

**BELIZE**

**Actuarial Performance Analysis of the  
Social Security Scheme (2013)**

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**B E L I Z E**  
**SOCIAL SECURITY BOARD**  
**Actuarial Review of the Social Security Scheme**  
**(2013)**

**Introduction**

Pursuant to the provisions of Section 45 of the Social Security Act (1979) an actuarial performance analysis of the operations of the scheme was carried as at 31 December 2012.

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 financial operations. Chapters III and IV and V present the actuarial analysis of the short-term benefits branch, the employment injury branch, and updates the 2008 analysis and projections of the long-term branch. Chapter VI assesses the NHI project, as required by Part VI of the Act, and Chapter VII evaluates the Investment Performance, as required by the Third Schedule of the Act. Annexes A, B, and C deal with the non-contributory pensions and self-employed pensions, and the legal provisions in force, which should be updated on a sequential basis as from 2013.

**A. Outstanding Issues**

At the date of submission of the present report there are outstanding accounting issues under evaluation by the Board concerning the contingent impairment of specific investments. From an actuarial standpoint, with the key objective of providing an assessment of the future cost and the financial sustainability of the scheme, it appears that a significant proportions of impairments that might be recognized in the financial statements are anticipated to be restored in subsequent financial years, with a non-material long-term incidence on the actuarial situation of the scheme at the valuation date. Any re-statement to the 31 December 2013 agreed to by the Board will be dealt with in the next actuarial valuation.

**B. Legal Amendments**

A set of legal amendments is still under consideration by the Board. The implementation of the first tranche of amendments will provide a more solid actuarial situation of each benefit brand, and address unwarranted distortions.

Attestation

Specific comments and guidelines are shown in the respective sections of the report, to be analyzed in-depth by the Board and the Investment Committee.

The cost, liabilities and other bases utilized in the valuation have been determined using reasonable methods and generally accepted assumptions that, in our opinion, provide a reasonable estimate of the anticipated plan requirements and development. The report has also been formulated, to the extent possible, according to preliminary guidelines issued by the International Actuarial Association for actuarial valuations of Social Security Programs.

Consultores Actuariales, S.A.

  
Hernando Pérez Montás  
Consulting Actuary



4 June, 2014

## 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.

**I****SUMMARY AND RECOMMENDATIONS****1. Scope of the Analysis**

As a complement to the triennial actuarial valuation carried out as of 31 December 2011, to be updated as a 31 December 2014, and in accordance with the provisions of Section 45 of the Social Security Act, an actuarial review of the scheme was carried out as of 31 December 2013, 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. The actuarial review required the assessment of the expected cost of each branch of benefits, and an update of the period of financial equilibrium of the long-term branch which could be sustained under the present level of financing.

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. The National Health Insurance Scheme, funded at present by Government's transfers is also administered by the Board.

**2. Consolidated Performance**

The 2013 actuarial analysis shows a satisfactory performance due to the joint incidence of four factors, namely: a) a steady resumption of increased contribution income as from 2012 including improved compliance, after stagnant results due to the incidence of the economic recession, b) an improved performance of the investment portfolio, c) a static level of administrative expenditure, and d) a modest

increase in benefit expenses. These factors allowed the scheme to generate a steady increase in consolidated reserves and to improve the funding ratios projected in the last triennial valuation at 31 December 2011. The next triennial actuarial valuation to be carried out as at 31 December 2014 will provide updated projections of each benefit branches. Legal amendments of the financial provisions are still under consideration by the Board, to address the imbalance in the financing status of the benefit branches, as well as additional amendments to update the qualifying and benefit provisions.

At year end the Short-Term branch reserves have fallen below the statutory minimum, and the Board addressed the imbalance with a transfer of reserves from the EI branch, as recommended by the actuary. The EI branch continues to be overfunded, with a surplus that amply exceeds the actuarial requirements. The accumulation of reserves of the Long-Term branch rose by \$11 million in 2013, containing the decline of the “period of equilibrium” assessed approximately at only five years, when total income would become lower than total expenditure, according to legal provisions in force. An increase in the ceiling and/or the rate of contributions, and a substantial transfer of reserves from the EI branch, would contribute to extend the period of equilibrium of the long-term branch.

### **3. Short-Term Branch**

Expenditure continues to exceed total income, and reserves continue to decline below the statutory minimum at the close of the 2013, requiring the Board to implement corrective measures, by transferring early in 2014 excess reserves from the EI branch, thus restoring the minimum as set forth in the regulation.

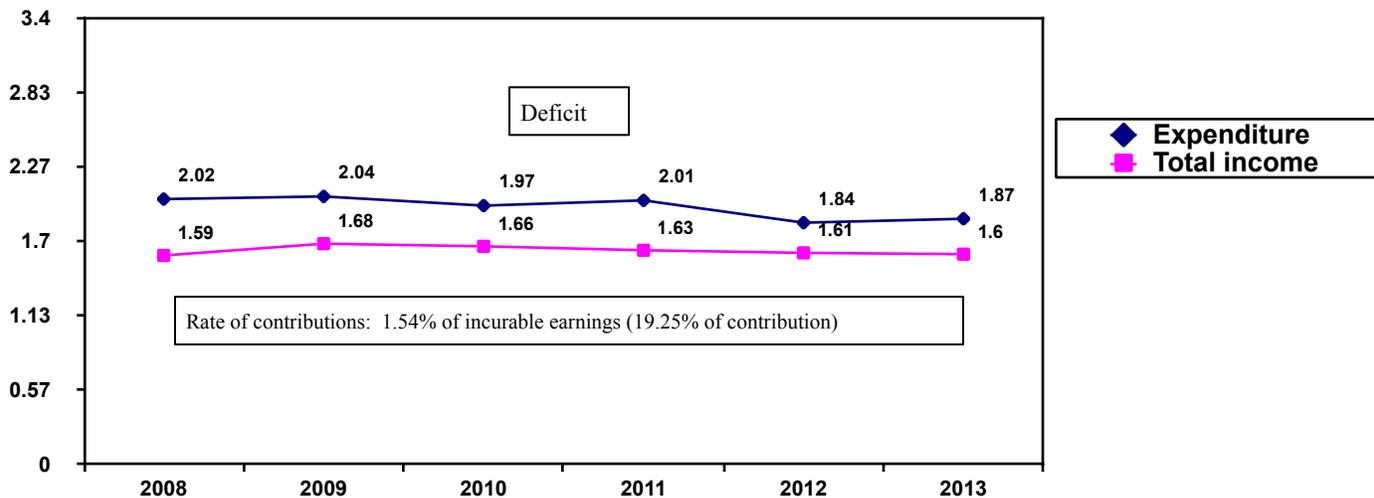
The actuarial cost was lower than projected in the last triennial valuation, as a depressed labour market caused a reduction in sickness claims, but still higher than the statutory allocation of **19.25%** of contributions. The deficit rose to \$2.2 million in 2013, from \$1.9 million in 2012.

#### **Actuarial Trends of the Short-Term Branch**

- **The statutory rate of 1.54% of insurable earnings (19.25% of contributions), plus marginal investment income, are below the actuarial requirements, yielding steady deficits.**

- Reserves that fell below the statutory limit at 31 December 2013, were restored by an \$18 million transfer in 2014, but further declines in reserves are anticipated in 2014 unless the rate of contributions allocated to the branch is updated.
- Recommendations for an allocation of 2.20% of insurable earnings (27.5% of contributions), are urgently required to ensure the financial solvency of the scheme.
- Self-employed persons have been claiming short-term benefits at a higher per capita rate than employed persons, a trend that should be monitored to detect specific statutory adjustments or cost-containment measures.

### Actuarial Trends of the Short-Term Branch (In percent of insurable earnings)



#### 4. Employment Injury Branch

The branch experienced a record surplus of \$14.1 million, augmenting the reserves to \$102.8 million, 26.7 times higher than the statutory minimum, with total expenditure less than one half the contributions. A transfer of \$18 million in reserves to the short-term branch was approved by the Board in 2014, but the funded status of the EI branch still exceeds by an ample margin the actuarial requirements. Still pending is a reduction of the share of contributions to 12.5%, increasing the share of the short-term branch to 27.5%, as

stipulated in the set of legal amendments under consideration by the Board, maintaining for the time being the total rate of contributions at 8% of insurable earnings.

The analysis also shows a slight decline in the actuarial cost of benefits and also a reduction in the cost of administrative expenditure. Total income, including investment income, rose to 2.62% of insurable earnings, and total expenditure declined to 0.93%, yielding a record net surplus of 1.68% of insurable earnings.

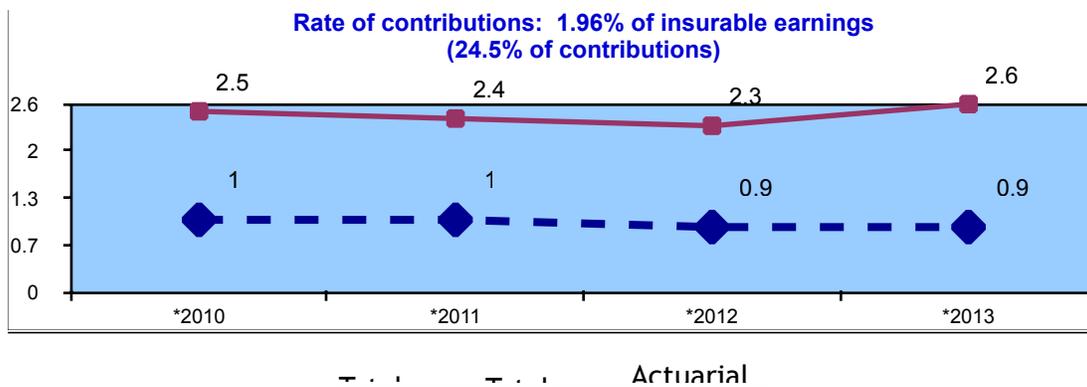
As to the Disablement and Death sub-branch, the reserves cover approximately 90% of the actuarial cost of pensions in payment, which is within acceptable benchmarks.

### Actuarial Trend of the Employment Injury Branch

- **The EI branch has continued to accumulate excess reserves and is overfunded.**
- **The EI branch financing base exceeds the actuarial requirements.**
- **A rate of contributions of 1% of insurable earnings (12.5% of contributions) plus investment income on the substantial reserve, is deemed adequate to cover emerging costs.**
- **The transfer of \$18M in reserves to the short-term branch did not have a negative incidence on the actuarial situation of the EI branch, that still shows reserves that exceed the actuarial requirements.**

### Actuarial Trend of the Employment Injury Branch

(In percent of insurable earnings)



## 5. Long-Term Branch

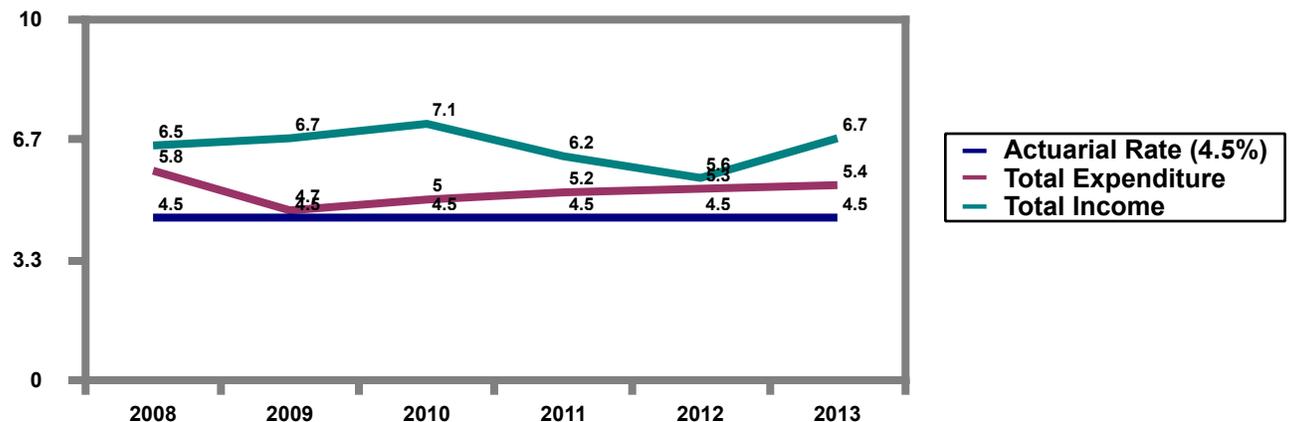
The analysis shows a steady increase in benefit expenditure, due to the gradual maturity of the branch, with retirement pensions increasing to 63% of total benefits, impacted by the emerging cost of self-employed pensioners. The actuarial reserve increased by \$10.8 million, as compared to only \$2.7 million in 2012, due to a \$10 million increase in investment income. A “period of equilibrium” of only five years is anticipated, assuming a modest economic recovery, a more satisfactory real rate of return on investments, and lower provisions for non-performing investment.

Extending the period of equilibrium and postponing the increase in the rate of contributions would require a transfer of reserves from the EI branch, and an increase in the ceiling. At present, almost 40% of insured persons have earnings in the top income bracket, an indicator of the need to adjust the ceiling in order for pensions to attain a closer relationship with actuarial earnings.

#### Actuarial Trends of the Long-Term Branch

- Contributions are lower than expenditure, yielding a “current” deficit of \$7.3 million in 2013.
- But investment income contributes to an increase in reserves.
- Until a “period of equilibrium” is reached in approximately 5 years, when total income becomes lower the expenditure, based on legal provisions in place.
- A transfer of \$50 million in excess reserves from the EI branch would contribute to postpone the “period of equilibrium” by about 2 years.

#### **Actuarial Trends of the Long-Term Branch (in percent of insurable earnings)**



## 6. Non-Contributory Pensions (NCP)

The actuarial cost of the program continues to decline, as unwarranted pensions have been suspended and more stringent conditions have been put in place before the awarding of new pensions, as shown in Annex B of the report.

The number of non-contributory pensions in payment has continued to decline in 2013, 11% lower than in 2012. The share of NCP decreased to 10% of total benefit expenditure in 2013, as compared to 12% in 2012.

The actuarial cost is now assessed at 0.45% of insurable earnings, lower than the long-term average rate of 0.50% assessed in the preceding triennial valuation. Raising the initial retirement age for females to 67 years, the same as for males, would reduce the actuarial cost to 0.40% of insurable earnings. Both rates would decline even further if the actual number of retirees decline again in 2014. It is noted that in most legislations, the eligibility age for NCP is higher than the normal retirement age. This would allow insured persons to continue to work and perhaps qualify for a higher pension, provided the legislative amendments under consideration include the number of contributions as from age 65 to qualify for retirement pensions, a trend which is closely associated to the increase in longevity of the population. Transferring the cost of **new claims** to the Government would reduce steadily the cost of pensions in force, and extend the long-term branch period of equilibrium by 1.5 years.

The Board of Directors are advised to act expeditiously with the set of reforms to the NCP, that also includes more stringent conditions regarding residency requirements, non-eligibility if the individual has opted for the retirement grant, and allowing only one spouse in the household to qualify for a pension.

## 7. Self-Employed Scheme

The analysis shows that already a significant proportion of self-employed persons have been able to qualify for pensions, with conclusive evidence that individuals are taking advantage of the faulty plan design. Most of the retirement 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 borne by the employers and employees in the standard scheme, impacting negatively on the already mature situation of the long-term branch. The actuarial assessment shows that the self-employed scheme is already experiencing actuarial deficits, with total emerging obligations lower than the 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, and the average of housewives (husbands). The actuary considers the proposed amendments to the self-employed scheme a top priority, as shown in Annex C of the report.

#### **8. National Health Insurance Program**

The actuarial cost of the project, funded in its entirety by GOB’s transfers, experienced a slight reduction in benefit and operational expenditure. Reserves increased to \$2.7 million, equivalent to only 2.4 months of expenditure, as compared to 2.2 months the preceding year, but still below standard benchmarks. A rollover to other regions would require additional funds by the Government, based on an assessment of the number and unitary cost of the insured persons that reside in the target area. The pilot project actuarial cost declined slightly in 2013, and shows a satisfactory cost/benefit ratio.

#### **9. Assessment of the Portfolio**

The analysis shows a substantial increase in investment income to \$24.5 million, as compared to \$10.5 million in 2012. The nominal rate of return on assets also increased to 5.54%, in a low inflation environment, from 2.75% in 2012.

The execution of an investment plan to maximize income without undue risk is a key task of the Board, taking into consideration the advancing maturity of the scheme. The long-term branch is not expected to face liquidity constraints in 2014/16, and the consolidated statements show operational surpluses for at least a decade, due to the excess reserves of the EI branch. However, new asset allocations should be vested with higher liquidity, as total contributions are lower than total expenditure, requiring a portion of

investment income to cover the deficit, a gap that should widen steadily on the basis of the legal provisions in force.

**10. Administrative Expenditure**

Administrative and related expenditure remained stable in 2013, and the actuarial cost declined to 2.26% of insurable earnings in 2013 from 2.33% of insurable earnings in 2012. No significant further declines are expected until the ceiling on insurable earnings is updated, as a frozen ceiling restricts the increase in contributions while expenditure evolves in accordance with inflation trends.

## 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 (1979) 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 which still operates as a project, and 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 of \$47 per week could represent a higher percentage of the last 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 C. Effective 1 January 2009, the distribution of contributions by branch was amended as shown below. A further adjustment is required as from 2014, apportioning to the short-term branch a higher level of contributions, to allow the recapitalization of the branch, to maintain the reserves within the statutory minimum, and to strengthen the financial bases of the long-term branch.

**Table 1**  
**Distribution of Contributions by Benefit Branch**

Branch	2014 (recommended)	2012	2008
Short-term	27.50 (2.20)	19.25(1.54)	18.75(1.50)
Employment injury	12.50 (1.00)	23.50(1.96)	25.00(2.00)
Long-term	60.00 (4.80)	56.25(4.50)	56.25(4.50)
Total	100 (8.00)	100 (8.00)	100 (8.00)

<sup>a/</sup> 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.

## **2. Legal Amendments**

A set of legal amendments submitted by the actuary is still under consideration by the Board. Therefore, proposed amendments would address a number of audited

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, among others.

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 usually 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 mild recovery as from 2012, in an environment of low inflation, as shown by SSB statistical data. Recent data by the Statistical Institute of Belize show a GDP growth rate of 0.7% and a 14.2% unemployment rate that decreased to 11.7% at the close of 2013.

In the last three years the active insured population has been stable, due to the economic slowdown, yielding a coverage rate of 66% of the employed labour force. The inception of a self-employed scheme as from 1 March 2003, although on a voluntary basis in the first phase, had a marginal incidence in the rate of increase of the active insured population, as most of the increase was due to higher levels of compliance by employers, due to more strict enforcement procedures applied by the SSB.

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 2% this decade, as family planning and higher educational standards slow fertility. From an actuarial standpoint, high fertility rates contribute to a 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 65 years and over divided by the population 15 to 64 years), that has increased to 4.3% in 2010 from 4.1% in 2000, showing 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 in 2010, and the life expectancy at birth increased by three years in the last 15 years, reaching an average of 76 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 pilot project was still on-going as at the valuation date. Initially, the project was financed by transfers from the Short-Term Branch, but as from 1 January 2006 a NHI Fund was set up with a \$15 million transfer from surplus reserves of the Employment Injury Branch. SSB financing is no longer feasible and as from 2009. The NHI program is funded exclusively by Government transfers, although managed by the SSB.

## 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 earnings 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 \$2.60 per week only for employment injury benefits. 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.

**As shown below, 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.

**Distribution of Insurable Earnings by Branch**

Branch	January 2009	July 2003	Before July 2003
Short-Term Benefits	1.54%	1.5%	1.5%
Employment Injury Benefits	1.96%	2.0%	2.0%
Long-Term Benefits	4.50%	4.5%	3.5%
Total	8.0%	8.0%	7.0%

**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, since 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. Due to the contraction of the economy, contributions have increased at a very slow rate of less than 1% per annum in 2010 and 2011, but increased by 6% in 2012 and 3.7% in 2013. Total expenditure increased at a slower pace but still exceeded contributions by 2.6% in 2013, a deficit that would widen until the ceiling or the rate of contributions are adjusted. The deficit was covered by investment income, highlighting the need of a high level of liquid reserves.

**Table 2**

**Consolidated Statement of Income and Expenditure (ex-NHI Operations)**  
(amounts in thousands of BZ\$)

<b>Income</b>	2013	2012–	2011–	2010
Contributions –	66,866	64,525	60,913	60,329
Investment income	24,476	11,743	16,226	24,784
Other income –	982	1,052	876	795
<b>Total Income</b>	<b>92,324</b>	<b>77,320</b>	<b>78,015</b>	<b>85,908</b>
<b><u>Benefits</u></b>				
Short-term branch	11,540	10,751	10,975	10,427
Long-term branch –	34,003	31,564	28,638	26,433

Employment injury branch	4,232	5,278	5,877	5,959
Benefit Expenditure	49,775	47,593	45,490	42,819
Administrative and other expenses	18,869	18,869	19,242	19,157
Total expenditure	68,644	66,462	64,732	61,976
Net income	23,686	10,858	13,283	23,932

<sup>1/</sup> Excludes GOB contribution to the NHI Fund and NHI operations. Unaudited data.

<sup>2/</sup> Includes interest on rental income, staff advances and surcharges for late contributions.

<sup>3/</sup> Includes non-contributory pensions.

<sup>4/</sup> Restated in 2013

## 8. Other Income

The rate of other income is shown in table 3, including interest on late contributions, staff advances and rental income. The income is distributed in equal parts among the three benefit branches, pursuant to the provisions of Section 14(3) of the Financial Regulations, yielding 0.15% of insurable earnings in 2013, close to the rate assessed for the period 2012/14, to be adjusted based on future valuations if higher compliance by employers tends to reduce the penalties for late contributions, or viceversa.

**Table 3**  
**Percent Distribution of Other Income**

	2013	2012	2011	2010
Rental income	-	1	4	12
Interest on staff advances	-	9	10	9
Surcharge on late contributions	-	72	58	87
Miscellaneous	-	18	28	(8)
Total	100%	100%	100%	\$100%
as % of insurable earnings	0.15%	0.13%	0.12%	0.11%

## 9. Balance Sheet and Reserves by Branch

Table 4 shows the balance sheet as at 31 December 2013 and the preceding three years, with a \$21.3 million increase in reserves in 2013, as compared to \$27 million in 2012 and \$13.6 million in 2011.

**Table 4**

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

	2013	2012	2011	2010
Cash and bank balance	20,673	17,710	13,492	10,441
Short-term investments	127,243	121,580	125,841	132,353
Long-term investments –	272,208	256,501	232,506	227,106
Accounts receivable and others	15,269	19,983	18,831	16,124
Fixed assets (net)	27,528	28,632	29,576	29,770
<b>Total assets</b>	<b>462,920</b>	<b>444,456–</b>	<b>420,246–</b>	<b>415,794</b>
Liabilities and deferred income	(6,102)	(7,136)	(10,022)	(19,229)
<b>Net reserves and special funds</b>	<b>456,818</b>	<b>437,320</b>	<b>410,224</b>	<b>396,563</b>

<sup>a/</sup> Includes investment in Associates

<sup>z/</sup> Restated to \$441.3 million and \$434.5 million in 2012 and 2011 respectively.

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 continued to decline in 2013 below the minimum 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	2013	2012–	2011	2010
Short-term	1,226	349	5,792	8,710
Long-term	328,218	317,288	304,276	297,237
Employment Injury	102,813	89,947	77,288	68,121
Disablement and Death	16,716	16,386	16,564	16,365
National Health Insurance Fund	2,751	2,499	1,836	2,142
Social Security Development Fund	1,802	1,507	1,043	654

Pension reserve	3,291	3,291	3,426	3,335
Total	456,818	434,910	410,224—	396,563

<sup>p/</sup>Provisional

<sup>r/</sup>Restated

<sup>r1/</sup>Restated to \$424.2 million

## 10. Reserves as a Percent of GDP

Table 6 shows the consolidated SSB reserves as a percent of GDP. In the period 2009/11 SSB reserves increased at a faster rate than GDP, resulting in an increase of SSB reserves as a percent of GDP, with a reversion as from 2013 due to recovery of the economy.

**Table 6**

### SSB Reserves as Percent Gross Domestic Product (GDP)

	2013—	2012	2011	2010
	(amounts in millions of BZ\$)			
GDP –	3,300	2,948	2,845	2,790
SSB Reserves	457	437	410	396
% of GDP	13.9%	14.8%	14.4%	13.9%

<sup>1/</sup>Current prices (SIB).

<sup>p/</sup>Provisional data.

## 11. Rate of Return on Investments

As shown in Table 7 the rate of return on investments has fluctuated significantly, and has been influenced by capital gains and provisions for non-performing investments. The nominal return declined to 2.75% in 2012, with an increased to 5.54% in 2013, including provisions for investment losses. The 2011/13 average real rate of return was equivalent to 2.64%, close to the 3% actuarial assumption for the 2011 triennial actuarial review.

**Table 7**

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

	2013	2012	2011	2010	2009
Net investment income	22,015	11,743	16,226	24,784	21,315
Nominal rate of return –	4.97%	2.75%	3.96%	6.45%	6.21%
Inflation rate (assumed)	0.50	1.30%	1.50%	0.90%	(1.10)%
Real return –	4.44%	1.00%	2.42%	5.50%	7.39%

<sup>1</sup> 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.

<sup>2</sup> According to the formula:  $[(1 + i) / (1 + s)] - 1$  where i and s represent the interest rate and the inflation rate.

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 2013.

## **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. As to the housing mortgages, an agreement with the Government to re-assume responsibility for all mortgages that have been transferred to the SSB would eliminate from the balance sheet such investments. 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 a slight decline in 2013 and 2012, due basically to a frozen level of remuneration.

**Table 8**  
**Distribution of Administrative Expenditure**

	2013	2012	2011	2010
(Thousands of BZ\$)				
Total operating expenditure –	18,869	18,869	19,242	19,157
Depreciation	(868)	(992)	(1,081)	(1,239)
Amortization Depreciation (establishment)	(610)	(542)	(461)	(471)
Net operating expenses	17,391	17,335	17,700	17,447
Actuarial cost (total) –	2.26%	2.33%	2.53%	2.54%
Actuarial cost (net)–	2.08%	2.14%	2.32%	2.32%
Budget Performance Indicators				
as % of contributions	28.2%	29.2%	31.6%	31.8%
as % of contributions + benefits	16.23%	16.8%	18.1%	18.6%

<sup>1</sup>Excluding NHI expenses

<sup>2</sup>As percent of insurable earnings

<sup>3</sup>Excluding depreciation / amortization

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**

	2013	2012	2011	2010
Short-term branch	0.41%	0.51%	0.57%	0.57%
EI branch	0.43%	0.43%	0.48%	0.50%
Long-term branch	1.34%	1.39%	1.48%	1.47%
Total	2.26%	2.33%	2.53%	2.54%

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-curtalement measures. Costs are not compatible, 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:

	2013	2012	2011
(Amounts in thousands of BZ\$)			
Social Development Fund	501	376	162
Disaster Fund	1,301	1,131	881
Total	1,802	1,507	1,043

15. **Trend of Active Insured Persons**

The following tables show the trend of active insured persons by sector, sex and insurance bracket. In particular, the proportion receiving earnings in the top income bracket has increased from 33% in 2011 to 35% in 2013, indicating that the maximum insurance earnings of \$330 per week should be updated, as otherwise the pension amount will become irrelevant to a significant proportion of insured persons.

**Table 10 (a)**

**Sectoral Trend of Average Insurable Earnings by Sex**

	Biennial increase (2011/13)	2013	2012	2011
Private sector	4.58%	7,992	7,997	7,642
Public sector	7.58	12,395	11,601	11,522
Statutory	(4.46)	12,820	13,750	13,481
Total	3.11%	8,830	8,880	8,563

Males	3.95	8,631	8,651	8,303
Females	1.85	9,162	9,259	8,996

**Table 10 (b)**  
**Percent of Insured Persons by Earnings Bracket**

Bracket (by week)	2013	2012	2011
Less than 110	15	16	17
110 < 300	50	50	50
300 and over	35	34	33
Total	100	100	100

**Table 10 (c)**  
**Percent Distribution of Insured Persons by Sex**

Sectoral Distribution	2013	2012	2011
Private	80.2	78.8	78.9
Public	14.8	16.1	15.8
Statutory bodies	5.0	5.1	5.3
Total	100	100	100

Sex Distribution	2013	2012	2011
Males	62.4	62.3	62.5
Females	37.6	37.7	37.5
Total	100	100	100

**III**  
**ANALYSIS OF THE SHORT-TERM BENEFIT BRANCH**

**1. Financial Operations**

Table 11 shows the financial operations of the short-term benefit branch. Total expenditure has consistently exceeded total income, with a \$2.27 million deficit in 2013 as compared to \$1.94 million in 2012. A transfer of \$15 million in reserves from the EI branch contributed to restore the reserves above the statutory minimum as at 31 December 2008, but at the end of 2013, the reserve again has fallen below the statutory minimum, prompting the Board to approve another transfer of \$18 million early in 2014. The branch was severely penalized by subsidizing the NHI pilot project with about \$25 million between 2001 and 2005, depleting the accumulated reserves of previous years, a process that was abetted by an excessive liberalization of the benefit provisions in 2001.

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

	2013	2012	2011	2010
Contributions	12,872	12,421	11,785	11,613
Investment & other income	527	518	668	998
<b>Total Income</b>	<b>13,399</b>	<b>12,939</b>	<b>12,454</b>	<b>12,611</b>
Maternity benefits	3,342	3,047	3,335	3,068
Sickness benefits	7,233	6,757	6,628	6,356
Maternity grants	966	947	1,012	1,004
<b>Total Benefits</b>	<b>11,541</b>	<b>10,751</b>	<b>10,975</b>	<b>10,428</b>
Operational expenses	4,124	4,127	4,305	4,326
<b>Total Expenditure</b>	<b>15,665</b>	<b>14,878</b>	<b>15,280</b>	<b>14,754</b>
<b>Income less Expenditure</b>	<b>(2,266)</b>	<b>(1,939)</b>	<b>(2,826)</b>	<b>(2,143)</b>
<b>Contingency Reserve</b>	<b>1,225</b>	<b>3,492</b>	<b>5,663</b>	<b>8,710</b>

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

Income and expenditure as a percentage of insurable earnings is shown in Table 12. Total cost (benefit and administrative expenditure) have consistently exceeded the contribution rate allocated to the branch. Investment income contributed to reducing the deficit, but as reserves have been declining, investment income has also declined. The deficit rose to 0.38% of insurable earnings in 2011, from 0.31% in 2010, but declined to 0.24% in 2012 and 0.27% 2013.

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

	2013	2012	2011	2010	2009
Contributions	1.540	1.540	1.540	1.540	1.540
Investment & other income	0.063	0.064	0.086	0.119	0.144
<b>Total Income</b>	<b>1.603</b>	<b>1.604</b>	<b>1.626</b>	<b>1.659</b>	<b>1.684</b>
Maternity allowances	0.400	0.378	0.438	0.409	0.428
Sickness benefits	0.864	0.837	0.870	0.846	0.875
Maternity grants	0.115	0.117	0.133	0.134	0.143
<b>Total Benefits</b>	<b>1.380</b>	<b>1.332</b>	<b>1.441</b>	<b>1.389</b>	<b>1.446</b>
Operating expenses	<b>0.493</b>	<b>0.511</b>	<b>0.568</b>	0.576	0.598
<b>Total Expenditure</b>	<b>1.874</b>	<b>1.843</b>	<b>2.009</b>	<b>1.965</b>	<b>2.044</b>
<b>Income less Expenditure</b>	<b>(0.271)</b>	<b>(0.239)</b>	<b>(0.383)</b>	<b>(0.306)</b>	<b>(0.360)</b>

### 3. Cost and Funding 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 13, at the end of 2013 the reserve is equivalent to only 22% the minimum stipulated in the regulations.

**Table 13**  
**Statutory Minimum Level of Reserves (31 December)**

	2013	2012	2011	2010	2009
	(amounts in thousands of BZ\$)				
Minimum statutory reserve –	5,554	5,359	5,372	5,225	4,921
Actuarial reserve	1,225	3,492	5,663	8,610	10,793–
Reserve ratio (actual / minimum)	0.22–	0.65	1.05	1.65	2.19

<sup>1/</sup> Six months average benefit expenditure in the last three years.

<sup>2/</sup> Includes a \$15 million transfer from the EI reserves-

<sup>3/</sup> 3.73 times the minimum statutory reserve with the \$18 million transfer in 2014.

Table 14 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 in the period 2009/11, with a 90% 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 2013 was equivalent to 0.13, less than two months projected expenditure, below the international accepted minimum of six months' total expenditure.**

**Table 14**  
**Cost and Fund Ratios of the Short-Term Branch (excluding NHI and SSDA)**

	2013	2012	2011	2010	2009
Benefits / contributions	0.90	0.87	0.94	0.90	0.94
Expenditure / contributions	1.20	1.20	1.30	1.27	1.33
Expenditure / total income	1.15	1.15	1.24	1.17	1.21
Fund Ratio –	0.08	0.23	0.35	0.57	0.73

<sup>a/</sup> Reserve ÷ total expenditure in the year

#### 4. **Key Frequencies and Unit Cost of Sickness Benefit**

Table 15 shows the key indicators of sickness benefits, with a Morbidity Rate (average days paid per insured), exceeding the average ratio of other countries (1.2 to 1.8 days per year), due to the elimination of the 3-day waiting period, with a high proportion of cases with days paid lasting one to three days, also adding to the cost of administration of the branch. **A partial restoration of a waiting period would reduce materially the morbidity rates and the actuarial cost.**

**Table 15**  
**Morbidity Rates by Sex**  
**(Sickness days paid, by active insured, per year)**

	2013	2012	2011	2010
Active contributors	92,108	90,577	87,987	86,981
Number of cases	31,041	28,517	27,447	28,352
Benefit days paid	263,157	238,856	170,130	217,664
Cases paid per insured	33.7	31.5	31.1	32.6
Days per case	5.48	8.37	6.20	7.68
Days per insured (Morbidity Rate)	2.86	2.64	1.93	2.50

Table 16 shows the sex-differential of the morbidity rates, which is higher for females, while conclusion.

**Table 16**  
**Sex Differentials of Morbidity Rates**

	2013	2012	2011	2010
Males	2.39	2.20	1.59	2.18
Females	3.62	3.37	2.51	3.04
Total	2.86	2.64	1.93	2.50
Ratio (female/males)	51%	53%	58%	39%

Table 17 show sex differentials for the duration of sickness benefit for terminated cases, with a higher duration for males in most years, a reversion of the experience for 2008/09, when the duration for females was higher.

**Table 17**

**Average Duration of Sickness Benefits by Sex (Days of Terminated cases)**

	Males	Females	Total
2013	7.3	6.9	7.1
2012	6.7	8.8	6.7
2011	15.8*	4.2	12.3*
2010	6.0	5.1	5.6

\* Abnormal distortion

**5. Sickness Disallowance Rates**

Statistical data shows between 2009 and 2011, but an increase as from 2012. The average rate of disallowances in the last three years was equivalent to 3.32%, and 3.85% for the self-employed. The main reasons for non-payment are due to the claimant not meeting the contribution requirement of 50 paid contributions, which shows a substantial increase of total disallowances, while rejections for late claims have declined. The significant variations of these two causalities could arise from the joint incidence of higher density of contributions and more information of the legal requirements by insured persons.

Appeals for sickness benefit claims declined significantly, while for maternity benefits there is a non-material increase. Appeals are requested by less than one claimant per 1000 cases of sickness claims. The analysis by sex shows that females have a higher incidence of sickness, although the average duration of terminated cases seems to be lower.

**6. Incidence of the 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.**

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 might have to be postponed for 2014, due to the incidence of the economic crisis on employment. However, the amendments would align the SSB legal provisions with other schemes, and reduce further the cost of the Short-Term branch.

#### 7. Actuarial Cost of Sickness Benefit

Table 18 shows the actual and projected actuarial cost of sickness benefits, with 0.86% actual cost in 2013 as compared to 81% of **insurable earnings assessed for the period 20012/13, in the preceding valuation, with alternative cost scenarios assuming a restoration of waiting periods and a moderation of the 80% benefit rate to 70%**. The actual cost of 0.86% in 2013 was slightly lower than anticipated, with the economic slowdown having a direct incidence on the incidence and duration of sickness claims.

**Table 18**  
**Updated Actual and Expected Actuarial Cost of Sickness Benefit**

	Actuarial cost (as % of insurable earnings)	
	2013	2012
Actual (2013)	0.86%	0.84%
With a 2-days waiting period and a 70% rate –	0.77%	0.75%
With a 3-days waiting period and a 70% rate –	0.67%	0.65%

<sup>a/</sup>Recommended as from 2015/16

## 8. Trend of Maternity Benefits

The number of maternity allowances declined slightly in 2013, as well as the frequent of maternity grants, due to reduced employment levels, as shown in Table 19.

**Table 19**

### **Actuarial Cost of Maternity Benefits**

	2013	2012	2011	2010
Active contributors	92,108	90,577	87,987	87,254
Female contributors	34,183	33,513	32,555	32,528
Number of allowances paid	n/a	1,265	1,313	1,338
Number of grants paid	n/a	3,142	3,522	3,329

## 9. Actuarial Cost of Maternity Benefits

The cost of maternity allowances has remained rather stable in the last three years, at an average of 0.41% of insurable earnings, while the cost of grants has averaged 0.12% of insurable earnings, as shown in Table. **The 2013 experience shows a slight decline in the previously assessed actuarial cost and, therefore, until a further assessment of the trend in the next actuarial review, average benefit expenses of 0.43% and 0.14% in allowances and grants respectively are anticipated for 2014.**

The statistical data also 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 20:

**Table 20**

Year	Allowances as % of insurable earnings	Grants	Total
------	---------------------------------------	--------	-------

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

#### 10. **Actual versus Expected Experience and Projected Actuarial Cost**

Table 21 shows a comparison between the actual and expected actuarial cost of the short-term branch benefits, with total cost in 2013 of 1.87% of insurable earnings, lower than anticipated, due in part to the control of administrative expenditure (0.49% versus 0.58%). **The actuarial cost estimate for the 2014 and beyond will be updated again at the next triennial actuarial valuation as at 31 December 2014.** 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 restore the actuarial solvency of the branch.**

**Table 21**  
**Comparison between Actual and Expected Actuarial Cost of Benefits**  
**(as % of insurable earnings)**

	Updated projection – (2013/14)	Actual (2013)	2012	2011
Sickness allowance	0.88%–	0.86%	0.86%	0.87%
Maternity allowance	0.43	0.20	0.38	0.44
Maternity grant	0.14	0.12	0.12	0.13
Total benefits	1.45	1.33	1.34	1.44
Administrative expenses	0.58	0.47	0.50	0.57–
Total	2.03%	1.85	1.85	2.01%

<sup>a/</sup>Legal provisions in force

<sup>b/</sup>Declining 0.77% and 0.67% with the restoration of a 2-day or 3-day waiting period respectively.

#### **11. Sustainability of the Short-Term Branch**

**Even assuming a gradual uptrend in the economic performance, the short-term branch would have become insolvent in 2014, unless the financing provisions were updated, as recommended in the actuarial report. Further, the branch reserves have already fallen below the statutory minimum by mid-2012, requiring more drastic adjustments to the financing bases.** 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.

**IV**

**ANALYSIS OF THE EMPLOYMENT INJURY BRANCH**

**1. Financial Operations of the Employment Injury Branch**

Table 22 shows the operations of the employment injury branch, which records as expenses the actuarial present value of disablement and survivors pensions, in accordance with the actuarial method of "terminal reserves" or "assessment of constituent capital" applied to the scheme. The investment income apportioned to the branch in 2013 increased substantially, while benefit expenditure declined materially, yielding a record surplus of \$14 million, and reserves of \$102.8 million as at 31 December 2013. Thus the accumulations of excess of reserves have continued unabatedly, as shown below.

**Table 22**

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

	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>
Contributions	16,382	15,809	14,999	14,781
Investment and other income	5,482	2,594	3,204	4,189
<b>Total Income</b>	<b>21,864</b>	<b>18,403</b>	<b>18,203</b>	<b>18,970</b>
Disablement grants	432	412	527	396
Employment injuries (short-term) –	2,319	2,160	2,160	2,659
Disablement benefits (actuarial value)–	1,221	427	859	581
Death benefits (actuarial value)	253	278	475	390
Funeral grants	7	9	5	1
<b>Total Benefits</b>	<b>4,232</b>	<b>3,286</b>	<b>4,026</b>	<b>4,024</b>
Operating expenses	3,556	3,476	3,667	3,756
<b>Total Expenditure</b>	<b>7,788</b>	<b>6,763</b>	<b>7,693</b>	<b>7,780</b>
<b>Income less Expenditure</b>	<b>14,075</b>	<b>11,640</b>	<b>10,510</b>	<b>11,190</b>

<b>Net Reserve (Short-term benefits)</b>	<b>102,813</b>	<b>89,947</b>	<b>79,744</b>	<b>66,121</b>
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<sup>a</sup>New cases

## 2. Income and Expenditure as a Percent of Insurable Earnings

Income and expenditure as a percentage of insurable earnings are shown in table 23. Total benefits were equivalent to 0.51% of insurable earnings, a significant increase in actuarial costs due to a higher incidence of disablement claims. Total expenditure in the last year rose to 0.93% of insurable earnings (0.84% in 2012), less than one-half the statutory contribution rate, which shows that the financing of the branch exceeds actuarial requirements.

**Table 23**  
**Income and Expenditure as a Percent of Insurable Earnings (EI Branch)**

	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>
Contributions	1.960	1.960	1.960	1.960
Investment and other income	0.656	0.322	0.410	0.554
<b>Total Income</b>	<b>2.616</b>	<b>2.282</b>	<b>2.370</b>	<b>2.514</b>
Disablement grants	0.052	0.051	0.069	0.053
Employment injury (short-term)	0.277	0.268	0.288	0.352
Disablement benefits (actuarial value)	0.146	0.053	0.113	0.077
Death benefits (actuarial value)	0.030	0.035	0.063	0.052
Funeral grants	0.001	0.000	0.000	0.000
<b>Total Benefits</b>	<b>0.506</b>	<b>0.407</b>	<b>0.533</b>	<b>0.534</b>
Operating expenses	0.426	0.430	0.484	0.497
<b>Total Expenditure</b>	<b>0.932</b>	<b>0.836</b>	<b>1.017</b>	<b>1.031</b>
<b>Income less Expenditure</b>	<b>1.684</b>	<b>1.446</b>	<b>1.353</b>	<b>1.483</b>
Contributions less Expenditure	0.309	1.124	0.943	0.740

## 3 Statutory and Actual Reserves

Reserves of employment injury benefits have evolved as shown in table 24. 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, or \$3.79 million as at 31 December 2012. **Therefore, at year-end, the reserve is 23.4 times higher than the stipulated minimum, as compared to 17.6 times in 2011, a clear indication that the contribution rate assigned to the branch exceeds the actuarial requirements, and the level of reserves exceed by a wide margin the statutory requirements.** Even with the transfer of \$18 million to the ST reserve in 2014, the EI branch exceeds by a wide margin the minimum statutory reserves.

**Table 24**  
**Employment Injury Benefits**  
**(amounts in thousands of BZ\$)**

31 December	Reserve	Statutory Minimum	Multiple Minimum Reserve
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

<sup>t/</sup>Restated

<sup>a/</sup>22 times with the transfer of \$18 million to the ST reserve approved in 2014

#### **4. Incidence of Short-Term Injury Benefits**

Table 25 shows the incidence and cost ratios of employment injury benefit, and table 26 shows the actual and expected costs.

**Table 25**  
**Incidence of Employment Injury Benefit)**

	<b>2013</b>	<b>2012</b>	<b>2011</b>
Cases paid	1,804	1,782	1,761
Amount paid (\$ thousands)	\$2,319	\$2,160	\$2,100
Average Insured persons	92,108	90,577	87,987

Cases per 100 insured	1.96	1.97	2.23
Cost per case	1,285	1,212	1,070
Cost per insured	28.17	23.85	23.83
<b>Actuarial cost (% of salaries)</b>	<b>0.277</b>	<b>0.268</b>	<b>0.288</b>

The emerging trend shows that the anticipated incidence has been lower, as the impact of the economic crisis continues to cause high levels of unemployment, impacting low income seasonal workers, particularly in the agricultural sector, who have a high incidence of work accidents. **The estimated cost for 2014 is still assessed at 0.35% of insurable earnings.**

**Table 26**  
**Actual and Expected Cost of Injury Benefits <sup>a/</sup>**

	Actual		Projected	Actual
	2013	2012	2012/13	2009/11
Cases per 100 insured	1.96	1.97	2.00	2.23
Actuarial cost (% of salaries)	0.277%	0.268%	0.35%	0.288%

<sup>a/</sup>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 27 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 27**  
**Income, Expenditure and Reserves Disablement & Death Benefits**

	2013	2012	2011	2010
APV disablement benefits	1,220,789	\$426,524	\$858,843	\$580,700
APV death benefits	253,734	277,959	475,953	389,959
Total APV	1,474,523	704,483	1,334,796	970,659
Net investment income	939,013	431,770	694,656	1,096,154
Total income	2,413,535	1,136,253	2,029,452	2,066,813
<u>Expenditure</u>				
Disablement pension	1,385,689	1,314,974	1,194,679	1,294,669
Death benefits	697,083	676,573	621,247	640,083
Total benefits	2,082,781	1,991,547	1,815,926	1,934,752
Excess of income over expenditures	330,757	(885,284)	213,526	132,061
Actuarial Reserve	16,716,70 3	16,385,946–	17,191,883 r/	16,364,876
<u>Key Indicators</u>				
Actuarial cost (new cases) –	0.09	0.17	0.13	
Reserve ÷ benefit expenditure	7.97	9.12	8.46	

<sup>a/</sup>APV of new cases ÷ insurable earnings (60% disablement and 40% death)

<sup>r/</sup>Restated

## 6. **Incidence of Disablement and Death Benefits**

Table 28 shows the rates of accidents per 1000 insured persons due to EI accidents. The total accidents per year have averaged 24 cases per 1000 persons, of which 3 per thousand can be classified as entitling the individual to permanent incapacity status. The rest are only entitled to the grant, with a disability rate lower than 25%, as shown in Table 29.

**Table 28**

### **Number of Accidents by Consequence and Rates per 1000 insured**

Number of Cases	Rates for 1000 insured
-----------------	------------------------

Year	Medical C a r e only	Permane n t incapacit y	Deaths	Medical c a r e only	Permanent incapacity	Death
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
A v e r a g e 2010/13	2,014	159	6	22.5	1.78	0.06

<sup>a/</sup> 90% with a degree of disablement lower than 25%. Grant entitlement only.

**Table 29**  
**Percent Distribution of New Cases of Permanent**  
**Incapacity by Degree of Incapacity (2013)**

Year	60% and over	30/59%	Under 30%	Total
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 30 indicate a very gradual increase of pensions in payment, the balance of new pensions awarded and terminations due to death and other causes, and a decline of widows' pensions.

**Table 30**  
**EI Pensions in Course of Payment**

	2013	2012	2011	2010
<u>Disability Pensions</u>				

Number	456	446	442	431
Monthly amount	102,595	100,222	99,443	95,725
<u>Widows</u>				
Number	94	104	109	108
Monthly amount	\$31,749	\$34,759	\$37,550	\$33,226
<u>Orphans</u>				
Number	211	213	227	243
Monthly amount	\$30,991	\$30,139	\$31,144	\$30,584

### 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

Based on the 2010/13 trend, the expected cost of the EI branch is assessed as shown in Table 31, although the experience in the last two years has yielded lower costs. The estimated future cost of 1.05% of insurable earnings is equivalent to 61% the present allocation to the branch of 1.96% of insurable earnings.

**Table 31**  
**Actuarial Cost of the EI Branch**  
**(as % of insurable earnings)**

Benefit	2014 (Projected)	2013	2012	2011
Employment Injury	0.35%	0.28%	0.29%	0.27%
Disablement & Death Benefits (APV)	0.15	0.17	0.20	0.09
Disablement Grants	0.07	0.05	0.07	0.05
Death and Funeral Grants	0.03	0.01	0.06	0.00

Total Benefits	0.60	0.51	0.54%	0.41
Administrative Expenditure	0.45	0.42	0.48%	0.43
Total	1.05%	0.93%	1.02%	0.84%

#### 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 in 2011. 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): Nil.  
Discount Rate: 6% (ad hoc pension adjustments)  
Actuarial Reserve: \$16,716,703 (31 December 2013)

The present value of EI pensions in payment and the Fund Ratio assessed in the 2011 triennial valuation were as follows:

Discount rate	Present value	Fund Ratio –
4%	19,681,951	87.3%
5% (basic)	17,583,512	98.8%—
6%	15,860,878	108.4%

<sup>a/</sup>Reserve ÷ APV of benefits

<sup>b/</sup>December 2012

**Pending a specific analysis as at 31 December 2014 (triennial actuarial valuation) and on the basis of the total reserves as at 31 December 2013 (\$16,716,703), and an static level of pensions in payment, it is estimated that the reserves are approximately equivalent to 90% the actuarial present value of pensions in payment, within a variability of plus or minus 10%.**

#### 12. **Reallocation of the Contribution Rate**

The recommended allocation of 1% of insurable earnings requires a margin of 0.05%, to be covered by investment income on the reserve, which was equivalent to 0.40% of insurable earnings in 2012. Therefore, even with a reduced allocation of contributions equivalent to

one-half the present statutory allocation, the substantial reserve of the EI branch will continue to increase in the future. A transfer of two-thirds of the reserve to other branches is also deemed advisable, to restore the financial equilibrium of the short-term branch and to strengthen the actuarial reserve of the long-term branch.

**12. 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. Once the individual who lost one thumb working the joint income would exceed 100% of salary.

It is likely that a significant proportion of disablement pensioners are in active employment, and also a receiving minimum pension of \$47 per week, as the degree of disablement does not preclude an active employment.

V

**ACTUARIAL ANALYSIS OF THE LONG-TERM BRANCH**

**1. Actuarial System**

For the long-term branch the "scaled-premium" system of finance is being applied. Under this system, the contribution rate is fixed at such a level that the income from contributions and investment is expected to exceed the expenditure on benefits and administration for a period of years referred to as the "period of equilibrium". Throughout the period of equilibrium, the annual excess of income over expenditure is accumulated in a reserve that increases steadily, but declining 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 is in Table 32, showing the expected increase in pension benefits, with new pensions awarded exceeding the cost reduction arising from the mortality of existing pensioners. Reserves increased by 3.44% in 2013, as compared to 0.6% in 2012 and 6.1% in 2011. 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 and the adjustment of the basic rate to \$100 per month.**

**Operational surpluses are expected for a few more years, due exclusively to the incidence of investment income, 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 32**  
**Income and Expenditure of the Long-Term Branch**  
**(Amounts in thousands of Belize Dollars)**

	2013	2012	2011	2010	2009
Contributions	37,612	36,295	34,438	33,935	33,686
Investment & other income	18,510	9,201	12,939	19,296	16,644
<b>Total Income</b>	<b>56,122</b>	<b>45,496</b>	<b>47,377</b>	<b>53,231</b>	<b>50,330</b>
Retirement benefits	21,269	19,097	16,712	14,754	13,066
Invalidity benefits	3,106	2,956	2,581	2,310	2,088
Survivors' benefits	5,138	4,707	4,284	4,147	3,661
Funeral Grants	1,086	1,023	915	1,020	897
Non-contributory pensions	3,404	3,781	4,146	4,201	4,703
<b>Total Benefits</b>	<b>34,003</b>	<b>31,564</b>	<b>28,638</b>	<b>26,433</b>	<b>24,415</b>
<b>Operating Expenses</b>	<b>11,188</b>	<b>11,265</b>	<b>11,114</b>	<b>11,075</b>	<b>11,023</b>
<b>Total Expenditure</b>	<b>45,191</b>	<b>42,829</b>	<b>39,832</b>	<b>37,508</b>	<b>35,435</b>
<b>Income less Expenditure</b>	<b>10,930</b>	<b>2,667</b>	<b>7,544</b>	<b>15,723</b>	<b>14,892</b>
<b>Actuarial Reserve</b>	<b>328,218</b>	<b>317,288</b>	<b>315,298</b>	<b>297,237</b>	<b>276,937</b>
<b>Fund Ratio –</b>	<b>7.3</b>	<b>7.4</b>	<b>8.0</b>	<b>7.9</b>	<b>7.8</b>

<sup>1</sup> Reserves ÷ total expenditure

<sup>2</sup> Restated

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

Table 33 shows the financial experience as a percent of insurable earnings. Total benefits rose to 4.07% of salaries, and total expenditure to 5.41% of insurable earnings in 2013, higher than the 4.5% allocated to the branch. The current surplus (contributions less expenditure) has been declining steadily, reaching a negative ratio of 0.91% of insurable earnings in 2013, as compared to 0.81% in 2012.

**Table 33**  
**Income and Expenditure as a Percent of Insurable Earnings**

	2013	2012	2011	2010
Contributions	4.50	4.50	4.50	4.50
Investment & other income	2.22	1.14	1.66	2.56
<b>Total Income</b>	<b>6.72</b>	<b>5.64</b>	<b>6.16</b>	<b>7.06</b>
Retirement benefits	2.55	2.36	2.19	1.96
Invalidity benefits	0.37	0.37	0.34	0.31
Survivors' benefits	0.61	0.58	0.56	0.55
Funeral Grants	0.13	0.13	0.12	0.14
Non-contributory pensions	0.41	0.47	0.55	0.55
<b>Total Benefits</b>	<b>4.07</b>	<b>3.91</b>	<b>3.76</b>	<b>3.51</b>
Operating Expenses	1.34	1.40	1.48	1.47
<b>Total Expenditure</b>	<b>5.41</b>	<b>5.31</b>	<b>5.24</b>	<b>4.98</b>
<b>Income less Expenditure</b>	<b>1.31</b>	<b>0.33</b>	<b>0.92</b>	<b>2.08</b>
Current Surplus –	(0.91)	(0.81)	(0.74)	(0.48)

<sup>1</sup>Contributions less expenditure

**4. Trend of Pensions in Payment**

Table 34 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 34**  
**Trend of Pensions in Payment (year-end)**

	Retirement	Invalidity	Widows/ers	Orphans	Total Pensions	Rate of Increase (%)
2007	2,747	326	884	1,228	5,185	-
2008	2,964	342	922	1,167	5,395	4.1%
2009	3,217	342	874	1,170	5,603	3.9%
2010	3,497	357	938	1,197	5,972	6.6%
2011	3,831	356	1,011	1,217	6,361	6.5%

2012	4,214	344	1,069	1,250	6,813	7.1%
2013	4,544	307	1,096	1,214	7,211	5.8%

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 death of the beneficiary and to "other causes", as many pensioners resume work and the pension is then suspended, or by reaching the maximum qualifying age in the case of orphans.

##### **5. 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 expenditure, yields an updated net rate of 2.60% for 2013 (2.48% in 2012), as shown in Table 35.

**Table 35**

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

	2013	2012	2011	2010
Gross rate	4.50%	4.50%	4.50%	4.50%
Other income	0.04	0.04	0.04	0.03
Total contributions	4.54	4.54%	4.54%	4.53%
Administrative expenditure	(1.34)	(1.40)	(1.48)	(1.47)
Grants –	(0.19)	(0.19)	(0.19)	(0.22)
Non-contributory pensions	(0.41)	(0.47)	(0.55)	(0.55)
Net rate for contributory pension benefits	2.60%	2.48%	2.32%	2.9%

<sup>a</sup>Includes all grants

## 7. Actual and Expected Number of Pensioners

Table 36 shows the ratio of actual versus expected number of pensioners in 2013, derived from the triennial projections. The data shows retirement pensions increasing at a slightly higher pace than expected and invalidity and survivors pensions at a slower pace, with an average very close to that projected in the last triennial projections.

**Table 36**

### Actual versus Expected Number of Pensioners

	Number of Pensioners		
	Actual	Expected	Actual / Expected
Retirement	4,454	4,406	1.01
Invalidity	307	352	0.87
Survivors	2,310	2,345	0.99
Total	7,071	7,103	1.01

## 8. Trend of Actuarial Cost, Reserves and Period of Equilibrium

Table 37 presents the comparison of the PAYG rate, reserves and the period of equilibrium, showing the gradual actuarial maturity of the long-term branch. Due to the adequate performance in 2013, with a modest increase in expenses, the period of equilibrium is anticipated to have remained static in 2013.

The projections show the following ratios, indicative of the gradual maturity of the long-term branch.

**Table 37**

	2013	2012	2011	2008
PAYG rate –	5.41%	5.31%	5.24%	4.83%

Reserves (millions of BZ\$)	\$328	\$317	\$315	\$262
Period of equilibrium	5 years	5 years	6 years –	10 years

<sup>a/</sup> Expenditure as a percent of insurable earnings

<sup>b/</sup> Incidence of the economic slowdown and lower interest rates

## 9. Trend of Demographic Ratios

Table 38 shows the trend of demographic ratios between 2007 and 2013. The higher rate of increase took place for retirement pensions, with 4.58 pensioners per 100 active contributors, lower than the ratio projected in 2011 (4.90) per 100 active contributors. The consolidated ratio increased to 7.83, also lower than ratio projected in the last triennial valuation (7.97). As at 31 December 2014 updated projections will be carried out, but the slower development of the demographic ratios means that the number of pension claims allowed has been slightly lower than anticipated.

**Table 38**  
**Trend of Demographic Ratios and Cost Ratios**  
**(At 31 December )**

	2013	2010	2007
Demographic Ratios (Pensions ÷ 100 active contributors)			
Retirement	4.58–	3.98	3.23
Invalidity	0.39	0.41	0.38
Survivors	2.86	2.19	2.49
Total (actual)	7.83–	6.58	6.10

<sup>a/</sup>Expected: 4.9

<sup>b/</sup>Expected: 7.97

## 11. Invalidity Grants

The number and cost of invalidity grants have been increasing steadily, with three times the amount spent in 2012 when compared to 2009. In 2009, invalidity grants represented only 14% of the total invalidity benefits, a proportion that increased to 32% and 26% in 2012 and 2013 respectively.

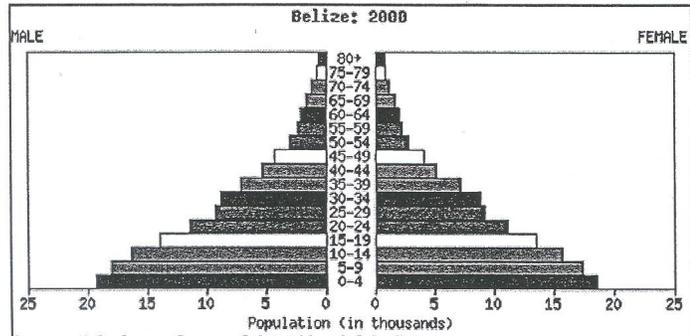
It is noted that at large proportion of invalidity grants are due to Diabetes Mellitus, a disease that in young or middle ages, usually does not cause total incapacity for work.

**Table 39**

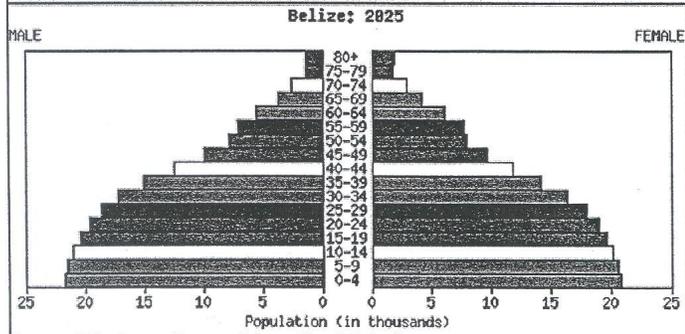
**Invalidity Grants**

Year	Number allowed	Percent of total invalidity payments	Amount paid
2013	53	26%	813
2012	47	32%	933
2011	53	24%	610
2010	42	15%	358
2009	31	14%	302

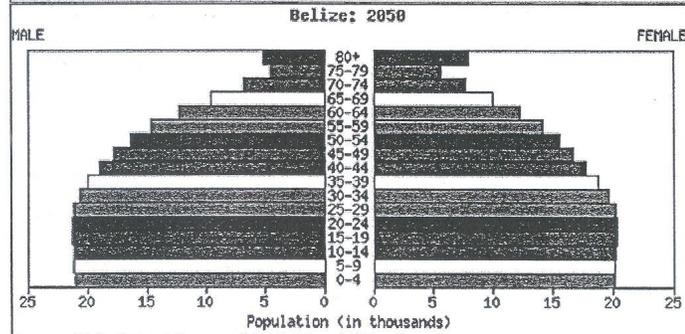
Population Pyramid Summary for Belize



Source: U.S. Census Bureau, International Data Base.



Source: U.S. Census Bureau, International Data Base.



Source: U.S. Census Bureau, International Data Base.

## 12. Financial Projections

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 and inflation. The financial projections are based on the provisions in force, but assume a dynamic adjustment to the ceiling and pensions in force in correlation with inflation.

**The 2013 experience yielded a PAYG ratio of 5.41 (5.31 in 2012), lower than the ratio projected in the 2011 triennial valuation, a temporarily favourable experience due to a higher level of contributions attributable to the economic recovery and a frozen level of administrative expenditure. However, the long-term projections show a steady increase in relative cost.**

PAYG Ratio (31 December 2013)	
Projected in 2011	5.73
Actual	5.41

## 13. Projection of Reserves and Periods of Equilibrium (2011 Triennial Valuation).

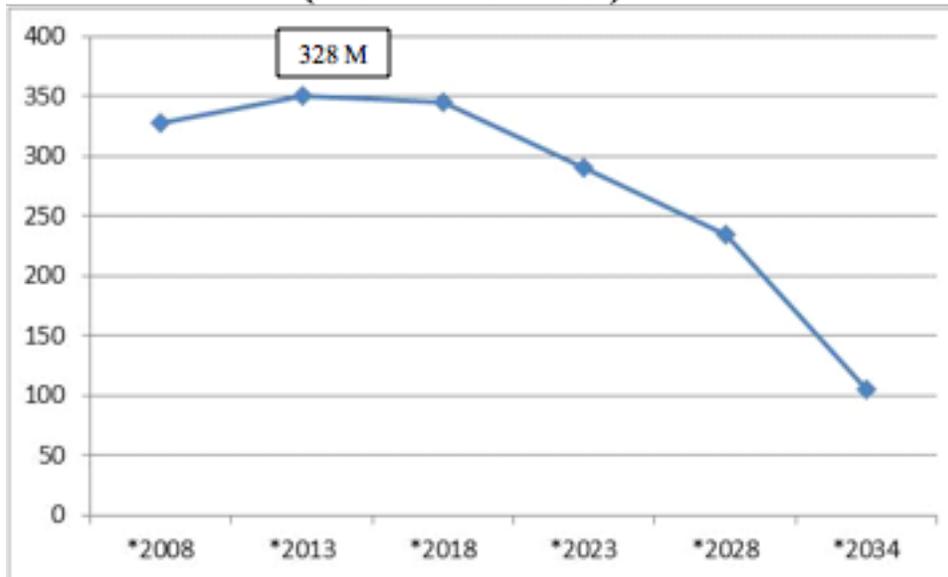
Table 40 shows the comparison of actual and projected reserves.

**Table 40**  
**Triennial 2011 Projection Actuarial Reserve**  
**(millions of BZ\$)**

	Accumulated reserve	Fund ratio–
2012	311 (7.4)	315 (7.4)
2013	319 (7.3)	329 (7.3)
2014	325*	a/
2015	331*	a/
2020	329*	a/
2025	236 *	a/
2030	(37)*	a/

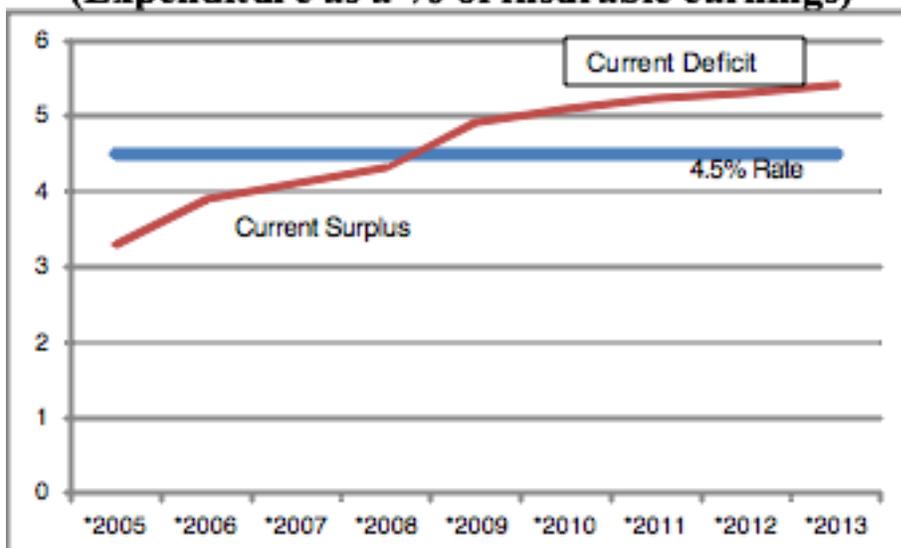
- a/-New triennial long-term projections to be carried out  
 b/-Reserves ÷ total expenditure  
 \* Projected in the preceding triennial valuation.

### Projection of Long-Term Reserves (Present Provisions)



Reserves would reach a maximum of \$352 million in about 5 years, (2018) (period of equilibrium) and then decrease steadily, becoming negative in 16 years (2028).

### Projected PAYG Premium – Long-Term Branch (Expenditure as a % of insurable earnings)



As from 2008, expenditure exceeds contributions of 4.5% of salaries on a sustainable basis. Deficits are covered by a share of investment income.



**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, and more recently in the Southern Region (Stann Creek and Toledo Districts). The government is planning to rollover of the program to the additional Districts in 2014.

**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 pilot 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 pilot 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 have

been financed exclusively by GOB transfers to the SSB, and residual reserves from previous SSB transfers, which have been consumed.

#### 4. Actuarial Systems

The EI 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

Table 41 shows the income expenditure and reserves of the NHI scheme. GOB transfers have remained static as from 2011. Benefit expenditure increased by 20% in 2010 (18% in 2009), remained static in 2011 and declined by 6% in 2012. Benefit expenses rose by 3.3% in 2013, still lower than the amount spent in 2007 and 2008, which included consultancies and non-recurring items. Overall, NHI expenses in 2013 increased by 3.1%. Reserves increased from \$2.5 million to \$2.7 million, but no assessment is available of outstanding benefits claims, which would reduce further the net amount of reserves.

**Table 41**  
**Financial Trends of the National Health Insurance Fund**  
**Amounts in BZ\$**

	2013	2012	2011	2010	2009
Government of Belize	14,000,004	14,000,004	14,000,004	14,245,864	12,754,140
Total contributions	14,000,004	14,000,004	14,000,004	14,245,864	12,754,140
Benefits	13,016,051	12,597,805	13,426,568	13,355,728	11,085,853
Operating expenses	731,607	738,871	879,850	792,005	691,644
Total expenditure	13,747,658	13,336,676	14,306,418	14,147,733	11,777,497
Excess of income over expenditure	252,346	663,328	(306,414)	98,131	976,643
NHI Reserves	2,751,373	2,499,627	1,835,698	2,142,113	2,043,982

#### 6. Financial Ratios

Key financial ratios have evolved as shown in Table 42.

**Table 42**  
**Key Financial Ratios**

	2013	2012	2011	2010

Benefits as % of contributions	93.0	90.0	95.9	93.7
Total expenses as % of contributions	98.2	95.2	102.2	99.2
Operating expenses as % of benefit	5.6	5.9	6.6	5.8
Fund ratio (reserves ÷ total expenditure)	0.20	0.19	0.13	0.15
* In months	2.4	2.3	1.6	2.0

**The analysis shows a level of reserves equivalent to only 2.4 months of expenditure,** which is below international accepted benchmarks. 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 7% the average monthly benefit expenditure, a rather liberal ratio, about \$1 million would be deducted from the gross reserve, or about one-half the reserve registered in the accounts, reducing the actuarial sufficiency of the reserve to a lower level.

#### **7. Summary of Financial Operations by Region**

Table 43 shows a summary of the financial operations by region, according to the NHI activity reports. Expenses in Southside Belize are equivalent to 39% of the total, as several services are provided only in Belize City, and they increased by 10% in the Southern Region.

**Table 43**  
**Financial Operations by Region**

	2013	2012	2011	2010
South Side Belize City	56	55	56	62
Southern Region	39	40	35	32
Total purchasing expenses	95	94	91	94
Administrative expenses	5	6	6	6
Total expense	100	100	100	100

**(percent distribution)**

## 8. Cost of Benefits by Type of Service

Table 44 shows the cost of benefits by type of service and region. Services in the Southern Region are limited to PCP, Ophthalmology and hospital deliveries. PCP accounted for 69% of total benefits expenditure, pharmaceuticals to 14%, and Lab tests to 9% in 2013.

**Table 43**  
**Benefit NHI Expenditure by Specific Service, in percent (NHI data)**

	Amount in %	2013	2012	2011
Primary Care (PCP)	8,641–	69	69	63
Pharmacy	1,815	14	14	15
Imaging	462	4	4	6
Lab tests	1,105	9	8	12
Ophthalmology	192–	1	2	1
Hospitalization	317–	3	4	3
Total (both regions)	12,534	100	100	100

<sup>a/</sup>55% in the Southern Region

<sup>b/</sup>48% in the Southern Region

<sup>c/</sup>100% in the Southern Region. Deliveries only.

## 9. Membership Data

Table 45 shows the membership (beneficiaries) data for the last four years, with a 9.5% increase in the number of beneficiaries in 2013, higher than the rate of increase in expenditure, implicit of an increase in the actuarial cost, as shown below.

**Table 45**  
**NHI Membership Southside Belize and Southern Region (December)**

	2013	2012	2011	2010
BFLA	12,573	11,880	10,900	10,263
BMA	12,690	12,000	12,000	12,000
Integral	13,791	12,000	12,000	12,000
M. Roberts	13,526	12,000	12,000	12,000
Sub	52,580	47,880	46,900	46,263
Dangriga	15,436	14,000	13,895	12,856
Independence	13,499	12,732	12,731	12,647
Punta Gorda	12,669	11,500	11,410	10,752
San Antonio	9,936	9,470	9,443	9,106
Mercy Clinic	1,066	-	-	-
Sub-total	52,606	48,101	47,419	45,361
Total	105,186	95,981	94,319	91,624
Average for the year	100,583	95,150	92,971	89,408

#### 10. **Actuarial Cost of the Program**

Table 46 shows the actuarial costs as a percent of the wage-base, showing actuarial costs of 5.28% in 2013, as compared to 5.60% in 2012, assuming a “notional” wage base of 30% the total SSB insurable earnings.

**Table 46**  
**Estimated Actuarial Cost of Benefits**  
**(Amounts in thousands of BZ\$)**

	2013	2012	2011	2010
SSB wage base	835,827	807,060	761,000	751,000
NHI beneficiaries (average)	100,583	95,981	94,319	89,408

NHI wage-base (30%)–	250,748	242,100	228,000	225,000
NHI benefit expenditure (\$)	12,534	12,598	13,426	13,356
Administrative expenditure (\$)	698	739	880	782
Total expenditure	13,230	13,337	14,306	14,138
Cost as % of wage-base	5.28%	5.60%	6.27%	6.28%
Cost per member per year	\$132	\$139	\$154	\$158

<sup>L</sup>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 rollover.

#### **12. Conclusions and Recommendations**

The GOB has in place a program for residents of a section of Belize City and the Southern Region, financed by budget transfers.

The reserve ratio declined in 2011, and represents only 1.6 months of expenditure as at 31 December 2011, a ratio that might fall by one-half taking into account outstanding claims by medical providers not reflected in the financial statements, far below accepted benchmarks of six months' average expenditure.

The estimated actuarial cost is assessed at 6.27% the notional wage base of the targeted population and the unit cost per beneficiary is assessed at \$154 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 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.**

**Data shows that 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 to assess contributions, for payments based on actual earnings, which are easier to manage by enterprises in the formal sector of the economy.**

## ANNEX A

### ASSESSMENT OF THE INVESTMENTS

#### (Third Schedule of the Act, Section 17)

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.

#### **1. Balance Sheet**

The consolidated sheet of the SSB shows \$124 million in short-term investments and \$236.6 million in long-term investments, including associates, for a total of \$360.6

million, a marginal increase as compared to \$358.4 million the preceding year. This is equivalent to 83% of total assets, with the remainder on fixed assets and accounts receivable.

The small increase shows the incidence of the higher actuarial maturity of the scheme, jointly with the incidence of the economic recession on the labour market, contributions and the rate of capitalization of reserves.

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

	2013–	2012	2011	2010
Cash and bank balance	20,673	17,710	13,492	10,441
Short-term investments	127,243	121,580	125,841	132,353
Long-term investments –	272,208	256,501	232,506	227,106
Accounts receivable and others	15,269	19,983	18,831	16,124
Fixed assets (net)	27,528	28,632	29,576	29,770
<b>Total assets</b>	<b>462,920</b>	<b>444,456–</b>	<b>420,246–</b>	<b>415,794</b>
Liabilities and deferred income	(6,102)	(7,136)	(10,022)	(19,229)
<b>Net reserves and special funds</b>	<b>456,818</b>	<b>437,320</b>	<b>410,224</b>	<b>396,563</b>

<sup>a/</sup> Includes investment in Associates

<sup>†</sup> Restated to \$441.5 million and \$434.4 million in 2012 and 2011 respectively.

## **2. 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 Associates and reduced the proportion in mortgages and short-term loans. **The focus on term deposits (long and short-term) is in accordance with the actuarial recommendation to increase the liquidity of the portfolio, due to the maturity of the scheme and the requirement of liquid returns to compensate the deficit between contributions and expenditure, as shown in Chapter II.**

**Percent Distribution of the Investments (31 December)**  
**(at 31 December )**

	2013	2012	2011	2010
Short-term	31.7	32.2	35.1	36.8
Associates	39.1	40.6	35.9	34.1
Long-term	29.2	27.2	29.0	29.1
Total	100	100	100	100

### 3. **Distribution of the Investments by Asset Class (31 December)**

The distribution of investments by asset class is shown below.

	2013	2012	2011
Debentures	1.47	1.55	0.20
Other	4.17	3.52	2.96
Shares	1.60	1.69	1.73
Treasury Notes	2.70	2.85	2.93
Real Estate	3.20	3.39	3.50
Mortgage & Housing	2.00	2.49	4.37
Private Sector Loans	15.34	14.63	15.63
Investments in Associates	38.80	39.05	35.91
Term Deposits	30.72	30.83	32.77
Total	100%	100%	100%

### 4. **Distribution of Reserves by Branch**

The distribution of reserves by branch is shown below, with the long-term branch accounting for 73% of the total reserves. The EI branch accounts for 21% of the total, a share that would be reduced significantly when formal approval to the transfer of excess EI branch reserves to the short-term branch and the long-term branch are formally enacted.

#### **Distribution of Reserves by Branch** **(as at 31 December, in thousands of BZ\$)**

Benefit Branch	2013	2012–	2011	2010	2009
Short-term	1,226	349	5,792	8,710	10,793
Long-term	328,218	317,288	304,276	297,237	276,937

Employment Injury	102,813	89,947	77,288	68,121	57,202
Disablement and Death	16,716	16,386	16,564	16,365	16,216
National Health Insurance Fund	2,751	2,499	1,836	2,142	2,044
Social Security Development Fund	1,802	1,507	1,043	654	450
Pension reserve	3,291	3,291	3,426	3,335	2,725
Total	456,818	434,910	410,224 <sup>Ⓡ</sup>	396,563	366,184

<sup>Ⓟ</sup>Provisional

<sup>Ⓡ</sup>Restated

<sup>Ⓡ</sup>Restated to \$424.2 million

**The short-term branch reserve has declined from 3% of the total in 2009 to less than 0.3% at year end 2013, and a recapitalization is urgently needed, as provided by the financial regulations, as the reserve has fallen below the minimum legal requirements.**

**Investment Listing (at 31 December)**  
**(amounts in thousands of BZ\$)**

	2013	2012
Term deposits	119,326	103,774
Loan (Citrus Grocers Assoc.)	6,916	7,306
Treasury Notes	0	10,500
Total Short-Term	126,242	121,580
-----		
Associates (BEL/BTL)	150,714	143,750
Debentures (BEL)	5,700	5,700
Shares	6,230	6,217
Term deposits	0	9,691
Treasury Notes	10,500	0
Private sector & loans	61,375	54,871

Loss provision	(1,788)	(1,028)
Mortgages & housing	10,545	13,498
Loss provision	(2,686)	(4,338)
Real estate	12,422	12,480
GOB loan	1,245	2,222
Belize city council	9,286	5,662
<b>Total Long-Term</b>	<b>111,494</b>	<b>102,751</b>
<b>Total</b>	<b>237,736</b>	<b>368,082</b>
Loan to associate (BEL)	10,000	10,000
Investments in associates (BEL)	83,501	78,014
Investments in associates (BTL)	67,213	65,735
<b>Grand Total</b>	<b>398,450</b>	<b>378,000</b>
Percent of net assets	87.2%	87.0%

## 5. **Performance Analysis**

The actuarial valuation report shows a consolidated performance of the investment portfolio in 2012 lower than in 2011, due to reduction in the market rates of interest and investment losses:

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

	2013	2012	2011	2010	2009
Net investment income	22,015	11,743	16,226	24,784	21,315
Nominal rate of return –	4.97%	2.75%	3.96%	6.45%	6.21%
Inflation rate (assumed)	0.50	1.30%	1.50%	0.90%	(1.10)%
Real return –	4.44%	1.00%	2.42%	5.50%	7.39%

<sup>1</sup> 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.

<sup>2</sup> According to the formula:  $[(1 + i) / (1 + s)] - 1$  where i and s represent the interest rate and the inflation rate.

The future performance will weigh more heavily on dividends than in the past, which are subject to higher volatility than interest on fixed income deposits.

## 6. **Actuarial Concept of Liquidity**

The actuarial liquidity concept is as follows; it differs from the financial concept, comprising basically investments in cash or readily available financial instruments.

Is expected to generate current income,

- i) Can be realized medium term (as needed) at a market value equal or higher than the original allocation (fair value),
- ii) Is not limited to investments in financial institutions such as CDs or Term Deposits
- iii) Complies with the basic principles of **Safety and Profitability**
- iv) Abetting socio-economic developments is a **subsidiary** consideration, providing the investment meets basic investment criteria.

#### **7. Financial Risks Factors**

The financial statements (Note 3) outline the financial risk factors the Board is exposed to: Price, Credit, Liquidity, Operations, Foreign Exchange, Cash flow and Interest Rate Risks, without specifying any qualifications. Of special concern from an actuarial standpoint are the Price Risk, to be reduced by the diversification of the portfolio; the Credit Risk, arising from the inability to pay by debtors (mortgages, loans, derivative products), and the Liquidity Risk, which is becoming more important as the maturity of the scheme increases.

#### **8. Comments on the Contingent Risk and Liquidity Levels of the Investments**

##### **a) Short-Term Investments**

Term deposits at local banks are considered a “liquid” investment, subject to the financial health of the banks. The performance of the Credit Union investment should be monitored.

##### **b) Investments in Associates (Shares & Debentures)**

- **Belize Electricity Ltd. (BEL):** As a shareholder, the SSB risk level is higher than as a bondholder. However, as a regulated utility, the annual return can fluctuate but the intrinsic risk is low due to the nature of the investment. The SSB also has a position in debentures at 10% to 12% interest.

- **Belize Telemedia Ltd. (BTL):** The investment in **shares** have a higher ranking than BEL shares, as the potential for profit (dividends and capital gains) has a better profile.
- **Belize Water Services:** The SSB holds \$4,000,000 **shares**, with a variable return potential due to the social nature of this regulated utility. It also awarded a **loan** of \$20.5 million at 8.5% interest. **Liquidity Level: Low.**

**c) Other Investments (Private Sector Loans)**

- High risk latent in several private sector loans, as well as the remaining mortgages. The external auditors have already registered provisions associated to these investments. Policy regarding “direct” private sector loans should be reviewed.

**d) Offshore Investments**

- **The Board is advised to consider potential investments in top quality financial issues (shares or bonds) on international financial markets, as the risk / return profile is higher than on domestic allocations.**

**9. Funds for Future Investments**

The availability of funds for new investments would depend on:

- a) Interest income on short-term deposits. **As banks have been reducing the rates of interest due to excess liquidity, the income from fixed deposits might decrease.**
- b) Income from Associates might remain stable, **provided no postponement occurs on the distribution of dividends on shares and bonds.**

Taking into account marginal income on new investments with fresh funds, might result in total investment income of approximately \$15 million in 2013. **Of that total, \$4.5 to \$5 million will be required to cover the gap between contributions and expenditure.**

**10. Investment Policy and Strategic Asset Allocation**

The SSB manages risks in accordance with the provisions of the Social Security Act. The investment policy is determined by the Board, based on recommendations by the Investment Committee. The investment policy should comply with the ISSA investment guidelines, by limiting a single investment to a ceiling of 20% of the reserves.

The Board is advised to avoid additional allocations on specific ventures in 2013/14 that would reduce further the proportion of short-term investments and the liquidity of the Fund. **Therefore, as a general guideline, the actuary advises to keep the allocation on fixed deposits at one-third of the investment portfolio, in order to ensure an adequate liquidity position for the period 2014/15, and to maintain a cash position at a minimum of three months' average total expenditure.**

#### **11. Benchmarks and Investment Performance**

Benchmarks for pension and investment funds in industrialized economies have been developed to measure the actuarial performance of an investment portfolio. A common index for equities offshore could be the SP500, and for bonds (fixed income), corporate or Government obligations or a similar indicator developed for a diversified portfolio of bonds on a national or regional basis. No similar benchmarks are available in Belize, where no established stock market is in operation, although the SSB has periodically purchased shares of private companies or statutory bodies.

**To assess the performance of the Fund, the most representative comparison in Belize at present are a combined ratio of the rates payable in Government Bonds and Term Deposits in financial institutions. However, the rates payable by the Central Bank seems to be dependant on monetary policy rather than market trends.**

#### **12. Summary**

The strategic asset allocation of the portfolio meets the international and SSB policy guidelines, stating that no type of investment should exceed 20% of the portfolio. However, in view of the increased actuarial maturity of the scheme, the Board is advised to seek an adequate level of liquidity on new investments, and to maintain the share of allocations with actuarial liquidity in the portfolio at or above 18 months total expenditure, excluding NHI operations. Actuarial liquidity means that the investment could be realized in cash when actuarially required, with an investment horizon which, at present, is less than 10 years.

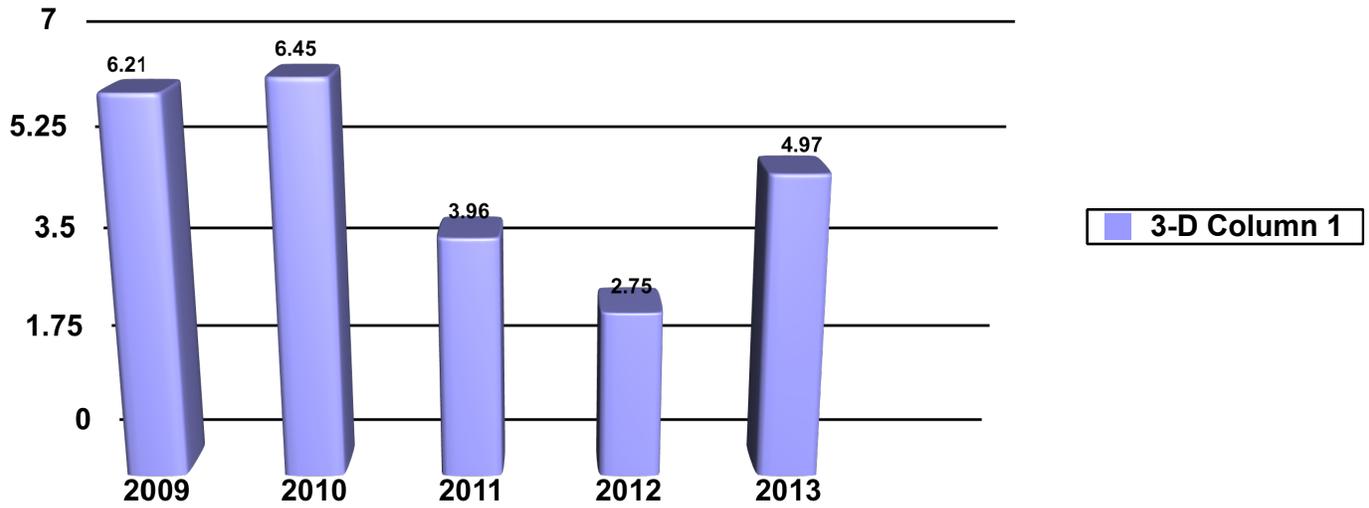
The actuary also advises cautionary measures in non-liquid assets as collateral on commercial loans, such as land or fixed assets, which might have a fair value lower than the appraisal value in case of a forced liquidation. Earmarking deposits on financial banks

as a special window for commercial loans, is a preferable alternative to a direct loan between the SSB and the borrower, with the Bank responsible to the SSB for the safety of the investment.

The actuary further advises to avoid additional purchases of local shares, as there is no active securities market in Belize, and thus there are a potential medium term 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, as a diversification policy of the investment portfolio.

### Nominal Rates of Return on Investments

(in percent)



The significant reduction on the rates of interest payable by the local banks, due to excess liquidity and restrained demand by personal and institutional borrowers, will have a negative incidence in 2013. It is not possible to ascertain for how long this cycle will persist, but as the economic slowdown subsides, the demand for loans, and thus the “passive” rates of interest, should again move upward.

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

As the GOB has a direct subsidiary obligation to guarantee the financial solvency of the SSB, the purchase of additional Treasury Notes or Bonds, when available, are deemed a more secure investment than private sector obligations. **This is also applicable to investments in a new Bank, under consideration by the Government.**

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 branch.

## Annex B

### ASSESSMENT OF THE NON-CONTRIBUTORY PENSION SCHEME

#### 1. Background

The payments of Non-Contributory Pensions (NCP) were transferred from the Ministry of Social Services to the SSB in July 2003, without a compensatory transfer of funds, by impacting negatively on the actuarial situation of the Long-Term branch. Although the contribution rate was increased by 1% of insurable earnings and assigned in its entirety to the long-term branch, which henceforth has been allocated 4.5% of insurable earnings. This increase has been recommended in previous actuarial valuations as part of the scaled-premium system of finance, to guarantee the long-term solvency of the long-term branch, and not specifically to finance the NCP scheme.

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.

#### 2. Trend of Pensions in Payment

The total number of NCPs has declined steadily from a peak of 4,934 early in 2008 to 2,749 pensions in payment at December 2013. The high 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 one-third the total numbers of pensioners, while the proportion of pensions in force in the Districts of Orange Walk and Belize represent 40% of the total.

**Table 1**  
**Trend of NCP Pensions (at 31 December)**

	2013–	2012	2011	2010

<u>Number of pensions in payment</u>				
Males	927	1,040	1,117	1,201
Females	1,822	2,049	2,164	2,403
Total	2,749	3,089	3,281	3,604

<sup>p/</sup>Provisional

### 3. Financial Trends

Table 2 shows the trend of benefit expenditure on non-contributory pensions with a steady reduction in benefit expenditure.

**Table 2**  
**NCP Benefit Payments**  
(Amounts in millions of BZ\$)

Year	Expenditure	Rate of Increase (%)
2008	4.934	106.3
2009	4.702	(4.7)
2010	4.201	(10.7)
2011	4,189	(0.3)
2012	3,781	(9.7)
2013	3,404	(9.8)

### 4. 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%

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**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, and assuming no further revaluation of pensions in payment for the next three years. It now seems that the long-term trend would be even lower, a ratio to be updated at the next triennial valuation at 31 December 2014. Raising the initial eligibility age to 67 years for females would reduce the medium term cost average further.

##### **5. Projected Benefit Expenditure and Extension of the Period of Equilibrium**

Assuming the SSB is able to control the cost of NCPs, with no pension adjustments over the next three years and modest adjustments thereafter, capitalized expenses over the next 10 years would amount to \$45 million approximately.

It is estimated that the transfer of NCP to the Government as from 1 January 2015 would allow the LT branch to extend the period of equilibrium by an additional 1.5 years, thus postponing the need to increase the contribution rate of employees and employers by a similar period.

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.

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 by naturalized persons.

#### **6. Rates of Award and Terminations**

Table 4 shows the rates of terminations and awards in the past three years. A gross death rate of 5.7% and 5.5% for other terminations, have exceeded the 2.5% rate of new awards, thus yielding the reduction in the number of pensions in force.

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

	2013	2012	2011
Death	(5.6)	(5.2)	(6.3)
Other	(6.9)	(4.6)	(5.0)
Sub-total	(12.5)	(9.8)	(11.3)
New awards	1.7	2.2	2.4
Net increase (decrease)	(10.8)	(7.6)	(8.9)
Balance at 31 December	2,749	3,089	3,281

<sup>a/</sup> Related to the balance at the beginning of each year

#### **7. Amendments to the Non-Contributory Pensions Legal Provisions**

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 to three years higher than the SSB normal retirement age; to increase to 20 years the residency requirement for naturalized citizens; to allow only one NCP to spouse or person 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 would constitute the initial set of legal amendments required by the SSB in the first phase.

The basic option (transfer to the Government) would require simply deleting the NCP Regulations but keeping the Committee as the management entity of the scheme. The alternative option would require amendments to the respective sections of the regulations.

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.

**Annex C**

**PERFORMANCE ANALYSIS OF THE SELF-EMPLOYED SCHEME**

**1. Registered and Active Contributors**

Since the inception of the self-employed scheme and up to 31 December 2013, a total of 4,796 persons were registered. Although the number of active self-employed contributors has remained stable at about 1.1% of the total active insured persons, but with contributions of only 0.64% of total contributions, indicative that self-employed persons are declaring notional earnings lower than employed persons. Of the active self-employed insured persons, 53% are females, as compared to 38% of females in the general scheme. **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 legislation are not considered as self-employed.

Table 1 show that the coverage rate has been decreasing steadily, from 63% of registered self-employed persons as active contributors in 2005 to only 22% in 2013. At present, there is no assessment of why 80% of registered self-employed persons are not on active status.

**Table 1**  
**Registered Self-Employed and Active Contributors by Year**

Year	Registered Persons	Active Insured Self-employed	Cumulative Registrations	Coverage Rate (Active / Registered) In percent
2005	445	663	1049	63%
2006	481	822	1530	54%
2007	574	949	2104	45%
2008	507	930	2611	36%
2009	517	972	3128	31%
2010	438	934	3566	26%
2011	402	949	3968	24%

2012	441	1043	4409	23%
2013	387	1,034	4,796	22%

## 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 (31 December 2013)**

Income Range	Weekly Wage-group	Percent Distribution	
		Self-employed	Employed
Low	160 and less	53	17
Middle	161/299	26	50
High	300 and over	21	33
	Total	100%	100%

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

Table 3 shows that **almost 17% of the active self-employed are 50 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 costs and actuarial liabilities.

**Table 3**  
**Proportion of Active Insured by Age Group (31 December 2012)**

Age-Group	Self-Employed	Employed
Under 34	24%	57%
35/54	57%	36%
55 and over	10%	7%
Total	100%	100%

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

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 in 2011.

The data show that:

- a) One out of every four contributors submitted a short-term claim per year.
- b) Maternity and sickness benefits account for 85% of all claims,

**Table 4**  
**Frequency of Claims by the Self-Employed. Short-Term Benefits**  
**(2011)**

Year	Number of Claims (Short-term)	Number of Active Self-Employed *	Incidence Rate
2007	205	960	21.4%
2008	232	930	24.9%
2009	246	972	25.3%
2010	225	934	24.1%
2011	250	948	26.4%
<b>Average</b>	<b>232</b>	<b>949</b>	<b>24.4%</b>

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

**Table 5**  
**Distribution of Self-Employed Claims by Benefit Type.**  
**Short-Term benefits (2011)**

<b>Benefit Type</b>	<b>Percent Distributio n</b>
Funeral Grant	0.9%
Injury Benefit	5.8%
Maternity Benefit	8.4%
Maternity Grant	7.9%
Sickness Benefit	77.1%
Short-term	100%

#### **6. Pension Benefits to the Self-Employed**

Table 5 shows the number of pensions awarded to the self-employed, with a ratio much higher than for employed persons. In only 10 years of operations a total of 114 retirement pensions have been awarded to the self-employed, equivalent to 11% of the total population of active self employed contributions, 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 \$2.6 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.

In view of the above, in addition to the 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 6**  
**Cumulative Pensions Awarded, by Category**

	2013			2012		
	Males	Female	Total	Males	Female	Total
Retirement	114	65	49	50	40	90
Invalidity	8	4	4	2	5	7
Disablement	11	11	0	9	0	9
Survivors	9	9	4	4	3	7
Total	142	85	57	65	48	113

#### **6. 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 7. Such deficits are funded by internal transfers from the general scheme, that over time will worsen the actuarial situation of the long-term branch. An assessment to be carried out by the Research Division would allow a more precise assessment of the actuarial cost.

**Table 7**  
**Actuarial Cost of the Self -Employed Scheme (Preliminary Assessment) <sup>a/</sup>**  
**(in percent of Insurable earnings)**

Contributions	7.0%
Short-term benefits	1.1
Long-term benefits	5.8
Administrative expenditure	0.5
Total expenditure	(7.4%)
Surplus (deficit)	(0.7%)

<sup>a/</sup>Subject to adjustment once a research project is concluded.

## 7. **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, and establishing “compliance” standards once they become voluntarily insured.**

The emerging experience shows an average for full range of short-term 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 might exceed the 7% rate of contributions, which is lower than the 8% rate payable by and on behalf of employed persons.

The analysis also shows an unusually high proportion of females (54%) as compared to the proportion of females in the general scheme (37%); a higher proportion of self-employed close to the retirement age, and average “notional” earnings lower than for employed persons, although both categories are eligible for a minimum pension of \$47 per week, indicative of adverse selection with a negative actuarial incidence on the long-term branch.

**Annex D**

**BELIZE**

**SOCIAL SECURITY BOARD**

**SUMMARY OF BENEFIT PROVISIONS**

## 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 insured man 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: \$47 per week.

Maximum pension: 60% of average insurable earnings.

i. 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 paid 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: \$47 per week.

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 – 2/3; 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: \$47 per week.

Disablement benefit

- degree of disability  
25% of 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 equals to 260 times the average weekly insurable earnings time 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.