High	300 and over	25	40
	Total	100%	100%

3. Distribution of the Self-Employed by Age-Group

Table 3 shows that **20%** of the active self-employed are **55 years and over**, as compared to only **7%** in the general scheme, an indicator of “adverse selection” by many self-employed persons in order to obtain a “financial gain” by participating in the self-employed scheme. If “registered” self-employed persons who have ceased to make contributions re-activate their participation before reaching the normal retirement age and qualify for a pension, the number of potential future self-employed age pensioners might be substantially higher than the expected number based on their active contributions, with a potential significant increase in cost and actuarial liabilities.

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

Age-Group	2016	2015
Under 35	20	22
35/54	61	59
55 and over	19	19
Total	100	100
Males	47	46
Females	53	54
Married ^{a/}	66	64
Non-married ^{b/}	34	36

^{a/} Includes common law unions

^{b/} Single, divorced, widow, legally separated

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

- a) Table 4 shows the frequency of short-term benefit claims by the active self-employed persons, while table 5 shows the distribution of claims by type of benefit. The data shows a reduction of the incidence rate for short-term claims.

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

Year	Number of Claims (Short-term)	Number of Active Self-Employed *	Incidence Rate	Sickness Benefit Only
2012	212	1,043	20.3%	15.2
2013	208	1,032	20.2%	15.9
2014	170	1,091	15.6%	12.5
2015	184	1,197	15.4%	13.6
2016	221	1,389	15.9%	13.8

*Note: Active Self-Employed includes Housewives and Househusbands.

Table 5
Percent Distribution of Self-Employed Claims by Benefit Type (Short-term Branch)
Short-Term benefits (2014)

Benefit Type	2016	2015	2014
Funeral Grant	-	1.1	-
Injury Benefit	5.0	2.2	7.1
Maternity Benefit	3.1	4.9	5.2
Maternity Grant	5.4	3.8	7.1
Sickness Benefit	86.5	88.0	80.9
Short-term	100	100	100

5. Pension Benefits to the Self-Employed

Table 6 shows the number of pensions awarded to the self-employed, with a ratio much higher than for employed persons. In only 14 years of operation 213 retirement pensions have been awarded to the self-employed, equivalent to 15% of the total population of active self employed, whereas in more than 30 years of operation less than 5% of employed persons have been awarded retirement pensions. It is also noted that in the general scheme only 32% of retirees are females, while the self-employed statistic shows 49% of females, and, even more relevant, **a high proportion of retirees opted to claim the pension before reaching the age of 65 years, with the SSB unable to determine whether the beneficiary continues in active work, as the individual has no employer.**

The aforementioned experience shows conclusively that self-employed persons are actively taking advantage of the faulty design of the self-employed scheme, obtaining life pensions after having paid contributions for a minimal number of years, at lower notional earnings, qualifying for the minimum pension of \$200 per month, with actuarial liabilities for pensions in payment estimated at more than \$5 million, and more than double that amount for the active insured self-employed, having paid a fraction of that (after discounting short-term benefits), yielding a substantial actuarial deficit to be borne by the general 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, almost one-fifth of the Self-Employed are 55 and more years of age, and the incidence of Short-term benefits are lower than in the general scheme.

In view of the above, in addition to previous former legislative amendments, it would be advisable at least to require the attainment of 65 years of age to qualify for a retirement pension by the self-employed.

Table
Cumulative Pensions Awarded, by Category

	2016			2015			2014		
	Males	Female	Total	Males	Females	Total	Males	Female	Total
Retirement	121	92	213	100	77	177	81	60	141
Invalidity	13	2	15	4	8	12	4	5	9
Disablement	13	-	13	13	0	12	11	-	11
Survivors	16	5	21	10	5	15	8	5	13
Total	163	99	262	127	90	216	104	70	174

6. Comparative Demographic Ratios (General versus Self-Employee Schemes)

Table 6

	General Schemes	Self-Employed Scheme
	Pensioners ÷ active contributors, in %	
Retirement	5.62	15.33
Invalidity	0.37	1.08
Survivors	2.71	1.51
Total	8.70	17.92

Table 6 shows that in only 13 years, the maturity of the Self-employee 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 pensions 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 eg the long-term branch.

Table 7
Belize: Number of Benefits Paid to Self-Employed Insured Persons
by Benefit Type and Amount Paid
2016

Benefit Type	Number of Self-Employed	Amount Paid
Total	453	1,113,029
Short-Term	221	\$89,186
Sickness Benefit	191	\$61,444
Maternity Grant	12	\$3,600
Maternity Benefit	7	\$15,120
Employment Injury	11	\$9,022
Funeral Grant	0	\$0
Funeral Grant Employment Injury	0	\$0
Long-Term	232	\$1,023,843
Death Benefit	2	\$21,727
Disablement Pension	11	\$34,471
Invalidity Pension	9	\$28,489
Retirement Pension	194	\$867,087
Survivors Pension	16	\$72,068

Source: Social Security Board

7. **Financial Performance (2016)**

Table 7 provided by the statistical area shows the widening gap between contributions and expenditure of the self-employed scheme.

Financial Performance of the Self-employed (2016)

	2016
Contributions	\$662,182
Benefit Expenditure	(1,113,029)
Share of administrative expenditure	(189,000)
Total cost	(1,302,029)
Net deficit	(639,847)

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 9. Such deficits are funded by internal transfers from the general scheme, that will worsen over time the actuarial situation of the long-term branch. The actual liability of pensions in payment at 31 December 2016 is estimated at approximately \$12 million.

Table 7
Actuarial Cost of the Self -Employed Scheme
(in percent of insurable earnings)

	2016	2015
Contributions	7.0%	7.0%
Short-term benefits	0.9	1.3
Long-term benefits	10.6	10.8
Administrative expenditure	1.5	1.5
Total expenditure	13.0%	13.6%
Surplus (deficit)	(6.0)%	(6.6)%

9. Future Scenario of the Self-Employed Scheme

The projection shows a significant increase in the number of Self-employed pensioners, and a quasi-static number of active contributors. Should this trend continue, the demographic ratio (pensioner ÷ active contributors), will increase from 16.9% in the close of 2015, to 37.6% in three years, and rising to over 50% in only 12 years.

Assuming an average pension of 40% of average insurable earnings, the cost of long-term benefits in 12 years would be equivalent to 20% of salary. Adding 1% for short-term benefits and 2% for administrative expenses, yields total costs of 23% salaries as compared to voluntary selective contributions of only 7% of salary. The substantial deficit would be compensated by cross-subsidies by the general scheme.

Table 8

Year	Active contributors	Total pensioners	Demographic ratio (year end)
2012	1,043	113	10.8%
2013	1,032	142	13.7
2014	1,091	175	15.9
2015	1,100	218	16.9
2016	1,389	262	17.9
2018 ^{a/}	1,480	331	22.3
2021	1,510	465	30.8
2024	1,540	602	39.1
2027	1,570	717	45.6
2030	1,602	783	48.8

^{a/} 2% rate of increase (2015 / 30). Include decreasing credits as employed person

10. Conclusions and Recommendations

The analysis shows that the performance of the self-employed scheme has been deficient, **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.**

Benefits as part of the scheme, including pensions earned on a dual basis (employed and self-employed), and “employment injury” benefits that cannot be attested by an employer or verified by the SSB, that already exceeds the 7% rate of contributions, which is lower than the 8% rate payable by and on behalf of employed persons.

Despite participation by the self-employed, the statistical data shows a declining incidence of sickness claims, as measured by the number of sickness claims allowed in relation to the population at risk

ANNEX D
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 an husband on the occasion of his wife's confinement if his wife is not entitled to the grant.

Conditions for

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 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 each 50 contributions (excluding special credits) in excess of 500 up to 750; and 1% for each 50 contributions in excess of 750.

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 each 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 <u>paid</u> and not less than 110 contributions paid or credited in the last five years, and not less 5 contributions paid in the last 13 weeks.
Special credits:	Claimant satisfying contribution conditions is 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 each 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 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: \$47 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 a 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.

7

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 maximum of 26 weeks.

Minimum pension: \$49.35 per week.

Disablement benefit

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

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

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

Funeral grant: \$1,500.

H. Non-Contributory Pensions

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

ANNEX E

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 amount of insurable earnings.

Defined-contributions 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 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.

ANNEX F

BELIZE

SOCIAL SECURITY BOARD

**WHITE PAPER ON THE WAGE BANDS AND CONTRIBUTIONS BASED ON
ACTUAL EARNINGS**

BELIZE
SOCIAL SECURITY BOARD
White Paper on the Wage Bands

1. The legal provisions of the SSB drafted by an ILO consultant prior to the inception of the scheme stipulated contributions based at the middle-point of wage bands. The objective was to facilitate employers, who at that time managed payrolls by non-computerized tools, the assessment of contributions. At present, the wage bands system is deemed as obsolete and has been replaced by contributions based on actuarial earnings, **up to a ceiling.**

I. Increase in the Ceiling

2. The priority set of legal amendments include an adjustment to the outdated ceiling on contributions, which was originally set at \$130 per week at the inception of the scheme in 1981, raised to \$320 in 2001, and has remained frozen since then.

3. In principle, expanding the ceiling to approximately \$500 per week has been under consideration. This would generate an inflow of contribution income, but also higher benefit expenditure, as the entitlement of new claimants with earnings above the present ceiling would also increase. Insured persons close to the normal retirement age would be able to access pensions based on the new ceiling for life, having paid updated contributions for only a few years, generating “wind fall” gains that should be moderated by transitory provisions. Very high increases on the ceiling (\$800 to \$1,000 per week), would have a negative incidence on employers’ labour costs and cause a more in-depth incidence on “wind fall” gains, while adjustments to approximately \$500 / \$600 per week would meet the key objective of a national social security scheme to provide a “**basic level of social protection**”. Additional coverage by high earnings individuals should be sought by complementary pension schemes.

4. The actuary considers an increase in the ceiling as a top priority, providing additional contribution income to allow an adequate financial development of the scheme until the 8% rate of contributions is increased early the next decade. It would address: i) the wide disparity between actual and insurable earnings for a large proportion of insured persons, and ii) provide also additional funds to meet the widening gap between contributions and expenditure. The latter the ceiling is increased, the less effective the transitional impact on the period of equilibrium.

II. Contributions and Benefits based on Actual Earnings versus Wage Bands

5. On the contribution side, the financial incidence would be significant only for insured persons on the present top wage band (\$300 to \$340 per week, with a \$320 mid-point), as most insured persons would have earnings in excess of \$340 per week.

6. Therefore, the new methodology should yield marginal higher contribution than under the present wage-band methodology only for the top wage-band. At the middle or lower wage bands the number of insured persons and the insurable earnings, rather than skewed towards the top range of the wage band, is spread on both sides.

7. The replacement of the wage bands by contributions (and benefits) based on actual earnings could take place concurrently or after the increase in the ceiling on contributions. If prior or concurrently, the need for additional wage bands up to the new ceiling would be avoided.

Contributions would then be based on actual insurable earnings (salaries or wages) up to the new ceiling. Under any of the alternatives above, a transitional phase should be provided for, to allow employers to adapt their payroll procedures (about six months).

8. It might appear that the adoption of contributions and benefits based on actual earnings rather than wage bands would imply a complex structural reform. On the contrary, it is a simple matter of assessing contributions, rather than at the midpoint of the \$40 wage band, above or below the median, which would imply **lower** contribution by employers and employees with earnings below the midpoint, and **higher** contributions by those with earnings above the mid-point. As the maximum deviation on each side is of \$20, the difference in contributions **would not be material and could be cost-neutral for many employers**, except for the top wage band (\$300 to \$340), with a skewed distribution on the high side. The maximum combined amount of additional contributions after the amendment **up to the present ceiling** is estimated at a maximum of 4% the total assessed contributions in 2016.

Distribution of Contributions (Employer / Insured Persons)

9. Due to the legacy incidence of a 6/1 ratio at the inception of the scheme, the financial structure of the scheme is borne mainly by the employer. It pertains to the stakeholders (Employers / Unions / Government) to address this issue once the contributory ceiling is increased, either under the wage band or percentage of earnings methodology. The actuary has submitted previously optional illustrative tables in that regard. (See attachment).

Table A**Substitution of the Wage Bands by Rates of Contribution as a Percent of Insurable****Earnings**

	Old Wage Bands	New Average Rate of Contribution		Total
		Employer	Employee	
1	110/139	5.50%	2.50%	8.00%
2	140/179	5.25	2.75	8.00
3	180/219	5.00	3.00	8.00
4	220/259	4.75	3.25	8.00
5	260/299	4.50	3.50	8.00
6	300/339	4.25	3.75	8.00
<u>New</u>	<u>“Mid-range” rate</u>			8.00
7	340/379	4.00	4.00	8.00
8	380/419	4.00	4.00	8.00
9	420/459	4.00	4.00	8.00
10	460/499	4.00	4.00	8.00
11	500 and over	4.00	4.00	8.00
a) Self-Employed		(with Employment injury and short-term benefits)^{a/}		
Under \$339	Variable by \$1 band		7.00%	8.00
340 and over	Variable by \$1 band		7.00%	8.00
b) Self Employed		(Only long-term benefits)^{b/}		
Under \$339			6.00%	6.00%
320 and over			6.00%	6.00%

^{a/} Voluntary scheme probably actuarially insolvent. Coverage of EI benefits not appropriate.

^{b/} No accrued liability for EI coverage of maternity benefit only to pregnant wife at the date of the amendments. Exclusion of housewives also effective on the date of the amendment.

Table B**Weekly Amount Payable by Employer / Employee****(Mid-Range of Insurable Earnings)**

Average Weekly Wage (mid-range)	Employer	Employee	Total
130	\$7.15	\$3.25	10.40
160	8.40	4.40	12.80
200	10.00	6.00	16.00
240	11.40	7.80	19.20
280	12.60	9.80	22.40
320	13.60	12.00	25.60
360	14.40	14.40	28.80
400	16.00	16.00	32.00
420	16.80	16.80	33.60
460	18.40	18.40	36.80
500 +	20.00	20.00	40.00