

11th Actuarial Review of the St. Christopher & Nevis Social Security Fund as of December 31, 2014

Final Report

March 30th, 2016

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Abbreviations and Acronyms

EIB	Employment Injury Benefits
GDP	Gross Domestic Product
ILO	International Labour Office
IMF	International Monetary Fund
ISSA	International Social Security Association
IW	Insurable Wages
LTB	Long-term Benefits
NIA	Nevis Island Administration
OECS	Organisation of Eastern Caribbean States
PAYG	Pay-as-you-go
PEP	People Employment Program
SKN	St. Kitts-Nevis
SKNSS	St. Kitts-Nevis Social Security
SS	Social Security
SSB	Social Security Board
SSF	Social Security Fund
STB	Short-term Benefits
TFR	Total Fertility Rate

Introduction

St. Christopher (St. Kitts) & Nevis Social Security (SKNSS) began operations in February 1978. Prior to this, a National Provident Fund system was in place. Social Security currently covers all employed and self-employed persons in the Federation and offers three main types of social security benefits – short-term benefits, long-term benefits or pensions and employment injury benefits. The system is financed by contributions which are levied on employment earnings up to a wage ceiling and are paid by employers, employees and self-employed persons. Surplus funds that are not yet needed to pay benefits are invested locally, regionally and internationally in various types of securities and properties.

This is the report of the 11th Actuarial Review of the Social Security Fund and, in accordance with Section 39 of the St. Christopher & Nevis Social Security Act, 1977, it is being prepared three years after the 10th Actuarial Review. This report is being prepared for the Board.

The main purpose of periodic actuarial reviews is to determine if the social security system in St. Kitts-Nevis operates on sound financial and actuarial bases and if it provides adequate and affordable levels of income protection. Where considered necessary, recommendations aimed at ensuring that these objectives can be achieved for current and future generations are made.

For this actuarial review, 60-year demographic and financial projections have been performed. It should be noted that these projections are dependent on the underlying data, methodology and assumptions concerning uncertain future events and that the outcomes and eventual experience will most likely differ, possibly materially, from that indicated in the projections. Therefore, in accordance with the Social Security Act, periodic actuarial reviews should be conducted. The next Actuarial Review of the Social Security Fund is due as at December 31, 2017.

Derek Osborne, Actuary, visited St. Kitts-Nevis in November 2015 and March 2016 and held discussions with the Prime Minister, Chairperson, representatives of the Chamber of Commerce and the Workers' Union. He wishes to thank Ms. Maritza Bowry, Chairperson, Mrs. Sephlin Lawrence, Director, Mr. Donovan Herbert, Manager Research & Statistics, and all other members of the Social Security staff who assisted with this review.

All dollar amounts in this report are quoted in Eastern Caribbean (EC) dollars.

March 30th, 2016

Executive Summary

Social security systems make promises to former and current workers that extend beyond sixty years. It is therefore important that these systems are well designed, well governed and properly administered. Periodic actuarial reviews of the Social Security Fund provide a comprehensive assessment of the current and projected state of St. Kitts-Nevis's social security system. They also provide policy recommendations for changes designed to ensure that a suitable balance between benefit adequacy and financial sustainability is achieved for both current and future periods. This is the report of the 11th Actuarial Review of the Social Security Fund and has been conducted as at December 31st 2014. It covers the 3-year period 2012 to 2014.

Experience During The Review Period

During the review period the economy grew at an average rate of 2.8% and inflation was low, averaging 1.0% per annum. Contribution income was higher than projected due in part to the Government's employment program, PEP. Benefits increased gradually each year as expected. All pensions awarded prior to 2014 were increased in mid-2014.

Administrative costs increased more than projected and continue to be excessive, almost double the rate of other OECS social security schemes. Although discussed throughout the Federation a few years ago, no reforms to the pension age and other pension provisions, as recommended in previous actuarial reviews, were made.

In 2012 the St. Kitts-Nevis government restructured its debt as a means of improving its current finances and lowering its debt burden. The effect on the Social Security Fund was investment loss provisions of \$49.9 million and a significant reduction in yield and lengthening of the maturity period on \$41.5 million of Government bonds. During the review period, investment loss provisions were also made for investments in the CL Financial Group. In total, investment loss provisions and unfavourable debt exchanges affected approximately 8% of Fund assets.

Overall, the fund experienced large operating surpluses each year and at the end of 2014, reserves totalled \$1.32 billion, 18 times annual expenditure.

Assessment of Current Policy Provisions

This report's assessment of policy and design indicators suggests that current contribution and benefit provisions provide an adequate level of benefit and income protection to most workers and pensioners. The wage ceiling currently covers the wages of approximately 95% of workers and thus provides full income protection to most. Pensions are being increased periodically, the most recent increase occurring in mid-2014.

Notwithstanding recent investment losses the St. Kitts-Nevis Social Security Fund remains financially strong with contribution income still exceeding total expenditure. The key challenges facing the Fund are the poorly diversified investment portfolio and high administrative costs. Policymakers should also be concerned about the relatively generous Age pension which will result in costs increasing at a much faster pace than contribution income in the future.

Projection Results

For this Review three sets of 60-year projections of the St. Kitts-Nevis population and social Security Fund finances have been performed. Given the uncertainty in projecting such an extended period, the timing of certain events and the rates that will apply are presented as ranges. These projections are based on there being no changes to the current contribution rate and current benefit rules. Following are key results from status quo and two alternate scenario projections:

1. Total expenditure will exceed contribution income starting in 2016 or 2017.
2. Total expenditure will exceed total income between 2023 and 2027.
3. The Fund will be depleted between 2037 and 2041.
4. The pay-as-you-go rate, or the rate required to produce just enough contribution income to meet total expenditure when the Fund is depleted, will be between 25.0% and 28.5%.
5. The pay-as-you-go rate in 2074 will be between 28% and 41%.
6. The average long-term cost of benefits over the next 60 years, often referred to as the general average premium, is between 23.2% and 30.6%.

These results are slightly less favourable than those of the 10th Actuarial Review. The main reason for this is the lower assumed rate of return on investments.

A sustainable national pension system is one that over the long term, delivers on its financial promises in such a way that the financial burden is borne fairly equitably by participants. Under this definition, these results indicate that the Social Security Fund is not financially sustainable over the long term at the current contribution rate and pension provisions, as future generations will be required to contribute substantially more than previous and current generations. The projection results described above, however, are consistent with the partially funded nature of a national pension system, the contribution rate and pensionable age of 62 that were initially established.

A scenario where pension reforms inclusive of increasing pensionable age to 65 and revising accrual starting in 2017 suggests that long-term costs could be reduced significantly and place the Fund on a path to enhanced sustainability.

Recommendations

The many recommendations made throughout this report are summarised below. These recommendations are in keeping with the primary objectives of Social Security, which are, to consistently deliver on its promises and maintain a suitable balance between long-term sustainability and benefit adequacy.

1. To enhance coverage:

- Implement new ways that will allow self-employed persons to more easily make SS contributions.

2. To enhance benefit adequacy:

- Include in regulations the timing and basis for periodic adjustments to the wage ceiling and pensions in payment.
- Revise regulations so that persons who were awarded the maximum 60% pension replacement rate are allowed to receive periodic pension increases intended to combat the effect of inflation.
- Place in regulations provisions for the award of Age/Invalidity and reduced Survivors pensions to widow(er)s who meet the eligibility conditions for both pensions.

3. To enhance sustainability:

- Take steps to improve contribution compliance.
- Implement pension reforms that include:
 - Increasing pensionable age gradually from 62 to 65 by starting no later than January 2018, keeping age 62 available for payment of a reduced pension.
 - If below normal pensionable age, award Age pension only if the claimant is substantially retired.
 - Increase from three to at least five the number of years over which insurable wages are averaged when calculating pensions.
- Adopt a policy for future contribution rate increases that clearly states when and by how much contribution rates should be increased.
- Revise the investment target allocations in the Investment Policy to ones that will provide increased diversification to the Fund. Recommended medium term targets are:
 - At least 20% in overseas investments
 - No more than 20% in fixed deposits
 - No more than 50% in public sector securities
 - No more than 15% in domestic real estate
- Conduct thorough due diligence on both private and public sector initiated investment opportunities prior to final Board approval.

4. To enhance administrative efficiency:
 - Reduce administrative costs and set specific 5 and 10-year targets for expense ratios.
 - Make maximum use of the capabilities of the information technology systems and/or upgrade current systems so that service and efficiency levels may be improved.
5. To enhance stakeholder confidence in Social Security:
 - Establish a set of good governance guidelines tailored specifically for the Social Security Board. These guidelines should then be made public.
 - Implement pension reforms.
6. Other recommendations:
 - Consider the implementation of an unemployment benefit. This could be either funded with additional contributions or re-allocation of the Employment Injury benefit contribution.
 - As a first step in analysing the feasibility of introducing a system of national health insurance, prepare national health accounts.
 - Revise the contribution allocations between branches and transfer of reserves from the STB and EIB branches to the LTB Branch.

The ability of any social security system to remain meaningful to insured persons, yet affordable to future generations, is dependent on continued existence of the following four key ingredients:

- a) A healthy and growing economy,
- b) A well designed system,
- c) Effective and efficient administration, and
- d) Good governance.

Policymakers have limited control over future economic patterns, but a growing economy in which employment and wages are increasing will contribute positively to Social Security's long-term sustainability. Even though the Fund is strong and cash flow challenges are many years away, pension reforms which take several years to realize material savings, should not be postponed any longer. The Government and Board should therefore seek to enact reforms starting no later than January 2017. Several other Caribbean countries such as Barbados, Dominica, Montserrat and St. Lucia, have successfully implemented pension reforms that are resulting in reduced overall costs.

Good governance practices that see Government, the Board and senior management each accountable and transparent in their actions will positively influence the timing of pension

reforms, increased investment diversification as well as prudent and responsible decision making. With assets of over \$1.3 billion, Social Security may appear to be an institution that can afford to hire more staff than it needs, pay more for investments than another organisation would, meet Government obligations when it should not, and invest in securities where the risk-reward trade off suggests that it is not prudent to do so. This is not the case. For Social Security to consistently deliver on its future obligations without having to levy exorbitant contribution rates in the future, a firm commitment to implementing and following a good governance framework at all levels is required.

Chapter 1 Experience Since 10th Actuarial Review

1.1 Amendments To Act & Regulations

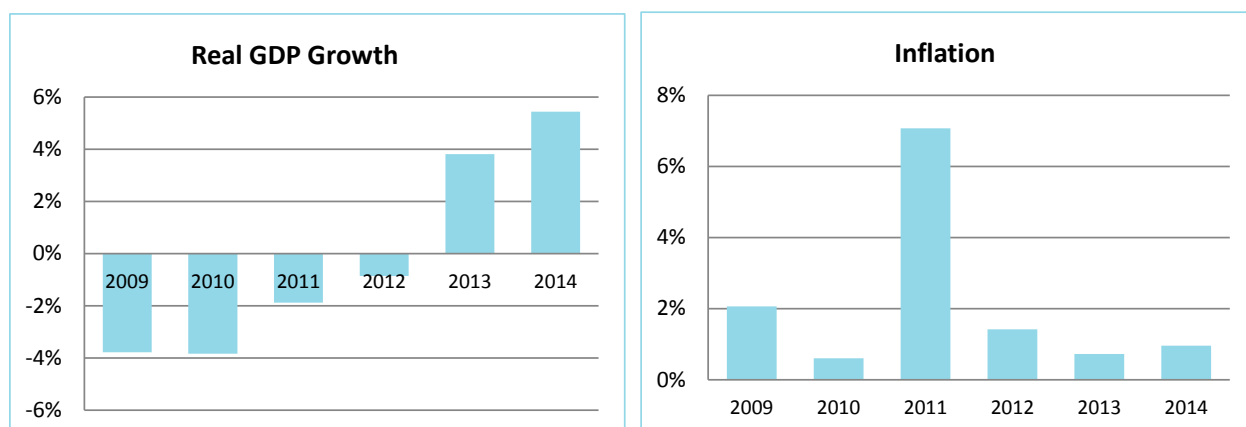
The 10th Actuarial Review of the Social Security Fund was conducted as of December 31st, 2011. The only amendments made to Regulations during the Review period were pension increases. The adjustments that took effect on July 2014 were as follows:

- Pensions awarded before 2010 increased by 6%
- Pensions awarded in 2010, 2011 and 2012 increased by 2%
- Pensions awarded in 2013 increased by 1%
- Minimum pensions were increased as follows:
 - Age/Invalidity: from \$400 to \$430 per month
 - Spousal Survivor: from \$200 to \$215 per month
 - Child/Parent Survivors: from \$96 to \$103.20 per month
- Assistance pensions were increased by 2% from \$250 to \$255 per month

1.2 Economic Experience

Contribution income is closely linked to economic performance and labour market changes. Some benefits are also affected by economic changes. As shown in the charts in Figure 1.1, the St. Kitts-Nevis economy expanded in 2013 and 2014 after four years of negative growth. During the actuarial review period the economy grew at an average rate of 2.8% per annum. Inflation during this period was very low, averaging 1.03% per annum.

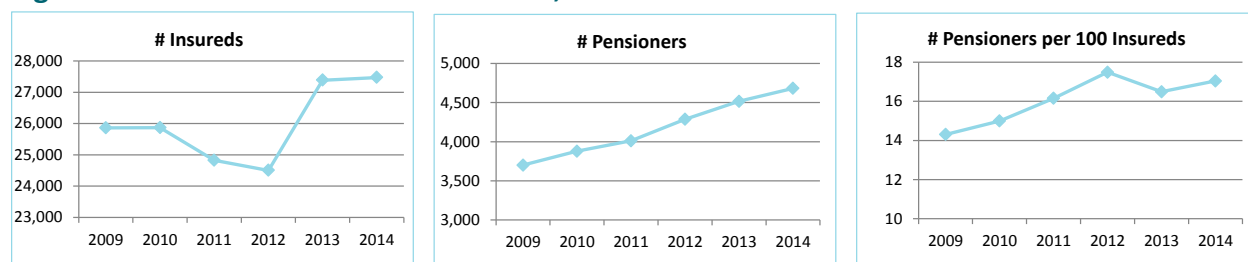
Figure 1.1. GDP Growth & Inflation, 2009 to 2014



1.3 Social Security Fund Experience

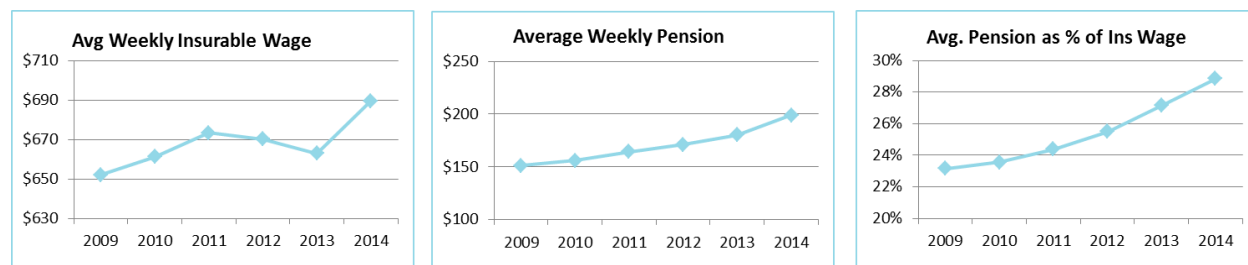
In line with changes in economic activity, the number of contributors increased during 2012 to 2014, (Figure 1.2 below). As expected, the number of pensions in payment increased each year. Resulting from fewer contributors and a continuous increase in the number of pensioners was an increase in the demographic ratio (number of pensioners per 100 insured persons) from 16.2 to 17.0 between 2011 and 2014.

Figure 1.2. Contributors & Pensioners, 2009 to 2014



Both the average insurable wage and the average pension in payment increased between 2011 and 2014, (Figure 1.3 below). There was a general pension increase in 2014. Average pensions divided by average insurable earnings is often referred to as the replacement ratio. This ratio increased from 24.4% to 28.2% between 2011 and 2014 indicating that average pensions increased at a faster rate than average insurable earnings.

Figure 1.3. Average Insurance Wages & Pensions in Payment, 2009 to 2014



The following table provides summary income and expenditure amounts for 2012 to 2014. A more detailed version of the Social Security Fund finances for these years may be found in Appendix D.

Table 1.1. Summary of SSF Finances, 2012 – 2014 (millions of \$'s)

	2012	2013	2014
Income			
Contributions	69.7	74.7	82.5
Investment	64.8	65.7	62.6
Other	0.5	0.7	0.5
Total	135.0	141.1	145.5
Expenditure			
Benefits	47.4	52.5	59.6
Administrative	12.1	14.9	15.8
Provision For Loss on Investment	10.8	0.3	45.1
Total	70.2	67.6	120.4
Excess of Income over Expenditure	64.7	73.4	25.1
Reserves^ (end-of-year)	1,228.6	1,299.3	1,324.0

^ Includes reserves allocated to the three benefit branches plus Revaluation Reserve. NPF Fund and Staff Supplemental Plan Reserves are excluded.

Highlights of income and expenditure are:

- Contribution income increased significantly due to increased economic activity and the People Employment Program (PEP). Under PEP the Government has been paying the wages of over 3,000 workers deployed in both the public and private sectors.
- Investment income declined slightly in line with rates offered on short-term fixed deposits.
- Benefit expenditure increased each year.
- Administrative costs increased significantly over previous years.
- Significant provisions for losses on investments were made in 2014.
- Despite the write-down on investments, the Fund experienced surpluses in all years.

1.4 Benefit Branches & Other Reserves

While the summary of SKNSS finances presented in the previous section shows total income and expenditure, internal accounting procedures separate finances into three branches representing the three major types of social security benefits – long-term or pensions, short-term and employment injury benefits. Each benefit is allocated to one of the three branches and each benefit branch is allocated a certain percentage of contribution income, investment income and administrative costs. Since the benefit types have different characteristics and financing mechanisms, the separation allows for better monitoring of experience. The existence of branches does not, however, affect the overall financing or sustainability of the Fund.

The financial experience of each branch and detailed benefit experience for 2012 to 2014 may be found in Appendix E.

The Social Security Fund also comprises three non-benefit reserves as described below.

Table 1.2. Non-Benefit Reserves

Reserve	Description	Dec. 2014 (in millions)
Revaluation Reserve	Cumulative gains and losses on revaluation of freehold properties and investments designated as “available for sale”	\$13.66
National Provident Fund (NPF) Reserve	Accumulated NPF balances less members’ claims settled.	\$25.68
Staff Supplemental Benefit (SSB) Reserve	Assets of the Staff Pension Plan	\$9.85

For the analysis and projections of this actuarial review, NPF and SSB Reserevs are exlcuded.

1.5 Experience Compared With Projections Of 10th Actuarial Review

Shown below is a comparison of actual cumulative experience over the 3-year review period with the projections of the baseline scenario of the 10th Actuarial Review.

Table 1.3. Projections from 10th Actuarial Review Compared With Actual Experience

	2012-2014 Projected (millions of \$'s)	2012-2014 Actual (millions of \$'s)	% Difference
Contribution Income	214.9	226.9	6% above projected
Investment Income	193.8	193.0	As projected
Benefit Expenditure	162.0	159.4	2% below projected
Administrative Expenditure	36.6	42.8	17% above projected
Investment Loss Provisions	-	\$52.7	Not estimated
2014 Year-end Reserves	1,410.0	1,324.0	6% below projected
Reserve-Expenditure Ratio (end of period)	19.6	17.6	10% below projected

Note: Following the submission of the report of the 10th Actuarial Review provisions for loss on investments of \$33.2 million were applied to 2011 thus reducing 2011 year-end reserves.

As shown above, actual income, expenditure and reserves over the review period were generally in line with projections. Contribution income was 6% higher than expected due mainly to the PEP where over 3,000 workers were hired by the Government and placed in both private and public sector jobs. Administrative expenses were significantly above projected. Investment loss provisions which were not estimated in the 10th Actuarial Review, accounted for most of the 2014 end of year difference in reserve.

1.6 Investments

At the end of 2014, Social Security Fund investments stood at \$1.27 billion, up from \$1.15 billion at the end of 2011. Social Security investments represent approximately 66% of GDP.

The relationship between investments and reserves, which measures how efficiently available funds are invested, averaged 95% over the 3-year review period. This is very good.

During the review period, the average yield on investments was 5.5% and the average yield on reserves was 5.3%. With inflation averaging 1.03% per annum, the average real rate of return on reserves was 4.2%.

The following table provides a summary of the investment mix of the Social Security Fund at year-ends 2014 and 2011.

Table 1.5. Summary of Investments, Year-end 2014 & 2011 (\$'s in millions)

Investment Category	2014		2011	
	\$'s	%	\$'s	%
Treasury Bills	29.3	2.3	29.7	2.6
Certificate of Deposit	844.2	66.3	659.5	57.1
Government Securities	174.0	13.7	308.9	26.8
Corporate Securities	3.0	0.2	2.4	0.2
Equities	45.5	3.6	46.8	4.1
Real Estate	165.9	13.0	95.3	8.3
Other Investments	11.3	0.9	11.5	1.0
Total	1,273.2	100%	1,154.1	100%

During the review period total investments increased by \$119.1 million and there were material changes in the following:- certificates of deposits and real estate holdings increased while Government securities decreased.

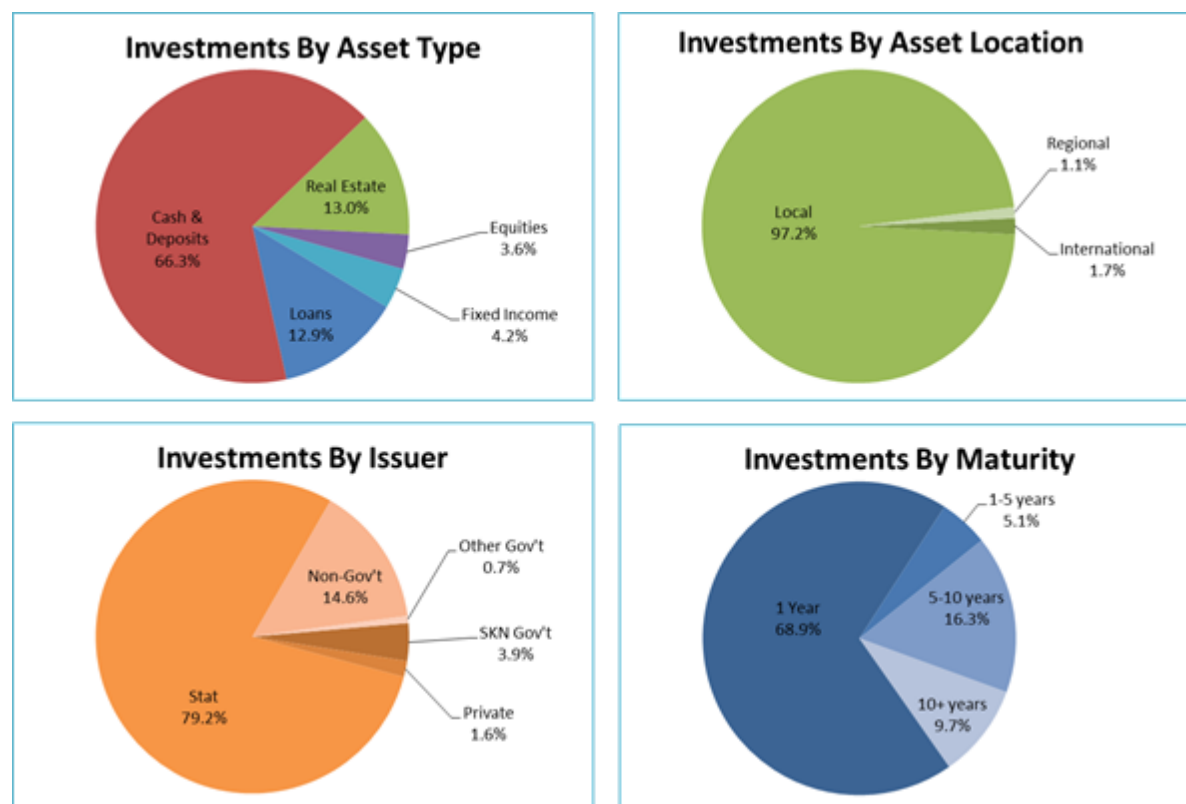
In 2012 the Government restructured its sovereign debt. The restructuring included haircuts on principal, extended maturity dates and reduced yields. For Social Security, this restructuring also affected loans to the Nevis Island Administration and Statutory Corporations. Below is a summary of the debt exchange and investment loss provisions made:

- Bonds totalling \$41.572 with maturities of 10 and 12 years and interest rates of 7.5% and 8.5% respectively, were retired and exchanged for a 45-year bond with the same face amount but interest rate of 1.5% per annum.
- Loans to the Nevis Island Administration and Statutory Bodies totalling \$26.9 million were restructured resulting in a loss provision of \$9.3 million.
- Loans to St. Kitts Statutory Corporations totalling \$179.5 million were restructured resulting in a loss provision of \$40.5 million.

When CLICO and BAICO were placed under judicial management in 2009, Social Security held combined investments of \$15.4 million in deposit-type instruments. December 2014 financials show investments with the CL Financial Group totalling \$9.3 million, all of which has been provided for. It remains uncertain how much of the total investment will be recovered.

Diversification is a critical component in the investment of Social Security Funds. How well investments are diversified can be assessed using four criteria:- across various asset classes, across maturity dates, across different locations and by issuer of the underlying securities. The following charts illustrate the diversification of SSF investments as of December 2014.

Figure 1.4. Investments, December 2014



Analysis of the asset mix, with specific emphasis on diversity, shows that:

- By asset class: inadequately diversified with two-thirds in cash and deposits.
- By location: poorly diversified with only 3% outside of St. Kitts-Nevis.
- By issuer: inadequately diversified with over 80% backed by local public sector entities.
- By maturity: Significant mismatch between the (short) maturities of most investments and the long-term nature of Fund liabilities, with no short or medium-term need to liquidate assets.

SSF investments are guided by an Investment Policy Statement (IPS) which was last revised in 2014. This Policy sets out investment objectives and guidelines for the Fund and defines the

management structure and monitoring procedures for both internal and external investment management. It also includes a desired asset allocation policy for the Fund.

The following table shows the asset mix at December 31, 2014 compared with the acceptable ranges found in the IPS. As shown, holdings of all but one asset class (real estate) are outside the desired target allocation. The Board should therefore take immediate steps to review the desired mix in the Investment Policy in line with prevailing investment opportunities and rebalance investments to achieve a more diversified and lower risk portfolio.

Table 1.6. Actual Asset Mix Compared With Investment Policy Targets, December 2014

Investment Class	Actual	Target Allocation	Variance
Treasury Bills	2.3%	5% - 10%	Below
Certificate of Deposit	66.3%	40% - 50%	Significantly above
Government Securities	13.7%	20% - 30%	Significantly below
Corporate Securities	0.2%	5% - 15%	Significantly below
Equities	3.6%	10% - 20%	Significantly below
Real Estate	13.0%	10% - 20%	Within range
Other Investments	0.9%	5% - 10%	Significantly below

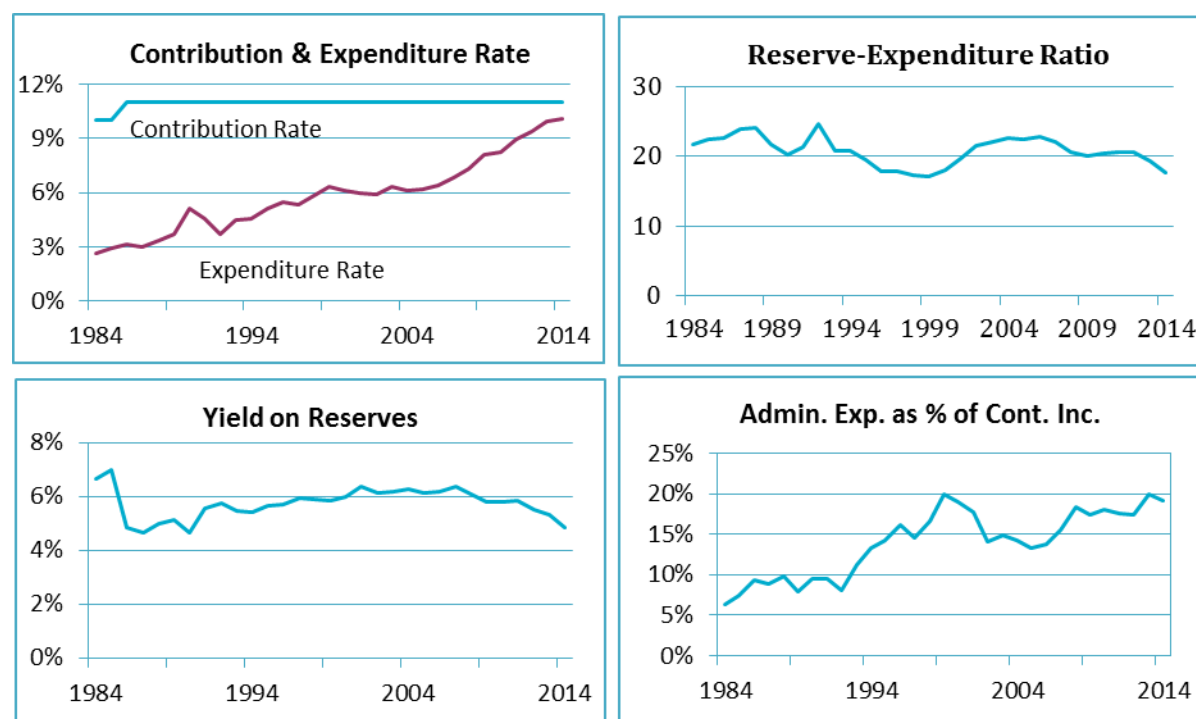
Chapter 2 Performance & Design Assessment

Social security systems must balance benefit adequacy with affordability and long-term sustainability. There is an obvious trade-off between these concepts:- higher benefits provide larger incomes to beneficiaries, but cost more while inadequate pensions result in pressures to increase benefits or add new ones. This Chapter analyses past trends for key financial indicators and current design parameters, and examines how well key policy objectives are being met.

2.1 Historical Performance, 1984 – 2014

Experience for key financial factors from 1984 to 2014 is presented in the following charts:

Figure 2.1. Social Security Board Financial Experience



As a partially funded social security system matures total expenditure as a percentage of insurable wages gradually increases. To date, contribution income has generally followed such a pattern and has always exceeded total expenditure. The size of the reserves relative to annual expenditure typically decreases but this has not been the case for the SSF, (top right chart). As the size of the Fund grows, the rate of return becomes more critical to enhancing long-term sustainability. Rates of return were near 6% for almost 30 years but have declined recently.

After several years of being relatively steady, administrative costs as a percentage of contribution income increased during this review period, reaching close to its highest point in Fund history.

Following are values for several key indicators as of the dates of the 7th, 8th and 9th Actuarial Reviews along with a brief analysis of the changes that have occurred.

Table 2.1. Social Security Performance Indicators

	2008	2011	2014	Comments
1. Contribution Rate (private)	11.0%	11.0%	11.0%	Unchnaged since 1986
2. Expenditure Rate	7.3%	8.9%	10.0%	Gradually increasing as expected
3. Benefits as % of GDP	2.0%	2.7%	3.1%	Gradually increasing as expected
4. Reserve-Expenditure Ratio	20.6	20.6	17.6	Recent decline after many years of being slightly above 20
5. 3-year average nominal yield on reserves	6.2%	5.8%	5.3%	Returns delcining in line with market interest rates
6. 3-year average real yield on reserves (net of inflation)	0.1%	2.6%	4.2%	Inflation very low in recent review period
7. Administrative Expenses (3-yr average) as: <ul style="list-style-type: none"> • % of Contributions • % of Conts. + Benefits • % of Insurable Wages 	15.8% 10.8% 1.7%	17.7% 11.1% 1.9%	18.8% 11.1% 2.1%	Generally higher in each successive review period
8. # of Contributors Per Pensioner	7.0	6.2	5.8	Slight reductions as expected
9. Avg. Pension as % of Avg. Insurable Wage	19.7%	24.4%	28.4%	Gradually increasing as expected

These indicators are generally consistent with expectations of a maturing social security fund and economic conditions between 2011 and 2014.

2.2 Meeting Policy Objectives

The rules and the amounts, at which key parameters are set, determine benefit adequacy. How well certain rules are enforced, and how well the system is managed, also impact how well policy objectives are met. To determine how well these objectives are being met, and how likely they are to be met in the future, an analysis of current contribution and benefit provisions, key rates and parameters as well as actual performance indicators have been reviewed. While some mention is made of Short-term benefits, this analysis focuses primarily on pensions which accounted for 80% of SSF benefit expenditure in 2014.

2.2.1 Coverage

With SS participation mandatory for all employed and self-employed persons, coverage concerns relate to actual participation rates by formal and informal sector workers, and the proportion of elderly residents receiving a SS pension. The following three estimates for 2014 provide a fairly good analysis of current coverage levels:

- % of workers (employed & self-employed) contributing to SS >90%
- % of contributors that have their wages fully covered by SS 95%
- % of elderly resident population who receive a SS pension 75% to 80%

The first two indicators above show that most workers in St. Kitts-Nevis made at least one contribution during the year and that all but 5% earn less than \$6,500 per month. This level of coverage is very good and current wage ceiling is at an adequate level.

With close to 80% of the elderly resident population receiving a pension from SS, the objective of providing a reliable source of income in old age is being met.

2.2.2 Adequacy

Benefit adequacy relates to the ability of benefits, especially pensions, to provide a decent standard of living when employment income is disrupted. Benefit adequacy can be broken down into two components:

- Current adequacy: Are pensions adequate today?
- Future adequacy: Under current provisions, will the pension be adequate in the future?

Current Adequacy

The minimum contributory pension is currently \$430 per month having been increased from \$400 in July 2014. \$430 per month is approximately 14% of the average insurable wage. This is slightly low. (15% is considered acceptable)

For pensioners receiving more than the minimum, their pension replacement rates are initially between 30% and 60% of their final average insurable wage, lower for the small percentage of very highly paid persons. This replacement level is considered adequate.

Future Adequacy

A worker who has steady earnings below the wage ceiling and contributes to SS for a full career, sustaining him/herself predominantly from his employment earnings, can expect a pension of close to 60% of pre-retirement earnings. By ILO and other international standards this is adequate and thus meets any reasonable test of benefit adequacy for a social security pension. The challenge quite often, especially for the self-employed, is that many workers do not have steady wages and do not consistently work and contribute for 35 years.

The ceiling has been fixed at \$6,500 where around 95% of workers are fully covered. Given that neither wage ceiling nor pension adjustments are automatic there is some uncertainty re future benefit adequacy. While no ceiling adjustment for an extended period will have an effect on the ultimate pension replacement rate of higher income workers, not increasing pensions periodically will result in a gradual decline in the purchasing power of these pensions.

Social security pensions are not intended to provide all of the income required to support oneself in old age. Based on the above, current contribution and benefit provisions provide pensions in old-age that meet reasonable tests of future benefit adequacy.

When non-pension benefits are considered, the various short-term benefits provide income protection for almost all contingencies that could lead to involuntary loss of employment income. The only contingency not currently provided for is involuntary unemployment.

2.2.3 Financial Sustainability

Assessing the sustainability of a national pension system is complicated. Given the perpetual nature of these systems, some of the rules that apply to private pensions systems are not appropriate. Therefore, whether current reserves plus future contributions at the current contribution rate are sufficient to meet future expenditure should not be used to determine long-term sustainability. Instead, assessing sustainability involves looking at the cost of the system now and in the future, and considering whether or not employers and workers in the future will be able to afford the cost. A definition of financial sustainability that has become widely used in social security discussions is whether the pension system is able to meet the needs of current generations without compromising the needs to future generations.

By design, the SSF is partially funded and the current contribution rate and accumulated reserves are expected to be adequate to meet all obligations for approximately 25 more years. When contributions alone are no longer sufficient to meet expenditure, increasing portions of investment income will be needed to pay benefits and then eventually investments will have to be liquidated. This is a natural progression for partially funded national pension systems.

It is not possible to determine today the highest contribution rate that workers and employers will be able to afford, or willing to pay, twenty to thirty years from now. With reserves not growing as fast as they have in previous years, and reduced rates of return on investments in this new low interest rate environment, contributions will have to account for the greater portion of future Fund income.

Based on regional and international comparisons the SKNSS provides a generous benefits package for a moderate contribution rate and thus its financial sustainability may come into question. The key challenge for current and future Boards and governments regarding financial sustainability is determining when will be the right time to increase the contribution rate and/or reduce benefit promises. Reforms to benefits have been discussed but not yet implemented.

2.2.4 Administrative Efficiency

An average of 18.8% of contribution income, 11.1% of contributions plus benefits, or 2.1% of insurable wages, was spent on operating expenses over the three-year review period. Compared with other social security funds in the OECS this is high. Administering a social security fund in a relatively small twin-island Federation in a traditional manner will be costly. Therefore, non-traditional approaches to performing tasks and providing required services should be considered.

Regarding effectiveness of its operation, it appears that the Board performs reasonably well at collecting contributions and adjudicating claims and paying benefits in a timely manner. Both cost savings and improved performance could however be achieved if greater use were made of available technology.

Recommendations relating to each of these national pension policy objectives are presented in Chapter 5.

2.3 Comparisons With Other OECS Countries

Even within the OECS, it is difficult to compare social security schemes given the special peculiarities of each country's system, history and economy. For example, the age of the scheme affects its current financial state as does the level of the initial contribution rate and reforms made since inception. The following tables highlight the similarities and differences of the SKNSS with other social security schemes in the OECS in several key areas.

Table 2.2. SKNSS Compared With Other SS & NIS Systems in the OECS

Contribution rate (private employees)	The 11% rate is second highest to Dominica (11.5%). 10% is the combined contribution rate in Antigua-Barbuda, St. Lucia and St. Vincent, while Grenada and Montserrat are at 9%.
Wage ceiling	At \$6,500 per month, St. Kitts-Nevis and Antigua-Barbuda are the highest after Anguilla (\$7,000); followed by Dominica (\$5,055) and St. Lucia (\$5,000).
Benefits Package	Slight differences only.
Pension Age	Still age 60 in Antigua-Barbuda and Grenada and 62 in St. Kitts-Nevis. 65 in St. Lucia reached in 2012 after 12 years. All others are gradually increasing to 65.
Pension Accrual rates	With the exception of Antigua-Barbuda (50%), all others have a maximum pension of 60% of average insurable wages. The accrual rate after 10 years is 30% in most (25% in Montserrat)
Investment Mix	SKN has least diversified portfolio - much lower portion overseas (both regionally and internationally) than most others and higher concentration of short-term deposits than others.
Administrative Costs	Highest among those with publicly available information (See Section 5.4)

Table 2.3. Recent Social Security Reforms in the Caribbean

Reform	Country	Comments
Increasing pensionable age to 65	Dominica, Montserrat, St. Lucia, St. Vincent	Barbados is moving to age 67
Revised formula for pensions	Dominica, Grenada, Montserrat, St. Vincent	Accrual rates & final average wages
Contribution Rate increase	Single increases in Antigua-Barbuda & SVG, annual adjustments in Dominica	In Dominica, ¼% per year for 20 years will see rate move from 10% to 15%
Automatic ceiling & pension increases	BVI, Bahamas, Barbados	Every year in BVI & Barbados, every second year in The Bahamas
Unemployment benefit	Bahamas (2009)	Only other country with this benefit is Barbados

Chapter 3 Best-Estimate Projections

Many demographic and economic factors, such as changes in the size and age structure of the population, economic growth, employment and wage levels and inflation, influence Social Security Fund finances. Therefore, to best assess the Fund's long-term costs and sustainability, projections of St. Kitts-Nevis's total population and the economy are required. For this review 60-year projections have been performed.

In developing the assumptions used for the projections, historical trends and reasonable future expectations, as well as the interrelationships between the various assumptions, have been taken into account. Core projections have been performed using assumptions that reflect best estimates. The demographic and financial projection results based on this assumption set are referred to throughout this report as "Best Estimate."

3.1 Population Projections

St. Kitts-Nevis has experienced net out-migration for decades. Fertility rates continue to decline while life expectancy continues to increase.

Projection Assumptions

Projections of St. Kitts-Nevis's population begin with the results of the 2011 census and in each projection year thereafter, fertility, mortality and migration assumptions are applied. Fertility rates are used to estimate the number of births each year while mortality rates determine how many, and at what ages, people are expected to die. Net migration represents the difference between the number of persons who permanently enter and leave St. Kitts-Nevis, and is the most volatile of the three factors. The 2011 population census placed St. Kitts-Nevis's population at 46,398.

The total fertility rate (TFR) represents the average number of live births per female of childbearing age in a particular year. If there is no migration, a TFR of 2.1 is required for each generation to replace itself. St. Kitts-Nevis's TFR was estimated at between 1.6 and 1.7 over the period 2011 to 2014. For these projections it is assumed that TFR's in St. Kitts-Nevis will be constant at 1.65.

The United Nations Latin America life table and the number of deaths in the past few years suggest life expectancy at birth in 2014 of around 70 for males and 75 for females. Improvements in life expectancy are assumed to occur in accordance with UN estimates.

The third factor that affects population size is migration. This is the most volatile and most difficult to measure. Between 2001 and 2011, net outward migration averaged around 350 per annum. For this report, net outward migration is assumed to continue up to 2045.

The economic assumptions used for this report assume stable and positive economic growth and labour productivity in all years. Although simplistic, they approximate usual economic cycles and volatility that encompass periods of expansion and recession. They also account for projected changes in the population and labour force that will provide the capacity for additional output through more workers and increased productivity (real wages).

The following table indicates the principal demographic and economic best-estimate assumptions for this and the previous Review. Further details may be found in Appendix B.

Table 3.1. Principal Demographic & Economic Assumptions

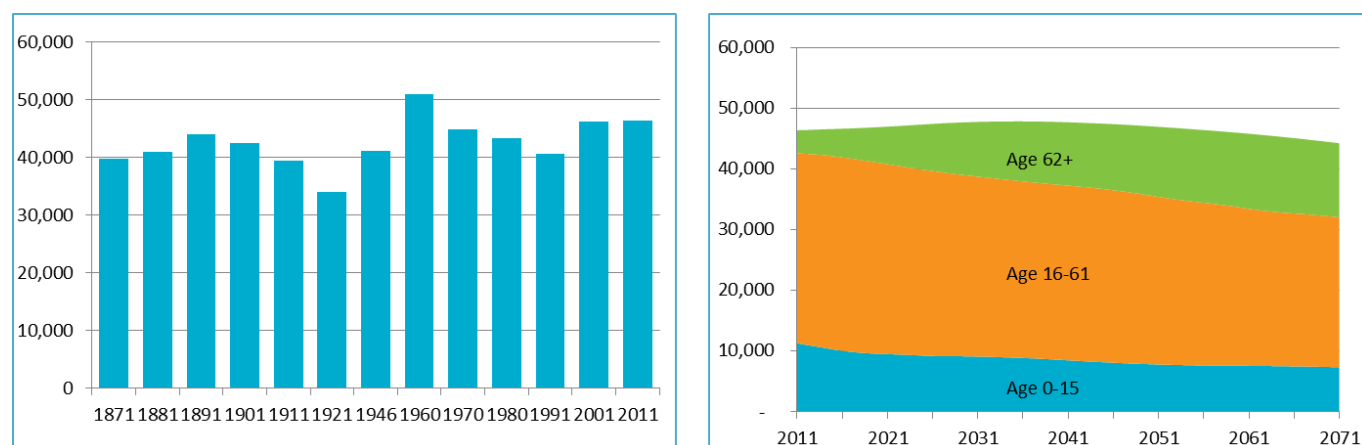
		11 th Actuarial Review	10 th Actuarial Review
Total Fertility Rate		1.65 in all years	1.8 in all years
Mortality Improvements [^]		Slow	Slow
Net In-Migration Per Annum		-250 between 2011 and 2015, decreasing to -100 in 2025, then 50 in 2045	-275 between 2011 and 2015, decreasing to -50 in 2025, then 0 in 2045 increasing to 50 in 2065
Real GDP Growth Rates	Short-term	5% (2015), 3.5% (2016) 2.5% (2017 to 2020)	2.0%
	Med.-term	1.5%	1.5%
	Long-term	1.0%	1.0%
Real Increase in Wages		0.80%	0.75%
Long-term Inflation		2.25%	2.5%

[^] UN mortality improvement rates

3.1.1 Projection Results

The 2 charts in Figure 3.1 illustrate St. Kitts-Nevis' population from 1871 to 2011 and the projected population under the assumptions presented above. From the 2011 Census population of 46,398, and with the above assumptions, St. Kitts-Nevis's population is projected to increase over the next 20 years and then gradually decrease.

Figure 3.1. Historical & Projected St. Kitts-Nevis Populations



Numerical details of these projections may be found in Appendix C.

It should be noted that the projections presented in this report have been prepared for the sole purpose of determining the implications for SSF finances.

For the SSF, while projected future population size is important, the age distribution is more critical, as pensions to the elderly represent the bulk of expenditure and contributions will be paid by those of working-age. As shown above, while the number of children and working-age persons is projected to decrease over time, the elderly population is expected to increase significantly. These projections show a smaller projected population than presented in the 10th Actuarial Review.

3.2 Social Security Fund Projections

Best Estimate Social Security Fund demographic and financial projections have been modeled using the best-estimate population results, best estimate SS-specific assumptions and the contribution and benefit provisions that were in place on January 1, 2015.

3.2.1 Assumptions

Key Social Security assumptions are shown below.

Table 3.2. Social Security *Best Estimate* Assumptions

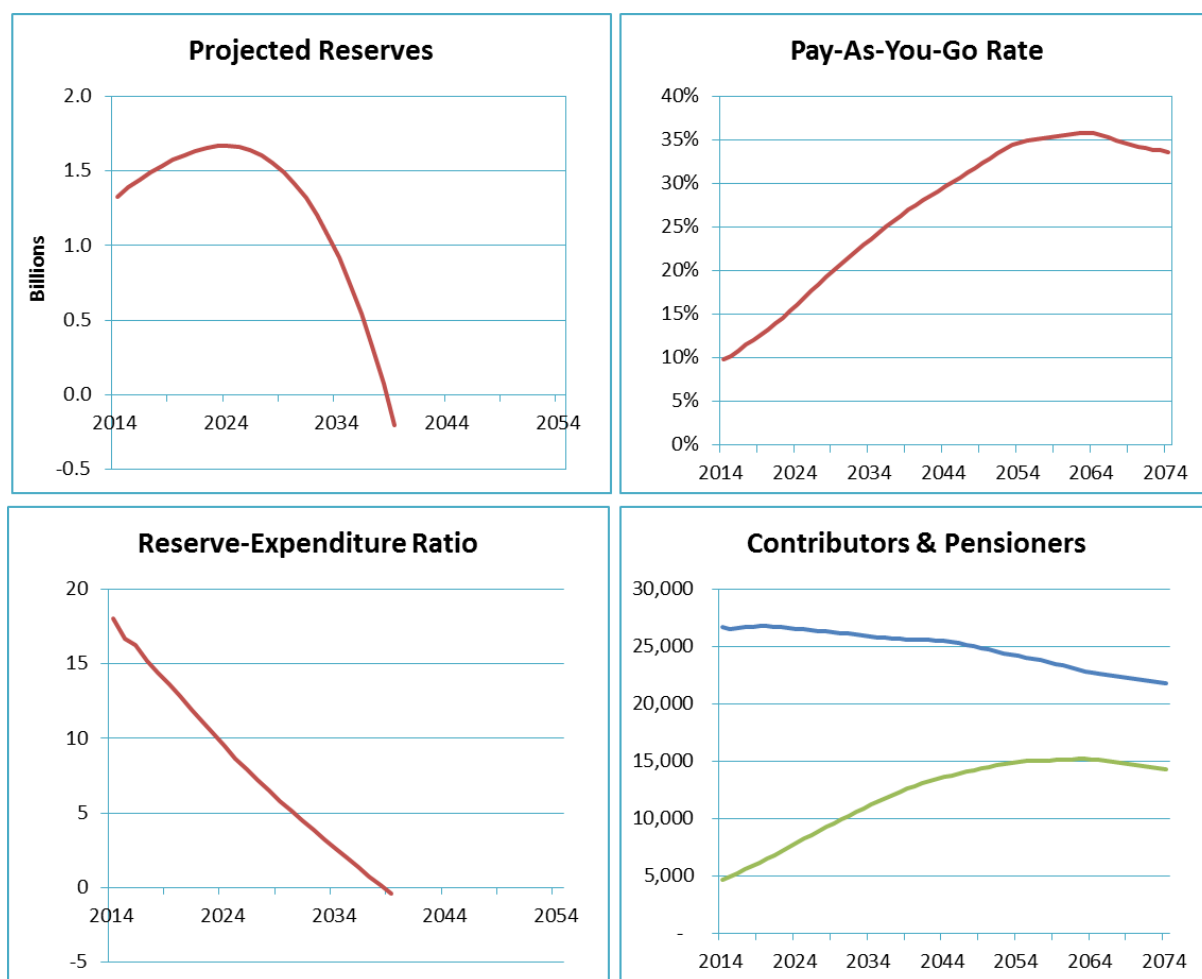
	11 th Review	10 th Review
Avg. Contribution Rate	11.0%	11.0%
Insurable Wage Ceiling	To \$7,000 per month in 2020 then increases by change in average wages	To \$7,000 per month in 2015 then increases by change in average wages
Short-term Benefits as a % of Insurable Wages	Increasing from 1.4% to 1.5% of IW over 10 years	Increasing from 1.25% to 1.5% of IW over 10 years
Employment Injury Benefits	Increasing from 0.08% to 0.12% of insurable wages over 10 years	Increasing from 0.08% to 0.12% of insurable wages over 10 years
Pension Increases	6% average in 2017 then annually by inflation starting 2018	10% average in 2013 then annually by inflation starting 2014
Long-term Yield on Reserves	3.5%	4.75%
Admin. Expenses as a % of Insurable Wages	1.85%	1.85%

It should be noted that the rates in the above table are not targets which the SS should aim to achieve but instead are the assumptions on which the projections are based.

By assuming that the wage ceiling and pensions in payment will be increased periodically in line with inflation, it is being assumed that the prevailing level of coverage and income security made possible by the ceiling and minimum pension will be generally maintained throughout the remainder of the projection period.

3.2.2 Projection Results

For this report, the projections for the three benefit branches are combined. Reserves as of December 2014 were \$1.329 billion. The charts in Figure 3.2 highlight key projection results of the *Best Estimate* scenario assuming that the contribution rate is not increased and that there are no changes to benefit rules other than those already legislated.

Figure 3.3. SSF Projections – Best Estimate Scenario

The key results of these projections are summarised as follows:

1. Expenditure will exceed contribution income in 2017.
2. The first cash flow deficit (total expenditure greater than total income) will occur in 2025.
3. Reserves are projected to be exhausted in 2039.
4. When reserves are exhausted, annual expenditure relative to total insurable wages (pay-as-you-go rate) will be 27.0%. The contribution rate will therefore have to be increased to this level to meet total expenditure.
5. The pay-as-you-go rate will increase to 33.7% in 2074.
6. The number of contributors for each pension in payment is expected to fall from 5.9 in 2014 to 1.5 in 2074.

Numerical details of the financial and demographic projections are provided in Tables 3.3 to 3.5.

Table 3.3. Projected Income & Expenditure - *Best Estimate* (millions of \$'s)

Year	Cash Inflows				Cash Outflows				Surplus/ (Deficit)	Reserves	
	Contribution Income	Investment Income	Other Income	Total	Benefits & Pensions	Admin. Expenses	Loss Provisions	Total		End of Year	R-E Ratio
2012	69.7	64.8	0.5	135.0	47.4	12.1	10.8	70.2	64.7	1,229	17.5
2013	74.7	65.7	0.7	141.1	52.5	14.9	0.3	67.6	73.4	1,299	19.2
2014	82.5	62.6	0.5	145.5	59.6	15.8	45.1	120.4	25.1	1,324	17.6
2015	89.9	53.1	0.6	143.6	69.1	14.3	0.0	83.4	60.2	1,384	16.6
2016	90.3	52.0	0.6	142.9	74.3	14.4	0.0	88.7	54.2	1,438	16.2
2017	94.0	50.3	0.6	144.9	83.4	15.0	0.0	98.3	46.6	1,485	15.1
2018	97.0	51.8	0.6	149.4	90.9	15.4	0.0	106.3	43.2	1,528	14.4
2019	100.0	53.2	0.6	153.9	99.3	15.9	0.0	115.2	38.7	1,567	13.6
2020	104.3	54.5	0.7	159.5	108.9	16.6	0.0	125.5	34.0	1,601	12.8
2024	120.0	57.1	0.8	177.9	157.2	19.1	0.0	176.3	1.6	1,662	9.4
2034	164.2	34.0	1.1	199.3	327.1	26.1	0.0	353.2	(154.0)	909	2.6
2044	222.0	(63.9)	1.4	159.6	563.4	35.3	0.0	598.7	(439.1)	(2,078)	(3.5)
2054	291.2	(290.3)	1.9	2.9	873.3	46.3	0.0	919.7	(916.8)	(8,900)	(9.7)
2064	391.5	(714.9)	2.5	(320.8)	1,210.0	62.3	0.0	1,272.2	(1,593.1)	(21,585)	(17.0)
2074	530.8	(1,407.6)	3.5	(873.3)	1,539.5	84.5	0.0	1,624.0	(2,497.3)	(42,173)	(26.0)

Negative reserves indicate the indebtedness of the Fund and negative investment income is the current cost of servicing that debt.

Table 3.4. Projected Benefit Expenditure - *Best Estimate* (millions of \$'s)

Year	Pensions, Grants & Benefits						Benefits as a % of:	
	Age	Invalidity	Survivors	Assistance	Short-term	Emp. Injury	Insurable Wages	GDP
2012	30.5	2.6	2.8	1.6	7.9	1.1	7.5%	2.5%
2013	34.2	3.0	2.9	1.5	8.5	1.4	7.7%	2.7%
2014	39.3	3.1	3.0	1.5	10.4	1.6	7.9%	3.1%
2015	48.7	3.2	3.3	1.5	11.4	1.7	8.5%	3.5%
2016	53.3	3.4	3.5	1.4	11.6	1.9	9.0%	3.6%
2017	60.6	3.9	4.0	1.5	12.1	2.2	9.8%	3.9%
2018	66.8	4.2	4.3	1.4	12.6	2.5	10.3%	4.0%
2019	74.0	4.5	4.7	1.4	13.1	2.8	10.9%	4.2%
2020	82.1	4.8	5.0	1.4	13.8	3.0	11.5%	4.4%
2024	124.0	6.1	6.7	1.4	16.3	4.3	14.4%	5.4%
2034	275.7	9.8	13.3	1.4	22.4	7.1	21.9%	7.8%
2044	486.8	15.3	22.7	1.6	30.3	11.0	27.9%	9.5%
2054	767.9	20.2	34.5	1.9	39.7	15.0	33.0%	10.4%
2064	1,067.7	25.3	49.3	2.2	53.4	19.8	34.0%	10.2%
2074	1,346.6	35.5	65.9	2.7	72.4	19.8	31.9%	9.2%

Table 3.5. Projected Contributors & Pensioners at Year-end - Best Estimate

Year	# of Contributors	# of Pensioners					Total # of Pensioners	Ratio of Contributors to Pensioners
		Age	Invalidity	Survivors	Assistance	Death & Disablement		
2012	24,503	2,431	308	933	535	79	4,286	5.7
2013	27,387	2,622	323	975	516	80	4,516	6.1
2014	27,471	2,860	318	917	505	82	4,682	5.9
2015	26,534	3,088	341	977	489	86	4,981	5.3
2016	26,619	3,324	357	1,022	468	91	5,263	5.1
2017	26,691	3,569	376	1,056	449	97	5,548	4.8
2018	26,744	3,822	392	1,083	432	103	5,832	4.6
2019	26,777	4,106	409	1,109	417	108	6,150	4.4
2020	26,777	4,413	422	1,133	403	113	6,485	4.1
2024	26,551	5,718	474	1,199	358	133	7,882	3.4
2034	25,889	8,736	555	1,445	296	179	11,212	2.3
2044	25,480	10,823	627	1,668	271	229	13,619	1.9
2054	24,171	12,083	607	1,753	256	251	14,950	1.6
2064	22,739	12,356	554	1,761	242	257	15,171	1.5
2074	21,841	11,570	549	1,696	230	277	14,322	1.5

3.2.3 General Average Premium

For social security systems that are partially funded and designed to be perpetual, costs are usually presented in terms of the pay-as-you-go-rates, which represent annual expenditure as a percentage of insurable wages. For private pension plans, however, where full funding is the financing objective, there are other measures of the system's cost that may be useful for policy makers to be aware of.

The general average premium is the average level contribution rate required over the next 60 years to fully cover total expenditure during that period. This rate may be looked at as the average long-term cost of the complete Social Security benefits package. For the *Best Estimate* projections, the general average premium is 26.6%.

3.2.4 Actuarial Balance

Another measure of the financial sustainability of a social security system is called “actuarial balance.” For a given period, the actuarial balance can be defined as the difference between:

- a) the sum of the beginning reserves and the present value of future contributions (money available to meet expenditure), and
- b) the present value of future expenditure,

divided by the present value of future insurable wages. This formula produces a rate that indicates the adequacy or insufficiency of the present contribution rate for a given period. For the Social Security Fund, the deficiency expressed in dollars and as a percentage of GDP is shown in Table 3.6.

Table 3.6. Actuarial Balance 2012 – 2071 (\$'s are in millions)

	2014 Year-end Reserves	1,324
Plus	PV of Future Contributions	4,708
Minus	PV of Future Expenditure	11,377
Equal	PV of Surplus/(Shortfall)	(5,345)
	Actuarial Balance (% of Insurable Wages)	(12.5%)
	Actuarial Balance (% of GDP)	270%

Consistent with previous discussions, the negative actuarial balance indicates that together with reserves, the current contribution rate is insufficient to meet future expenditure for the next 60 years. The shortfall of 12.5% indicates that the average contribution rate would have to be increased to 23.5% for the entire period in order for reserves to last up to 2074.

3.3 Comparison With Results Of The 10th Actuarial Review

The following table shows a comparison between key projection results from the 10th Actuarial Review and this Review.

Table 3.6. Summary Results of 11th Review Compared With 10th Review

	11 th Actuarial Review	10 th Actuarial Review
Expenditure First Exceeds Total Income	2025	2027
Reserves Depleted	2039	2041
Pay-as-you-go rate in 2068	34.7%	31.9%
General Average Premium	26.6%	24.5%

As shown above the results of this 11th Review suggest a slightly less favourable outlook for the cost of benefits in the long-term. This is due mainly to the lower assumed investment rate of return.

3.4 Sensitivity Analysis

Given the extensive set of assumptions required for projecting SSF finances and the length of the projection period, future experience will certainly differ from that projected under best estimate assumptions. To illustrate a reasonable range for the Fund's outlook, projections using two different sets of population, economic and Social Security assumptions are presented in the following chapter. However, certain SS factors such as compliance, yield on reserves and level of administrative costs will also impact the Fund's outlook. The change in long-term costs for differences in these factors is shown in the following table.

Table 3.8. Sensitivity Tests – Social Security Factors

Assumption	Differs From Best Estimate	Pay-as-you-Go Rate in 2044	General Average Premium	Reserves Depleted
Best Estimate		29.7%	26.6%	2039
Contribution Collections	+3.0%	28.9%	25.9%	2039
	-3.0%	30.5%	27.3%	2038
Long-term Yield on Reserves (3.5%)	+1.0%	29.7%	25.3%	2041
	-1.0%	29.7%	27.9%	2037

As shown above, the long-term costs of SS benefits could be reduced/increased by a few basis points if collections are greater/lower than assumed and yields on reserves are greater/lower than assumed. However, the overall effect is minimal.

Having already experienced a debt exchange and significant investment losses on public sector securities, a second round of such losses remains a concern given the high exposure to public sector institutions. A scenario where a full loss provision is made for 20% of the portfolio suggests that Fund depletion would occur in 2036 instead of 2039.

Chapter 4 Alternative Scenarios

Best Estimate projections up to 2074 presented in the previous chapter provide estimates of future Social Security Fund demographics and finances under best-estimate assumptions. Given the uncertainty in forecasting such a long period, two alternative scenarios that highlight the sensitivity of the results to differences in assumptions regarding future outlook have been performed. These alternative projection sets encompass assumptions that are generally more optimistic and more pessimistic than those of the *Best Estimate* projections. However, since long-term sustainability will likely be more sensitive to future population growth and economic development than SS-specific factors such as compliance rates and operating costs, the basis for the alternative scenarios also focus on differences in population and economic outlooks.

The *Optimistic* scenario represents a larger economy with higher wages, lower pensions, better contribution compliance and higher investment returns while the *Pessimistic* scenario represents a smaller population with lower wages and larger pensions, lower contribution compliance and lower investment returns.

Following is a summary of the main assumptions for the three projection scenarios. The values for all other assumptions are similar across scenarios.

Table 4.1. Principal Demographic, Economic & National Insurance Assumptions

	<i>Optimistic</i>	<i>Best Estimate</i>	<i>Pessimistic</i>
Ultimate Total Fertility Rate	1.7	1.65	1.5
Mortality Improvements [^]	Very Slow	Slow	Medium
Net (In) Migration Per Annum	50% of Best Estimate (<i>lower out migration</i>)	-250 between 2011 and 2015, decreasing to -100 in 2025, then 50 in 2045	150% of Best Estimate (<i>higher out migration</i>)
Real GDP Growth	½% higher in each year	2.5% decreasing to 1.5% in 2021, 1.5% up to 2035, 0.5% thereafter	½% lower in each year
Real Increase In Wages (p.a.)	1.0%	0.8%	0.6%
Inflation	2.0%	2.25%	2.5%
Collection Of Contributions	+2%	-	-2%
Administrative Cost in 20 years as % of Ins. Wages	1.6%	2.0%	2.2%
Long-term Yield on Reserves	4.0%	3.5%	3.0%

[^] UN mortality improvement rates

The main population and Social Security demographic and financial results of the three projection sets are presented in Figure 4.1 and Table 4.2. As expected, the outlook for Social Security finances are closely linked to the size and age distribution of the general population and Social Security performance indicators such as contribution collection rates and yield on investments.

Figure 4.1. Projection Results – All Scenarios

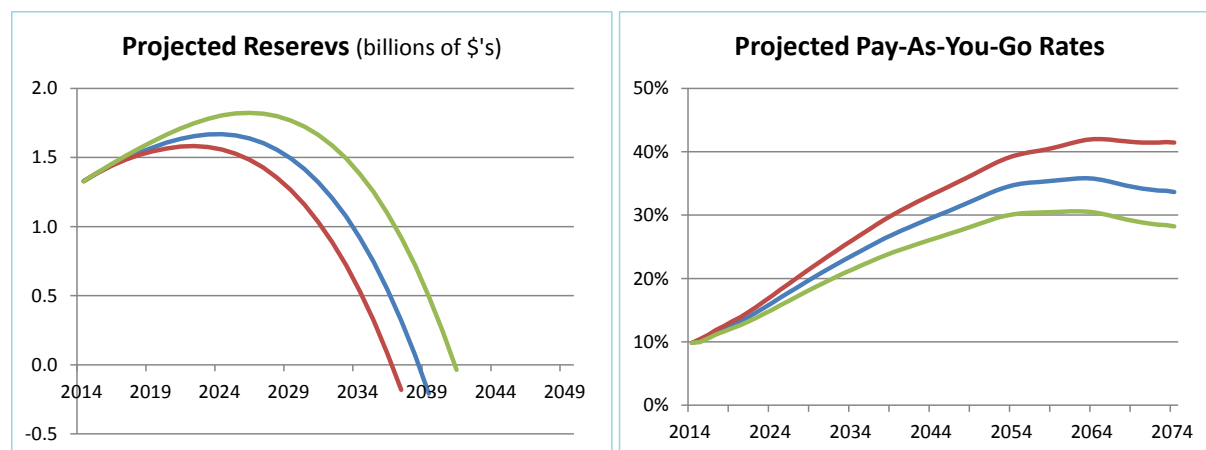


Table 4.2. Summary Results – All Scenarios

	Optimistic	Best Estimate	Pessimistic
Expenditure First Exceeds Contribution Income	2017	2017	2016
Expenditure First Exceeds Total Income	2027	2025	2023
Reserves Depleted	2041	2039	2037
General Average Premium	23.2%	26.6%	30.6%
Pay-as-you-go rate in 2044	26.2%	29.7%	33.3%
Pay-as-you-go rate in 2074	28.2%	33.7%	41.5%
# of Contributors per pensioner – 2074	1.7	1.5	1.3

Chapter 5 Policy Reforms

The St. Kitts-Nevis Social Security Fund is the second largest in the OECS behind St. Lucia. At over \$1.3 billion and 18 times annual expenditure, the Fund is financially strong. However, there are several risks which, if not addressed, could significantly affect the long-term sustainability of the Fund. These risks include a generous pension promise, poorly diversified investments and high administration costs.

This chapter contains discussions and recommendations on design and policy features with emphasis on ensuring benefit adequacy and long-term sustainability. The following table summarises recommended action steps to overcome the current challenges that have been identified in this report.

Table 5.1. SKNSSB Policy Challenges And Options For Reform

	Current Challenges	Recommended Action
Coverage	<ul style="list-style-type: none"> Most self-employed persons do not contribute 	<ul style="list-style-type: none"> More flexible options for self-employed contributions
Benefit Adequacy & Equity	<ul style="list-style-type: none"> Ad hoc wage ceiling & pension increases Pension adjustments not granted to those who were awarded maximum pension Only one pension for those who may meet requirements for Age & Survivors pensions 	<ul style="list-style-type: none"> Automatic ceiling & pension adjustments Adjust all pensions in payment regardless of their initial pension percentage Allow payment of Age & Survivors pensions together
Financial Sustainability	<ul style="list-style-type: none"> Compliance Generous Age pension Investments poorly diversified 	<ul style="list-style-type: none"> Enhance links with government departments and agencies Better enforcement and/or increased penalties for non-compliance Reform Age pension rules Revise investment mix
Administrative Efficiency	<ul style="list-style-type: none"> Operating costs are very high 	<ul style="list-style-type: none"> Reduce staff, make greater use of available technology or upgrade where necessary
Good Governance	<ul style="list-style-type: none"> Documented good governance guidelines not in place 	<ul style="list-style-type: none"> Prepare comprehensive good governance policies & guidelines for the SSB

5.1. Coverage

5.1.1 Self-employed Persons

It is estimated that fewer than 40% of self-employed persons make contributions. Such a low participation rate is not uncommon in the Caribbean. Many individuals do not register and/or contribute simply because they either do not understand or appreciate the many benefits available to them, or they think that they can use their funds more effectively to provide for themselves. There are some, however, who delay and eventually do not pay because of the paperwork involved and the limited payment options available. While targeted campaigns on educating self-employed persons will likely help, new ways for self-employed persons to pay contributions should be put in place.

One such approach that may appeal to many with regular income and bank accounts, especially professionals, is automatic bank transfers of a set contribution amount without the need to complete a contribution form.

Another approach that may appeal to others whose incomes are irregular and typically in the form of cash, is the ability to make lump sum payments at any time - simply “put money on their account” as their means allow, without the need to complete a form. This latter approach will require revisions to current procedures as the contribution payable now is based on the amount earned and the number of weeks worked. An alternative approach whereby the amount paid during a given year is converted to average wages and number of contribution weeks can be developed. Such an approach can also serve to prevent self-employed persons “back-paying” several years of contributions simply to qualify for an Age pension. See Appendix F for details of the proposed alternative approach.

Enhanced and sustained public education activities highlighting the benefits of self-employed persons and informal sector workers contributing to SS should be continued.

5.2. Benefit Adequacy

5.2.1 Adjustments To Wage Ceiling, Pensions and Grants

The SS Act & Regulations are silent regarding wage ceiling and pension adjustments. To date, such adjustments have been made on an ad hoc basis, usually after an actuarial review. Regular adjustments to the ceiling and pensions in payment ensure that SS remains relevant to both higher paid workers and pensioners. Although the last ceiling adjustment occurred in 1998, pensions and grants have been increased frequently, the most recent change taking effect in July 2014. Ideally, adjustments to pensions and grants should occur at set annual or biennial intervals with the amount of the adjustment based price and wage inflation. Under the current

approach, the decision on when and by how much to adjust ultimately hinges on the government.

As presented in Section 2.2, approximately 95% of current contributors earn less than the \$6,500 per month wage ceiling. The ceiling is therefore considered to still be at an adequate level and no increase is recommended at this time.

Given that pensions were last increased in mid-2014, and inflation since then has been quite low, no schedule of pension increases has been included in this draft report. It is, however, recommended that regulations be amended to provide for an automatic approach to adjustments that sets out the timing and procedure for increasing all fixed-dollar rates and pensions. While such automatic adjustments occur in all OECD countries, wage ceilings and pensions in payment are now adjusted automatically in social security schemes in Barbados, The Bahamas and The British Virgin Islands.

The following box contains a discussion of how automatic pension adjustments could work.

Box 5.1. Automatic Pension Increases

1. The annual adjustment for pensions in payment, which would take place in the same month each year, should be based on the average of the most recent three years price inflation (as determined from the Consumer Price Index). The use of an average will produce a smoother pattern of adjustments and avoid both a large increase following a year of high inflation and/or no increase after a year of negative inflation.
2. There should be a limit on any single pension adjustment (such as 4%) that can be made without written certification from an actuary that the Fund can support the prescribed increase.
3. The same rate for which pensions are increased will be applied to minimum pension rates, Maternity and Funeral grants.

5.2.2 Pension Increases To Those Awarded Maximum Pension

When pensions were increased in mid-2014, no adjustment was granted to pensioners who were initially awarded the maximum pension rate of 60% of their insurable earnings. (The maximum is payable if more than 1750 contributions have been made). This position was adopted in line with one interpretation of the exception to Regulation 31 (1) of Social Security (Benefit) Regulations which reads:

“Except that in no case shall the age pension exceed the lesser of sixty percent of the insured person’s average annual wages or the prevailing annual ceiling, nor be less than the prevailing minimum pension.”

While Benefit regulations are silent with respect to periodic pension increases, adjustments to social security pensions are granted to offset the effect that inflation has had on the purchasing power of the pension since it was awarded. The fact that the pension was capped at the time of award is no longer a factor in limiting future increases. It is therefore recommended that the Regulation 31 be amended so that the capping of one's pension relative to average insurable wages is only relevant at the time of award.

5.2.3 Payment of Age or Invalidity Pension With Survivors Pension

In line with recommendations of the previous actuarial review Age pensioners can now receive a Survivors pension if all qualifying conditions are met. Previously, when a spouse died, and the survivor was in receipt of, or later qualified for, an Age pension, he/she would only receive the larger of the Age pension or the Survivors' pension.

To date, the necessary regulations to support the payment of Age/Invalidity pensions with Survivors pension have not been enacted. It is therefore recommended that Benefit regulations be amended to provide for this benefit enhancement at the earliest opportunity.

5.3. Financial Sustainability

Enhancing financial sustainability can be achieved through avenues that either increase revenue from contributions and investments, or reduce the growth of benefit expenditure and administrative costs. For expenditure, while the Board can directly influence administrative costs, it has little control over benefit payment amounts which are driven primarily by each benefit's rules. While benefit rules can be revised, the primary control that can be placed on benefit expenditure is ensuring that the correct benefit is paid to the correct person at the correct amount for the correct period.

A discussion of administrative costs is presented in section 5.4. The remainder of this section deals with ways of increasing revenue to enhance financial sustainability.

5.3.1 Compliance

Failure to pay Social Security contributions on time, for all employees, and for their full wages, is an offence that is punishable by law. The Board should fully enforce all existing avenues available to it and identify new means of ensuring that all who are required to contribute do so on a timely basis. One new approach that could enhance compliance is the establishment of

links with all Government departments that issue licenses, permits and approvals in St. Kitts-Nevis. By either issuing letters of good standing or allowing Government departments to access the current contribution status of employers, Government permits and licenses should only be issued if the employer is up-to-date with SS contributions. The same should apply for Government contracts.

While special considerations may be given to the repayment of arrears given the current economic climate, there should be a zero-tolerance approach to non-compliance for current contributions.

5.3.2 Pension Reform

Pension reform has been discussed across St. Kitts-Nevis before but no changes have yet been made. Several other countries in the Caribbean have made far-reaching reforms in recent years. The primary goal of these reforms is typically reducing long-term cost and thus enhancing long-term sustainability. As presented in Chapter 3, long-term costs as defined using the pay-as-you-go rate are expected to exceed 30% of insurable wages. The following sections present a discussion of the reforms that should be considered to make pensions both more equitable and more sustainable.

Age pensions currently account for 66% of total Social Security benefit expenditure. As a result any meaningful change to future pension costs must include changes to Age pension provisions. The provisions that could be revised to effect changes in long-term costs can be clearly illustrated by breaking down the pay-as-you-go rate formula into components.

Figure 5.1. Components of The Age Pension Pay-As-You-Go Rate

$$\begin{aligned}
 \text{Expenditure as a \% of} &= \frac{\text{Total Pension Expenditure}}{\text{Total Insurable Wages}} \\
 \text{Insurable Wages} & \\
 \text{(pay-as-you-go rate)} & \\
 &= \frac{\# \text{ Pensioners} \times \text{Avg. Pension}}{\# \text{ Contributors} \times \text{Avg. Ins. Wage}} \\
 &= \frac{\# \text{ Pensioners}}{\# \text{ Contributors}} \times \frac{\text{Avg. Pension}}{\text{Avg. Ins. Wage}} \\
 &\quad \text{Demographic Ratio} \quad \text{Replacement Ratio}
 \end{aligned}$$

To reduce ultimate pay-as-you-go rates, one or both of the two ratios (demographic and replacement) would need to be lower than under the status quo scenario. The following table summarises the means by which each ratio could be reduced over time.

Table 5.2. Options For Reducing Long-term Pension Costs

	Demographic Ratio	Financial Ratio
Economic growth	✓	✓
Award pensions later	✓	
Award pension only if retired	✓	
Make it more difficult to qualify	✓	
Reduce average new pension amount (slower pension accruals, longer period for average wages, career average formula)		✓
No pension increases		✓

Each of these options, except economic growth, is discussed below.

5.3.2.1 Award Age Pensions Later

As recommend in previous actuarial reviews the age at which full Age pensions is first payable should be gradually increased to at least 65. This change is both consistent with increases in life expectancy since Social Security was established almost forty years ago and with the need to reduce long-term benefit costs.

The increase from age 62 to 65 could occur gradually at intervals of either one year every two years, or one year every three years as illustrated below.

Table 5.3. Recommended Schedules For Pensionable Age Increases

Pensionable Age	Option 1	Option 2
63	2017 to 2018	2017 to 2019
64	2019 to 2020	2020 to 2022
65	2021 onwards	2023 onwards

Other options are increases in pensionable age of 6 months each year or even 4 months each year. While slightly more complicated to explain, the negative effect on initial pension amounts will be smaller for those turning 60 in each subsequent year.

It is further recommended that age 62 be kept as the age at which reduced Age pensions are first payable with options to claim at any age between 62 and normal pension age. The reduction that should be applied to early pensions is $\frac{1}{2}\%$ for each month between the pension start date and pensionable age. For example, if the pension is set to start at age 62½ when Pensionable Age is 64, the amount payable would be reduced by 9% given that the claimant is 18 months younger than pensionable age.

Once pensionable age starts increasing to 65, the award of an early Age pension should be contingent on the person being retired, or at least substantially retired. Substantially retired could be defined as having earnings of less than 50% of the wage ceiling or your highest wage while employed.

It should be noted that increasing the pensionable age is the single most effective change for reducing long term costs. Using the formula presented in Figure 5.1, this change has the dual effect of reducing the number of pensioners and increasing the number of contributors at the same time.

When pensionable age is being increased the age at award for Age grants should be set to the same age.

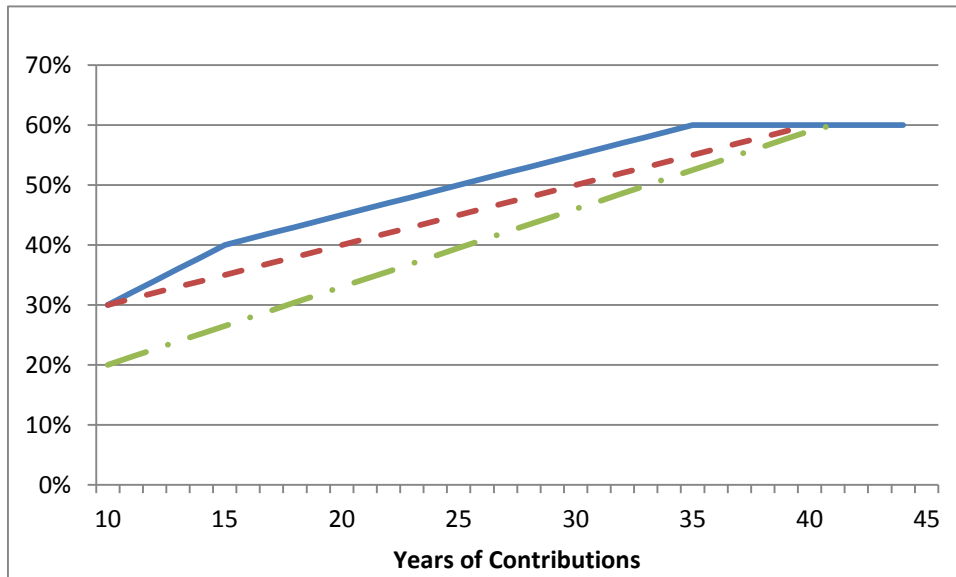
5.3.2.2 Benefit Accrual Rates

For an insured person who works and contributes to Social Security for 30 years, the Age pension is 55% of average wages in the three years with highest insurable wages. (60% after 35 years of contributions) For another who works only 10 years, the pension would be 30% of best three years' average wages. This indicates that pension replacement rates are highly skewed to those with shorter service. This front-loading of benefits was appropriate when the Scheme was first established to ensure that early retirees received adequate pensions. However, after almost 40 years, a more gradual accrual of benefits should be considered as a way of decreasing long-term costs, as well as providing pensions that are more directly related to the number of contributions made. Two such options are illustrated below. These accruals rates are:

- a) 30% after 10 years + 1% for each year thereafter
- b) 20% after 10 years + 1.3% for each year thereafter.

Both reach 60% after approximately 40 years of contributions.

The following chart illustrates the pattern of benefit accrual rates under the current schedule (solid line) and the two schedules (dashed lines) described above.

Figure 5.2. Current and Recommended Pattern of Benefit Accrual Rates

The following table shows how the initial pension replacement rate will be different for several insured persons with different contribution histories. The dollar amounts shown below each percentage are based on person having an average insurable salary of \$3,000 per month.

Table 5.4. Age Pension Replacement Rates & Sample Initial Pension Amounts

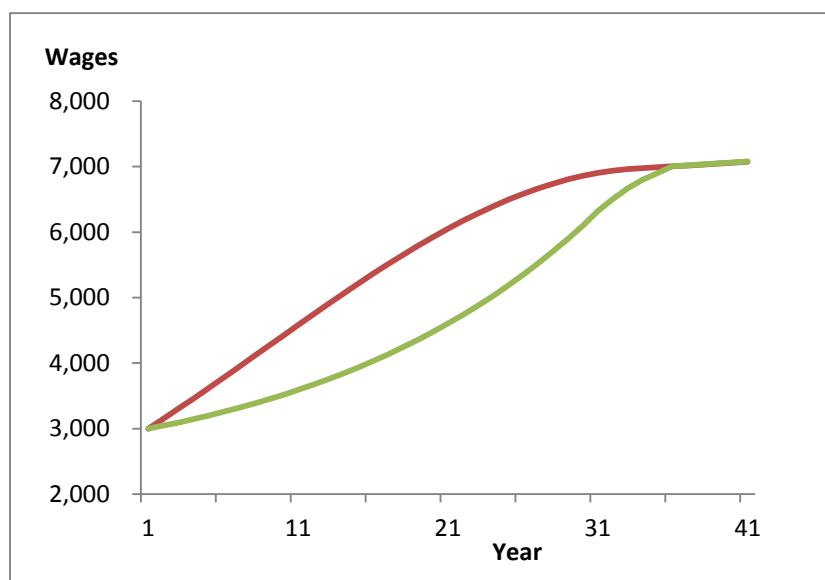
Accrual Rate Schedule	# Years of Contributions				
	10	20	30	35	40
30% after 10 years + 2% for each of next 5 years + 1% per year thereafter	30% (\$900)	45% (\$1,350)	55% (\$1,650)	60% (\$1,800)	60% (\$1,800)
30% after 10 years + 1% per year thereafter	30% (\$900)	40% (\$1,200)	50% (\$1,500)	55% (\$1,650)	60% (\$1,800)
20% after 10 years + 1.3% per year thereafter	20% (\$600)	33% (\$1,000)	46% (\$1,380)	53% (\$1,590)	59% (\$1,770)

Any move from the existing to a new accrual rate schedule can be transitioned over a period of 5 to 10 years.

5.3.2.3 Wages Used For Calculating Pensions

Although contributions are paid on earnings over one's career, only wages in the best three years in the last fifteen years are used to calculate Age pensions. Therefore, two persons with different career earnings patterns who happen to have three years of similar high earnings, and the same number of contributions, will receive the same pension. However, they would have received different short-term benefits during their working years. This is illustrated in the following chart. For all but the last three years their insurable wages were different but under present rules, they will both receive the same pension amount.

Figure 5.3. Earnings Pattern Of Two Insureds With Same Pension



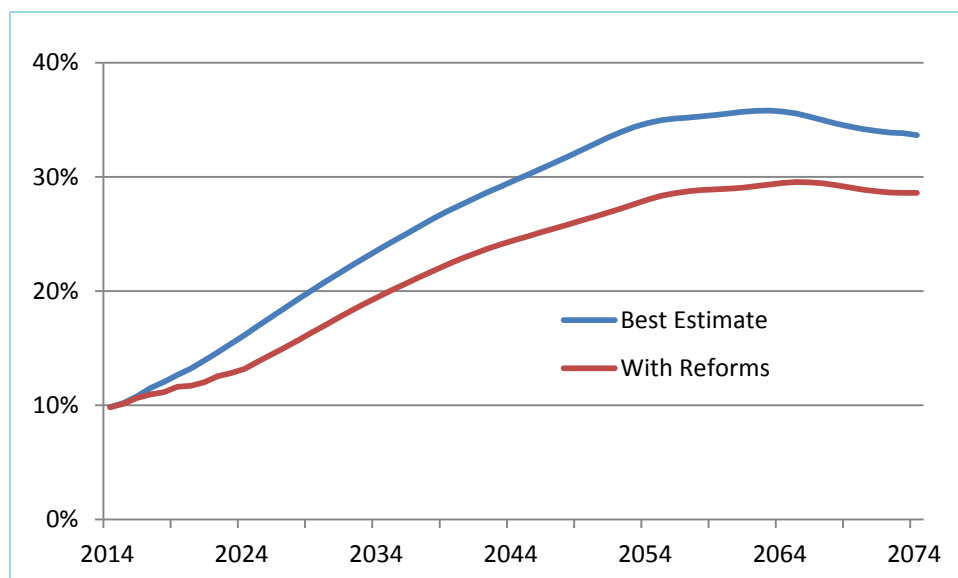
As only three years of wages are used, the amount of the pension could bear little relationship to actual contributions. Therefore, using only the three highest years' wages produces inequities among generations (different contribution history but same pension) and between generations (passing on part of the cost of one's pension to future contributors.) Reference to only three years wages also produces inflated benefits for those who get a large salary increase just before retirement.

While a pension formula that uses indexed insurable wages over one's entire career would produce the most equitable pensions, a simple adjustment to the current approach that increases the number of years over which insurable wages are averaged to at least five, but perhaps as long as seven, is recommended.

5.3.2.4 Reform Projections

The financial effect of the pension reforms described above (increasing the normal pension age, change accrual rate schedule and longer averaging period for insurable wages) has been modelled. Projected pay-as-you-go rates under Best Estimate assumptions, for both the current and reformed Age pension rules, are shown below.

Figure 5.4. Projected PAYG Rates Under Current Rules & Recommended Reforms



With the three reforms, the general average reduces from 26.6% to 22.1% and the projected year of reserve depletion changes from 2039 to 2044.

5.3.3 Investments

While investment returns have remained relatively strong the Fund made loss provisions for approximately 4% of its investments and took a significant reduction on yields on another 4%, (Section 1.5). The investment portfolio remains poorly diversified with 97% invested locally, almost 67% of assets held in short-term deposits, most of which are with one commercial bank.

Over the last few years, there has also been a significant increase in real estate holdings. The Board is encouraged to tread cautiously into the field of non-traditional investments and avoid initiatives where the risk-reward tradeoff suggests that it may not be prudent to participate. This may require rejecting investment opportunities initiated by the Government.

Having such a large Fund in a relatively small economy poses many challenges. In the last few years investment yields have declined worldwide and the credit worthiness of Caribbean governments, including the St. Kitts-Nevis Government, has deteriorated. As a result, there are

fewer attractive investment opportunities for social security funds. To ensure that the asset mix remains consistent with current and future needs of the Fund it is further recommended that the Investment Policy Statement be reviewed and target asset allocations amended to suit the prevailing investment climate and cash flow needs of the Fund. Specific recommendations for investment diversification include:

- At least 20% overseas;
- No more than 20% in certificates of deposit;
- No more than 50% in SKN public sector securities; and
- No more than 15% in domestic real estate.

A sound governance framework is paramount for the effective and proper investment of social security funds. The SS Investment Policy explicitly covers the area of governance and clearly maps out the operational and oversight responsibilities and duties of all fiduciaries including the Board, Investment Committee, internal Investment Manager and external investment managers. It is important, therefore, that all fiduciaries execute their duties with the highest degree of integrity, care, skill and diligence. All investment opportunities, both private and public, should be made with the same high level of scrutiny and due diligence.

As the SS has experienced for itself, the investment of assets is not without risk. One of the increasing threats to social security funds in the region is the incidence of excessive political interference and influence over where funds are invested. Members of the Board and Investment Committee should guard themselves against unwarranted political interference and carry out their duties with reference to the Social Security Act and Regulations and the approved Investment Policy.

5.3.4 Contribution Rate Increases

As shown in previous chapters, while contribution income alone continues to exceed total expenditure, the gap is gradually narrowing. In 2017 costs are expended to surpass the current 11% contribution rate as pay-as-you-go rates gradually increase. With over \$1.3 billion in reserves, investment income will be sufficient for many years.

Until reserves are exhausted, there is no right or wrong time to increase the contribution rate. However, waiting until reserves are exhausted to increase contribution rates will result in a significant adjustment being required.

No contribution rate increase is recommended at this time. However, to ensure that future rate increases are gradual and predictable, and are consistent with actuarial projections, it is recommended that a policy for future rate increases be established. Such a policy can either set out when a rate increase should occur and by how much, or alternatively, it could set a funding objective and depend on actuarial advice to devise a rate adjustment schedule that is expected to achieve the stated objective. Below are examples of both funding objectives and contribution increase strategies.

Table 5.5. Sample Funding Objectives And Rate Increase Strategies

Funding Objectives	Contribution Rate Adjustment Strategies
1. Pay-as-you-go rate no more than 2% above the contribution rate	1. What the actuary certifies as being necessary to achieve the adopted funding strategy
2. No reduction in reserves through 2030	2. ½% increases each year for the next 10 years
3. Projected reserves of at least 5 times expenditure twenty years from the date of each actuarial review	3. Contribution rate equal to expected pay-as-you-go rate in the following year

Dominica recently implemented a policy whereby the contribution rate is being increased by ¼% each year for 20 years.

5.4. Administrative Efficiency

Administrative efficiency relates to both how well tasks are done and how much it costs to perform them. 18.8% of regular contribution income or 2.1% of insurable wages was consumed by operating costs during the period 2012 to 2014. When compared to other social security schemes in the OECS, this is very high. The following table provides a summary of publicly available administrative costs in several OECS countries.

Table 5.6. Unemployment Benefits in The Bahamas & Barbados

Country (financial years)	Administrative Costs As a % of:		
	Contribution Income	Cont. Income + Benefit Expenditure	Insurable Earnings
St. Kitts-Nevis (2013 & 2014)	18.8%	11.1%	2.0%
Dominica (2012 & 2013)	11.2%	5.5%	1.3%
Grenada (2011 & 2012)	12.3%	7.0%	1.1%
St. Lucia (2008 & 2009)	10.7%	7.1%	1.1%

The twin-island make-up of St. Christopher & Nevis provides some justification for higher costs than a single-island state but with easy access to technology, having 2.1% of the Federation's

wages spent on SS operating costs in today's environment is very high. Staff related costs account for around 60% of operating costs.

There is no single benchmark or target that is ideal for all countries and all social security systems. In Trinidad & Barbados, less than 5% of contribution income is spent on administrative expenses. Given the level of technology now available for pension and benefit administration, and the high level of the contribution rate and wage ceiling in St. Kitts-Nevis, operating costs of 10% to 12% of contribution income should be an achievable target over the next 10 years.

The Board is encouraged to conduct a comprehensive assessment of all major areas of administrative expenses. To reduce costs, tough decisions will be required. Small savings can also be achieved by reviewing all operational procedures and finding new ways of making all processes, some of which still require manual inputs, more efficient.

5.5. Other Matters

5.5.1 Unemployment Benefit

A discussion of unemployment benefit and its possible addition to the existing SS benefits package were included in previous actuarial reports and a comprehensive study was conducted in 2009. In the English-speaking Caribbean only Barbados and more recently The Bahamas, offer unemployment benefits.

Unemployment insurance programmes have both primary and secondary objectives as summarised below:

Primary Objectives

1. Provide cash payments during involuntary unemployment;
2. Maintain to a substantial degree the unemployed worker's standard of living;
3. Provide time to find employment consistent with their skills and experience; and
4. Help unemployed workers find jobs.

Secondary Objectives

1. Stabilise economy during recessions by enabling unemployed workers to maintain their personal income & consumption;
2. Promote better utilisation of labour by encouraging unemployed workers to find appropriate jobs and, where necessary, helping them to improve their job skills; and
3. Help employers maintain a skilled work force as skilled workers are not forced to seek other jobs, and thus are free to return when they are called back.

Following is a comparison of the key provisions of unemployment benefits in The Bahamas and Barbados:

Table 5.7. Unemployment Benefits in The Bahamas & Barbados

	Bahamas	Barbados
Who is covered	All employed persons (including pensionable civil servants)	All employed persons other than pensionable civil servants
Qualifying conditions	52+ paid contributions; 13 contributions in last 26 weeks and 7 contributions in last 13 weeks	52+ paid contributions; 20+ contributions paid or credited in 3 consecutive quarters before unemployment; 7+ contributions paid in the quarter but one before the quarter in which you became unemployed
Benefit %	50%	60%
Maximum Benefit Duration	13 weeks	26 weeks
Special Payment Provisions	Disqualified from first 6 weeks of payment if unemployment due to theft or fraud.	
Contribution Rate	1.0% (implicit in single rate for all benefits)	1.5% (explicit)
Allocation of Contributions	Comingled with Short-term benefits (Sickness & Maternity)	Separate fund for unemployment benefits only

Since 2008 the Barbados Unemployment Fund has experienced large deficits due to layoffs and reduced employment. While the Fund still has reserves, these reserves have been shored up by a reallocation of the ½% Severance Fund contributions that are paid only by employers.

As was the approach taken in both Barbados and The Bahamas, the introduction of an unemployment benefit in St. Kitts-Nevis can begin with modest benefits and minimum

contribution rate. A 1% contribution rate is considered adequate to finance a benefit of 50% of average insurable wages for a maximum of 13 weeks.

Given that the Employment Injury branch is so highly overfunded, and the 1% paid by employers is much more than is needed to provide for Employment Injury benefits, ½% can be allocated to the Short-term benefits branch. The remaining ½% could either be paid by employed persons as an additional contribution. Alternatively, no new contribution could be charged to workers at the outset, but instead depend on the excess reserves in the Short-term benefits branch to meet unemployment expenditure above ½% of insurable wages.

A more extensive discussion and analysis with projections is beyond the scope of this report.

5.5.2 National Health Insurance

National Health Insurance (NHI) is a system of health insurance that insures a national population against the costs of health care. It may be administered by the public sector, the private sector, or a combination of both, and how it is funded, varies from country to country. The introduction of NHI is often viewed as means of expanding access to healthcare for all residents, improving the quality of care provided in both the public and private sectors, and reducing the overall cost of care provided.

Health care for residents of the Federation is currently financed in a multifaceted approach:- government transfers, private health insurance, out of pocket payments and transfers from family and friends. Under NHI programs most of the care that is needed would be paid for from a pooled fund, typically adopting social insurance principles, and those who need to access care will be able to do so with little or no co-payment at the point of service. Premiums for NHI systems are typically wage based with a wage ceiling that is higher than the ceiling for social security pensions.

Around the Caribbean several governments have either implemented or are set to implement a formal NHI program.

- Belize: Starting as a pilot project in one district in 2009, NHI coverage now exists in two southern regions. This program is financed by general revenues.
- Turks & Caicos Islands: Comprehensive NHI benefits package implemented in 2009. The contribution rate was initially 5% but later increased to 6%.
- British Virgin Islands: Comprehensive NHI benefits package, including both local and overseas care, set to begin January 2016. Contributions will be 7.5% of insurable wages.
- The Bahamas: Phased approach to an ultimate comprehensive package of benefits will start with locally provided primary care coverage in late 2016.

A first step to understanding whether a system of NHI would result in expanded access, improved quality and lower overall cost of health care is the preparation of national health accounts. The World Health Organisation (WHO) website on health accounts suggests that countries *“cannot manage what they cannot measure”*. The WHO also indicates that health accounts *“deliver means to learn retrospectively from past expenditure, improving planning and allocation of resources and increasing systems accountability. This aims to help member states protect its people from catastrophic health bills, reduce inequities in health and make definitive strides towards universal health coverage.”*

It is recommended that the Government of St. Kitts-Nevis, at a minimum, begin the process of having national health accounts prepared as these will provide a better understanding of where funds used to pay for health care both originate and how they are spent. These accounts are considered a necessary precursor to better informed decision making on whether NHI is feasible, and if so, what form it should take.

A more extensive discussion and analysis of whether a system of NHI will be beneficial for St. Kitts-Nevis is beyond the scope of this report.

5.5.3 Branch Allocations & Transfer of Reserves

As of December 2014 both the Short-term and Employment Injury branches were significantly over funded. The overfunded positions are due to expenditure being substantially less than the percentage of contribution income allocated. Therefore, reallocations of contribution income and the transfer of reserves from both branches to the Long-term benefits branch may be considered.

Table 5.8. Benefit Branch Reserves, Contribution Allocation & Expenditure

Benefit Branch	Dec. 2014 Reserves	Reserve-Expenditure Ratio		Current Contribution Allocation	Projected Expenditure
		2014	Target		
Short-term	\$ 117.7	9.1	1.0	2.0%	1.7% - 1.9%
Employment Injury	\$ 189.9	86.7	2.0	1.0%	0.25% - 0.35%

The recommended changes to the allocation of contribution and transfer of reserves between branches are shown below. The recommended allocations are based on 2014 contribution rates which average slightly less than 10%.

Table 5.9. Recommended Changes to Contribution Allocation & Reserve Transfers

Benefit Branch	Contribution Income Allocation		Reserve Transfer
	Current	Recommended	
Short-term	2.0%	1.8%	\$100 million to LTB Branch
Employment Injury	1.0%	0.3%	\$185 million to LTB Branch
Long-term	9.0%	8.9%	\$52 million from STB & EIB Branches
All	11.0%	11.0%	

It should be noted that changes in the allocation of contribution and investment income, and transfer of reserves between branches, has no impact on the overall present or future funded position of the Social Security Fund. These adjustments are for internal accounting purposes only and are consistent with the manner in which the SSB has elected to finance and account for the various types of benefits.

Chapter 6 Good Governance

The report of the 10th Actuarial Review contained an extensive discussion of Good Governance Guidelines for social security institutions prepared by the International Social Security Association (ISSA). A recommendation was made for the Board to adopt the principles and guidelines included in ISSA's Good Governance Guidelines, prepare similar guidelines for Social Security, and initiate steps to ensure that good governance practices are commonplace in all aspects of the Social Security's administration and operations. To date, a document with such good governance guidelines has not been prepared.

It is again recommended that a Good Governance Guidelines manual that is localized for the SSB be prepared. This manual should include the following:

- a) **Powers and Duties of the Minister:** These are found in various sections of the Act and Regulations but a comprehensive list, with section references, should be prepared.
- b) **Functions and Duties of the Board:** These include strategy & management, financial reporting & internal controls, contracts, communication, remuneration, delegation of authority and corporate governance matters.
- c) **Terms of Reference for the Chairman:** In addition to providing coherent leadership of SS and leading Board meetings the Chairman is expected to ensure the orientation, development and performance evaluation of Board members and lead all relations with stakeholders and the general public. He/she is also expected to uphold high standards of integrity, set the agenda, style and tone of Board discussions, ensure effective implementation of Board decisions, promote high standards of corporate governance, ensure the continual improvement in quality and calibre of managers, establish a close relationship of trust with the Director and management team, provide support and advice while respecting executive responsibility, and ensure that Ministerial approval is obtained for all Board decisions that require such approval.
- d) **Board Member Orientation:** Board Members are expected to exercise due care and skill in the performance of their duties. They should possess the relevant knowledge, qualifications, experience and wherewithal to be effective. They are expected to ask questions and participate in discussions at meetings, and to contribute relevant insights and experience. This can only be achieved by Board Members who have the requisite information and up-to-date training.
- e) **Board Member Code of Conduct:** Board Members have an obligation to act in the best interests of SS with due regard for the interest of all insured persons and other stakeholders, and in accordance with the Act & Regulations, good governance guidelines, best practices and Social Security's policies and procedures. Board Members should exercise the highest level of integrity, honesty and diligence. Specific guidance for Board

members should include: preparation, attendance and conduct at meetings, knowledge of Social Security's business and personal conduct.

- f) **Conflict of Interest:** Conflicts of interests may arise where an individual's or Board Members' personal or family interests and/or loyalties conflict with those of SS. Such conflicts have the potential to inhibit free discussions, result in decisions or actions that are not in the interests of SS, and risk the impression that SS has acted improperly. The aim of the policy should be to protect both the SS and the individual(s) involved from any appearance of impropriety.
- g) **Terms of Reference for the Director:** The Director/CEO is accountable and reports to the Board and is responsible for daily operations of the SS. He/she is responsible for business strategy and management, investment and finance, risk management and controls, human resources, communication and other duties which derive from these responsibilities.
- h) **Confidential Information:** This policy should provide guidance for all SS employees, managers and Board Members to prevent inadvertent disclosure of confidential information. Some specific items to be covered include access limitations to confidential information, how documents (paper and electronic) containing confidential information should be maintained, what circumstances may require confidentiality agreements to be entered into, who may speak to the press and general public and what information may be shared, and regular reminders to staff re not to disclose confidential information to anyone, except in the necessary course of business. Given the extensive nature of SS information the policy may not cover all circumstances and exceptions may be justified from time to time.
- i) **Disclosure of Information:** Material information with respect to the Board should be disclosed to the public promptly and in a consistent manner. Such information includes annual reports inclusive of financial statements and statistical information on operational performance, and actuarial review reports. The policy should also provide for the sharing of information with government departments, international agencies and others.

Statement of Actuarial Opinion

It is our opinion that for this report of the 11th Actuarial Review of the Social Security Fund:

- the data on which the projections and analysis are based are sufficient and reliable;
- the assumptions used are, in the aggregate, reasonable and appropriate, and
- the methodology employed is appropriate and consistent with sound actuarial principles.

This report has been prepared in accordance with the Caribbean Actuarial Association Actuarial Practice Standard #3 for Social Security Programs.

Morneau Shepell Ltd.



Derek Osborne
Partner



Marcia Tam-Marks
Principal

March 30th, 2016

References

2011 Census – St. Kitts & Nevis Statistics Department

2015 IMF Article IV Consultation Report, IMF

10th Actuarial Review of the Social Security Fund

St. Christopher and Nevis Social Security Act

St. Christopher and Nevis Social Security Fund Financial Statements

St. Christopher and Nevis Social Security Board Investment Policy Statement

Appendix A Summary of Contribution & Benefit Provisions

Following is a general description of the coverage, contributions and benefits provisions of the St. Kitts-Nevis Social Security Board (SKNSSB) as at December 31st, 2014.

A.1 Contingencies Covered & Benefits Provided

St. Christopher & Nevis Social Security provides for the following benefits:

- a. **Long-term benefits:** Age, Invalidity and Survivors' benefits.
- b. **Short-term benefits:** Sickness benefit, Maternity allowance & grant, Funeral grant.
- c. **Employment Injury benefits:** Injury benefit, Disablement benefit, Medical Expenses, Death benefit and Burial grant.

A.1.1 Insured Persons

Employed, self-employed and voluntary insured persons aged 16-61 are covered for the above contingencies as follows:

- Employed persons: All contingencies.
- Self-employed persons: All contingencies except employment injury benefits.
- Voluntary insured persons are covered for Age & Survivors' benefits only.
- Employed persons under age 16 or over age 61 are covered for employment injury benefits only.

A.1.2 Insurable Earnings and Contributions

Earnings used for determining contributions and benefits are limited to \$6,500 per month. Earnings include basic salary and all other earnings paid in cash.

The ceiling on insurable wages has increased since 1978 as follows:

1978 to 1983	\$24,000.00 per annum
1984 to 1992	\$48,000.00 per annum
1993 to 1995	\$62,400.00 per annum
1996 to 1997	\$70,200.00 per annum
1998 to present	\$78,000.00 per annum

Contributions are computed as a percentage of insurable earnings. The contribution rate is 11%, 5% paid by the employee and 6% by the employer. Before Employment Injury Benefits were introduced in 1986, the contribution rate was 10%. Self-employed persons pay a 10% contribution rate and voluntary contributors pay at 5% of insurable earnings. Contributions at 1% of insurable earnings are payable for those less than 16 or over 61.

Table A.1 Contribution Rates

Insured Category	Employee	Employer	Total
Employed	5%	6%	11%
Self-employed	-	-	10%

A.2 Benefit Provisions

A.2.1 Long-Term Benefits

(a) OLD-AGE CONTRIBUTORY PENSION

CONTRIBUTION REQUIREMENT: 500 paid or credited weekly contributions of which 150 must be paid.

AGE REQUIREMENT: 62. The pension is not dependent on retirement from the workforce.

AMOUNT OF BENEFIT: 30% of average insurable earnings over the best three years in the last 15, plus 2% for every 50 weeks credited between 500 and 750, plus 1% for every 50 weeks credited over 750.

MAXIMUM PENSION: 60 % of average earnings over the best three years.

MINIMUM PENSION: \$400.00 per month. The minimum pension also applies to Invalidity pension. It was last increased on January 1, 2009 from \$300 per month.

(b) AGE GRANT

CONTRIBUTION REQUIREMENT: 50 paid or credited weekly contributions.

ELIGIBILITY: Other than for the contribution requirement, the applicant must be eligible for Age Benefit.

AMOUNT OF BENEFIT: 6 times average weekly insurable earnings for each 50 weekly contributions paid or credited. This amount is paid as a lump sum.

(c) INVALIDITY PENSION

CONTRIBUTION REQUIREMENT: 150 weekly contributions paid.

ELIGIBILITY: The applicant is:

- i. Less than 62,
- ii. Medically declared an invalid, other than as a result of an employment injury,
- iii. Has exhausted the maximum period for sickness benefit.

AMOUNT OF BENEFIT: Calculated in the same manner as for Age benefit, except that the minimum pension is 30% of average insurable earnings or \$400 per month, whichever is higher.

DURATION OF PENSION: Payable as long as invalidity continues. A review of the person's continuing eligibility is made at least every three years.

(d) SURVIVORS' BENEFITS

CONTRIBUTION REQUIREMENT: The deceased, at time of death, was receiving or had paid enough contributions to qualify for an Invalidity or Age pension.

ELIGIBILITY: Widow or widower married for at least three years (includes common-law spouse), child(ren) under 16, 18 if in full-time education or invalid, and dependent parents.

AMOUNT OF BENEFIT: The proportion of Invalidity pension shown below:

Widow or widower: 50%;

Child or parent: 16 2/3%;

Child (orphan or disabled): 33 1/3%;

Maximum benefit: 100% of pension deceased would have been entitled to.

Minimum pensions: Widow(er) - \$200 per month (increased from \$150 Jan. 2009)

Child/parent - \$96 per month (increased from \$72 Jan. 2009)

If the claimant is also entitled to an Age Pension, the Age pension plus 50% of the Survivors pension is paid, subject to a minimum of 100% of the Survivors pension.

DURATION OF BENEFIT:

- Widow or widower aged 45 or over at time of death, or disabled: life pension or until the beneficiary is entitled to a larger Age pension in his/her own right. The pension will cease upon remarriage or cohabitation;
- For a widow(er) under age 45 and not disabled, or not married for at least 3 years: one year;
- For dependent children, up to age 16, or 18 if attending school or college.
- For an invalid child, for as long as invalidity continues.
- For a parent under 62 and not invalid, one year. If invalid or over 62, pension payable for life.

(e) SURVIVORS' GRANT

CONTRIBUTION REQUIREMENT: 50 contributions paid or credited by the deceased insured person.

ELIGIBILITY: Other than for the contribution requirement of the deceased, the applicant must be eligible for survivors pension.

AMOUNT OF BENEFIT: The same proportion of the Age grant as Survivors' pension bears to the Age pension.

(f) ASSISTANCE PENSION

ELIGIBILITY: The applicant must be:

- i. Either aged 62 or over or an invalid,
- ii. Not gainfully employed,
- iii. In need,
- iv. Ordinarily resident in St. Kitts-Nevis,
- v. Not previously awarded an Age or Invalidity pension.

AMOUNT OF BENEFIT: \$250.00 per month.

A.2.2 Short-Term Benefits

(a) SICKNESS BENEFIT

CONTRIBUTION REQUIREMENTS: 26 paid contribution weeks with at least 8 weeks in the last 13. The insured must be 16 or over and under age 62, and was employed immediately before onset of the illness.

WAITING PERIOD: 3 days. If incapacity lasts for more than 3 days, benefit is payable from the first day. Two periods of illness separated by less than eight weeks are treated as one.

AMOUNT OF BENEFIT: 65% of average weekly insurable earnings during the 13 weeks prior to illness.

DURATION OF BENEFIT: Maximum of 26 weeks.

(b) MATERNITY ALLOWANCE

CONTRIBUTION REQUIREMENT: 39 paid contribution weeks with at least 20 contributions in the last 39 weeks immediately preceding the week that is 6 weeks before the expected week of confinement or the week from which benefit began, if later.

AMOUNT OF BENEFIT: 65% of average weekly insurable earnings during the last 39 weeks.

DURATION OF BENEFIT: 13 weeks, starting no earlier than 6 weeks before the expected date of confinement.

(c) MATERNITY GRANT

CONTRIBUTION REQUIREMENT: Same as for Maternity Allowance. If the mother fails to qualify for Maternity Allowance but her legally married husband's contributions satisfy these conditions, the Maternity Grant is payable.

AMOUNT OF GRANT: \$450. The Maternity Grant has increased as follows:

1978 – 1983	50.00
1984 – 1998	100.00
1989 – 1992	200.00
1993 – 1995	300.00
1995 – 1998	400.00
1998 – present	450.00

(d) FUNERAL GRANT

ELIGIBILITY: The insured person must have made at least 26 contributions. A grant is also payable in respect of the death of the spouse or a dependant child of the insured. If death results from employment injury, no prior contributions are required.

AMOUNT OF GRANT: \$4,000 for the insured or his/her spouse. The amount for a dependant child ranges from \$400 to \$1,600. The funeral grant for the insured has been increased as follows:

1978 – 1983	\$ 200.00
1984 – 1988	500.00
1989 – 1992	1,000.00
1993 – 1994	1,500.00
1995 – 1997	2,000.00
1998 – 2002	2,500.00
2002 - present	4,000.00

A.2.3 Employment Injury Benefits**(a) INJURY BENEFIT**

ELIGIBILITY: Incapable of work as a result of an accident arising out of insured employment, or as a result of an illness related to employment. There are no qualifying contribution requirements for Employment Injury benefits.

AMOUNT OF BENEFIT: 75% of average insurable earnings in the last 13 weeks before the accident or disease occurred (or less if the person was insured for a shorter period.)

DURATION OF BENEFIT: 26 weeks.

WAITING PERIOD: 3 days. If incapacity lasts 4 or more days, benefit is payable from the first day.

(b) DISABLEMENT BENEFIT

ELIGIBILITY: Partial or total loss of any physical or mental faculty as a result of a job-related accident or disease.

WAITING PERIOD: The payment period of injury benefit.

AMOUNT OF BENEFIT: The payment of a pension or a grant is based on the percentage loss of faculty suffered.

- If degree of disablement is less than 20%, a grant equal to 365 times the weekly benefit rate times the degree of disablement is paid.
- If degree of disablement is 20% or more, a weekly benefit of the injury benefit amount times the degree of disablement is paid.
- In the case of temporary disablement, the benefit is payable for as long as the disablement lasts up to a maximum of 365 weeks.

(c) DEATH BENEFIT

ELIGIBILITY: Dependants are defined as for survivors' benefit.

AMOUNT OF BENEFIT: Proportion of disablement pension, the same percentage as for Survivors benefit.

(d) MEDICAL EXPENSES

EXPENSES COVERED: Reasonable expenses up to \$25,000 for doctor's fees, medication, hospitalisation, travelling and constant care and other specified and other specified costs incurred as a result of an employment injury or prescribed disease.

(e) BURIAL GRANT

ELIGIBILITY: The insured person died as a result of an employment injury. No prior contributions are required.

AMOUNT OF GRANT: \$4,000.

A.2.4 CARICOM Social Security Agreement

St. Kitts-Nevis is a signatory to the CARICOM Agreement on Social Security. By totalising contributions made in all CARICOM countries, persons who have insufficient contributions to qualify for a pension in one or more states, may receive pensions from all systems if the total number of contributions made exceeds the number required in that state. The pension payable would be the proportion that contributions made in that state bear to the total contributions made times the pension that would have been payable for the total number of contributions made. The Agreement covers Old-age, Invalidity, Survivors and Disablement benefits only.

Appendix B Methodology, Data & Assumptions

This actuarial review makes use of the comprehensive methodology developed at the Financial and Actuarial Service of the ILO (ILO FACTS) for reviewing the long-term actuarial and financial status of a national pension scheme. The review has been undertaken by modifying the generic version of the ILO modeling tools to fit the specific case of St. Kitts-Nevis and the Social Security Fund. These modeling tools include a population model, an economic model, a labour force model, a wage model, a long-term benefits model and a short-term benefits model.

The actuarial valuation begins with a projection of St. Kitts-Nevis's future demographic and economic environment. Next, projection factors specifically related to Social Security are determined and used in combination with the demographic/economic framework to estimate future cash flows and reserves. Assumption selection takes into account both recent experience and future expectations, with emphasis placed on long-term trends rather than giving undue weight to recent experience. Projections have been made under three assumption sets for which the demographic and economic assumptions vary.

B.1 Modelling the Demographic & Economic Developments

The general St. Kitts-Nevis population has been projected beginning with totals obtained from the preliminary results of the 2011 national census and by applying appropriate mortality, fertility and migration assumptions. For the Best Estimate scenario the total fertility rate is assumed to remain constant at 1.65 throughout the projection period. Table B.1 shows ultimate age-specific and total fertility rates.

Table B.1. Age-Specific & Total Fertility Rates

Age Group	2014	Ultimate Fertility Rates		
		<i>Optimistic</i>	<i>Best Estimate</i>	<i>Pessimistic</i>
15 - 19	-	-	-	-
20 - 24	0.045	0.046	0.045	0.041
25 - 29	0.086	0.089	0.086	0.078
30 - 34	0.075	0.078	0.075	0.069
35 - 39	0.080	0.082	0.080	0.072
40 - 44	0.037	0.038	0.037	0.033
45 - 49	0.010	0.010	0.010	0.009
TFR	1.65	1.70	1.65	1.50

Mortality rates have been determined using United Nations life tables for Latin America. These rates have been adjusted selected to model closely the actual number of deaths in St. Kitts-Nevis. Improvements in life expectancy for the Best Estimate scenario have been assumed to follow the “slow” rate as established by the United Nations. Sample mortality rates for the Best Estimate scenario and the life expectancies at birth and at age 62 for sample years are provided in Table B.2.

Table B.2. Sample Mortality Rates & Life Expectancies

Age	Males			Females		
	2014	2044	2074	2014	2044	2074
0	0.0404	0.0270	0.0050	0.0273	0.0043	0.0042
5	0.0011	0.0006	0.0003	0.0006	0.0002	0.0001
15	0.0006	0.0004	0.0004	0.0004	0.0003	0.0001
25	0.0013	0.0008	0.0010	0.0008	0.0010	0.0006
35	0.0019	0.0012	0.0010	0.0012	0.0009	0.0006
45	0.0037	0.0025	0.0023	0.0026	0.0020	0.0016
55	0.0087	0.0064	0.0063	0.0065	0.0056	0.0044
65	0.0214	0.0170	0.0156	0.0171	0.0135	0.0102
75	0.0519	0.0443	0.0439	0.0445	0.0388	0.0292
85	0.1211	0.1106	0.1246	0.1109	0.1175	0.0912
95	0.2573	0.2503	0.2819	0.2505	0.2760	0.2416
Life Expectancy at:						
Birth	70.5	74.5	76.6	74.6	77.9	80.7
Age 62	17.8	19.0	19.0	19.1	19.9	21.9

Table B.3. Life Expectancies At Age 62

	2014	2074		
		Optimistic	Intermediate	Pessimistic
Male	17.8	18.9	19.0	20.4
Female	19.1	19.6	21.9	23.1

Net outward migration is assumed to decrease to zero in 2025 followed by future periods of low net inward migration

Table B.4. Net Migration

Age	2014			2045		
	Optimistic	Intermediate	Pessimistic	Optimistic	Intermediate	Pessimistic
0 - 9	(11)	(22)	(33)	9	4	3
10 - 19	(6)	(12)	(17)	5	2	2
20 - 29	(46)	(92)	(138)	37	18	12
30 - 39	(40)	(80)	(120)	32	16	11
40 - 49	(17)	(35)	(52)	14	7	5
50 - 59	(6)	(11)	(17)	4	2	1
60 - 69	(1)	(1)	(2)	1	0	0
70+	1	3	4	(1)	(1)	(0)
All Ages	(125)	(250)	(375)	100	50	33

The projection of the labour force, i.e. the number of people available for work, is obtained by applying assumed labour force participation rates to the projected number of persons in the total population. Over the first 30 years age-specific labour force participation rates for both males and females for ages 43 and over are assumed to gradually approach the rates that in 2014 apply to persons five years younger. Table B.5 below shows the assumed age-specific labour force participation rates in 2014 and 2064.

Table B.5. Age-Specific & Total Labour Force Participation Rates

Age	Males		Females		Year	Males	Females
	2014	2074	2014	2074			
17	42%	42%	38%	38%			
22	92%	92%	86%	86%	2014	83%	75%
27	92%	92%	90%	90%	2019	83%	75%
32	94%	94%	92%	92%			
37	93%	93%	94%	94%	2024	84%	75%
42	96%	96%	94%	94%	2034	85%	77%
47	93%	96%	86%	94%	2044	85%	78%
52	89%	93%	76%	85%			
57	82%	89%	66%	75%	2054	85%	77%
62	75%	81%	48%	65%	2064	85%	77%
67	55%	74%	24%	46%	2074	85%	78%

The projected real GDP divided by the projected labour productivity per worker gives the number of employed persons required to produce total output. Unemployment is then measured as the difference between the projected labour force and employment.

Estimates of increases in the total wages as well as the average wage earned are required. Annual average real wage increases are assumed equal to the assumed increase in labour productivity as it is expected that wages will almost adjust to efficiency levels over time. The inflation assumption affects nominal average wage increases. Actual projection assumptions for each scenario may be found in Table 4.1.

B.2 Projection of Social Security Income & Expenditure

This actuarial review addresses all Social Security Fund revenue and expenditure items. For Short-term benefits, income and expenditure are projected as a percentage of insurable wages. Projections of pensions are performed following a year-by-year cohort methodology. For each year up to 2074, the number of contributors and pensioners, and the dollar value of contributions, benefits and administrative expenditure, is estimated.

Once the projections of the insured (covered) population, as described in the previous section, are complete, contribution income is then determined from the projected total insurable wages, the contribution rate and contribution density. Contribution density refers to the average number of weeks of contributions persons make during a year.

Benefit amounts are obtained through contingency factors based primarily on Scheme experience and applied to the population entitled to benefits. Investment income is assumed to decline until reaching its ultimate level in 2018. Social Security's administrative expenses are modelled as a percentage of insurable earnings. Finally, the end-of-year reserve is the beginning-of-year reserve plus the net result of cash inflow and outflow.

B.3 Social Security Population Data and Assumptions

The data required for the valuation of the Social Security Fund is extensive. As of December 31st, 2014, required data includes the insured population by active and inactive status, the distribution of insurable wages among contributors, the distribution of paid and credited contributions and pensions in payment, all segregated by age and sex.

Scheme specific assumptions such as the incidence of invalidity, the distribution of retirement by age, density and collection of contributions, are determined with reference to the application of the Scheme's provisions and historical experience.

Projecting investment income requires information of the existing assets at the valuation date and past performance of each class. Future expectations of changes in asset mix and expected rates of return on each asset type together allow for long-term rate of return expectations.

Details of Social Security specific input data and the key assumptions used in this report are provided in tables B.6 through B.10.

Table B.6. 2014 Active Insured Population, Earnings & Past Credits

Age	# of Active Insureds		Average Monthly Insurable Earnings		Average # of Years of Past Contributions	
	Male	Female	Male	Female	Male	Female
15 - 19	519	467	1,445	1,445	1.1	0.9
20 - 24	1,699	1,749	1,874	1,848	3.6	3.3
25 - 29	1,789	1,879	2,382	2,336	6.9	6.6
30 - 34	1,761	1,962	3,015	2,889	10.3	10.1
35 - 39	1,598	1,783	3,388	3,247	13.7	13.7
40 - 44	1,444	1,640	3,966	3,208	17.2	17.3
45 - 49	1,419	1,442	3,961	3,051	20.7	21.0
50 - 54	1,301	1,362	3,719	3,072	22.7	23.4
55 - 59	1,009	1,102	3,835	2,935	23.3	24.2
60 - 64	422	352	3,668	2,978	23.5	24.5
62+	421	332	4,207	2,955	23.5	24.5
All Ages	13,382	14,070	3,108	2,751	12.4	12.8

Table B.7. Pensions in Payment - December 2014

Age	Old-Age Benefit		Invalidity Benefit		Survivors Benefits		Death & Disablement		Assistance	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0 - 4	-	-	-	-	9	11	-	2	-	-
5 - 9	-	-	-	-	43	42	-	2	-	-
10 - 14	-	-	-	-	67	88	1	1	-	-
15 - 19	-	-	-	-	49	46	-	1	3	1
20 - 24	-	-	-	-	-	-	-	-	3	5
25 - 29	-	-	2	1	1	-	1	-	11	6
30 - 34	-	-	4	5	1	-	3	2	14	7
35 - 39	-	-	6	-	1	1	5	1	7	8
40 - 44	-	-	6	14	2	-	7	2	8	9
45 - 49	-	-	21	19	4	6	11	4	6	5
50 - 54	-	-	32	41	30	9	9	4	12	10
55 - 59	-	-	48	72	55	19	3	5	13	21
60 - 64	421	408	15	32	55	21	5	5	6	12
65 - 69	444	435	-	-	55	22	2	1	17	22
70 - 74	235	257	-	-	67	17	-	3	20	31
75 - 79	160	183	-	-	54	16	-	-	18	59
80 - 84	98	109	-	-	53	13	-	-	16	47
85 - 89	39	45	-	-	26	11	-	2	20	42
90 - 94	13	10	-	-	16	4	-	-	4	22
95 - 99	1	2	-	-	-	3	-	-	4	14
# of Pensioners	1,411	1,449	134	184	588	329	47	35	182	321
Avg Monthly	\$ 1,418	\$ 1,062	\$ 834	\$ 719	\$ 382	\$ 296	\$ 262	\$ 176	\$ 255	\$ 255

The following table shows assumed density factors, or the average portion of the year for which contributions are made. These rates are assumed to remain constant for all years.

Table B.8. Density Of Contributions

Age	Males	Females
17	56%	46%
22	75%	77%
27	80%	86%
32	81%	89%
37	81%	91%
42	82%	91%
47	81%	91%
52	82%	91%
57	82%	89%
62	82%	89%

The following table shows the expected incidence rates of insured persons qualifying for Invalidity benefit which is assumed for all projection years.

Table B.9. Rates of Entry Into Invalidity

Age	Males	Females
17	-	-
22	-	0.191
27	0.186	0.710
32	1.514	0.510
37	0.834	0.935
42	2.078	2.439
47	3.524	3.699
52	7.174	7.832
57	8.589	10.284
62	10.005	12.737

Table B.10, shows the assumed probability of Survivor benefit claims and the average ages of new claimants, groups by the age of the deceased.

Table B.10. Probability of a Deceased Having Eligible Survivors & Their Average Ages

Age	Males		Females	
	Probability of Eligible Spouse	Avg # of Eligible Children	Probability of Eligible Spouse	Avg # of Eligible Children
17	0%	-	0%	-
22	9%	0.0	0%	0.1
27	32%	0.1	0%	0.3
32	43%	0.5	7%	0.7
37	36%	0.9	23%	1.4
42	39%	1.4	28%	1.3
47	58%	1.3	13%	1.2
52	71%	0.8	13%	0.9
57	77%	0.5	36%	0.2
62	68%	0.6	41%	0.1
67	39%	0.2	17%	-
72	19%	0.2	3%	-
77	16%	0.2	3%	-
82	11%	0.1	2%	-
87	4%	0.0	1%	-

Appendix C Projection Results

Table C.1. Projected St. Kitts-Nevis Population, All Scenarios

Year	All Ages	0-15		16-61		62+		Age Depend. Ratio
2011	46,398	11,291	24.3%	31,311	67.5%	3,796	8.2%	0.12
Best Estimate								
2021	46,990	9,499	20.2%	31,306	66.6%	6,185	13.2%	0.20
2031	47,776	9,087	19.0%	29,663	62.1%	9,026	18.9%	0.30
2041	47,713	8,475	17.8%	28,799	60.4%	10,438	21.9%	0.36
2051	46,965	7,788	16.6%	27,628	58.8%	11,550	24.6%	0.42
2061	45,822	7,561	16.5%	25,887	56.5%	12,374	27.0%	0.48
2071	44,254	7,329	16.6%	24,720	55.9%	12,205	27.6%	0.49
Optimistic								
2021	48,262	9,823	20.4%	32,267	66.9%	6,173	12.8%	0.19
2031	49,923	9,778	19.6%	31,099	62.3%	9,046	18.1%	0.29
2041	50,446	9,184	18.2%	30,797	61.1%	10,464	20.7%	0.34
2051	50,124	8,599	17.2%	29,932	59.7%	11,593	23.1%	0.39
2061	49,479	8,564	17.3%	28,490	57.6%	12,425	25.1%	0.44
2071	48,493	8,407	17.3%	27,873	57.5%	12,212	25.2%	0.44
Pessimistic								
2021	45,511	9,001	19.8%	30,329	66.6%	6,180	13.6%	0.20
2031	45,117	7,893	17.5%	28,223	62.6%	9,001	19.9%	0.32
2041	44,335	7,281	16.4%	26,654	60.1%	10,400	23.5%	0.39
2051	42,920	6,590	15.4%	25,074	58.4%	11,256	26.2%	0.45
2061	41,156	6,108	14.8%	23,026	55.9%	12,022	29.2%	0.52
2071	39,199	5,714	14.6%	21,242	54.2%	12,243	31.2%	0.58

Table C.2. Projected Cash Flows & Reserves, *Pessimistic Scenario* (millions of \$'s)

Year	Cash Inflows				Cash Outflows				Surplus/ (Deficit)	Reserves	
	Contribution Income	Investment Income	Other Income	Total	Benefits & Pensions	Admin. Expenses	Loss Provisions	Total		End of Year	R-E Ratio
2012	69.7	64.8	0.5	135.0	47.4	12.1	10.8	70.2	64.7	1,229	17.5
2013	74.7	65.7	0.7	141.1	52.5	14.9	0.3	67.6	73.4	1,299	19.2
2014	82.5	62.6	0.5	145.5	59.6	15.8	45.1	120.4	25.1	1,324	17.6
2015	86.9	53.1	0.6	140.5	68.7	13.8	0.0	82.5	58.0	1,382	16.7
2016	87.3	51.8	0.6	139.7	73.9	14.1	0.0	88.0	51.8	1,434	16.3
2017	90.5	50.1	0.6	141.1	82.9	14.8	0.0	97.7	43.4	1,477	15.1
2018	92.9	47.8	0.6	141.4	90.3	15.4	0.0	105.7	35.6	1,513	14.3
2019	95.4	45.1	0.6	141.2	98.7	16.0	0.0	114.7	26.4	1,539	13.4
2020	99.2	45.8	0.6	145.6	108.2	16.9	0.0	125.1	20.5	1,560	12.5
2024	112.9	46.1	0.7	159.8	157.4	20.3	0.0	177.6	(17.9)	1,552	8.7
2034	151.7	18.3	1.0	170.9	332.0	27.6	0.0	359.6	(188.7)	523	1.5
2044	201.4	(78.1)	1.3	124.6	573.6	36.6	0.0	610.2	(485.6)	(2,888)	(4.7)
2054	257.6	(284.8)	1.7	(25.5)	874.6	46.8	0.0	921.4	(946.9)	(10,111)	(11.0)
2064	335.7	(654.5)	2.2	(316.7)	1,220.4	61.0	0.0	1,281.4	(1,598.1)	(22,947)	(17.9)
2074	440.6	(1,247.2)	2.9	(803.7)	1,580.9	80.1	0.0	1,661.0	(2,464.7)	(43,432)	(26.1)

Negative reserves indicate the indebtedness of the Fund and negative investment income is the current cost of servicing that debt.

Table C.3. Projected Benefit Expenditure— *Pessimistic Scenario* (millions of \$'s)

Year	Pensions, Grants & Benefits						Benefits as a % of:	
	Age	Invalidity	Survivors	Assistance	Short-term	Emp. Injury	Insurable Wages	GDP
2012	30.5	2.6	2.8	1.6	7.9	1.1	7.5%	2.5%
2013	34.2	3.0	2.9	1.5	8.5	1.4	7.7%	2.7%
2014	39.3	3.1	3.0	1.5	10.4	1.6	7.9%	3.1%
2015	48.7	3.2	3.3	1.5	11.1	1.7	8.7%	3.5%
2016	53.3	3.4	3.5	1.4	11.2	1.9	9.3%	3.6%
2017	60.6	3.9	4.0	1.5	11.7	2.2	10.1%	3.8%
2018	66.9	4.2	4.3	1.4	12.1	2.5	10.7%	4.0%
2019	74.0	4.5	4.6	1.4	12.5	2.7	11.4%	4.2%
2020	82.2	4.8	5.0	1.4	13.1	3.0	12.0%	4.4%
2024	125.2	6.1	6.7	1.4	15.3	4.2	15.3%	5.4%
2034	282.7	9.6	13.3	1.5	20.7	6.9	24.1%	7.9%
2044	500.6	14.9	22.6	1.7	27.5	10.5	31.3%	9.7%
2054	774.7	19.5	34.6	2.1	35.1	14.4	37.3%	10.4%
2064	1,088.1	24.6	48.1	2.5	45.8	18.8	40.0%	10.3%
2074	1,408.7	32.7	61.6	3.0	60.1	18.8	39.5%	9.4%

Table C.4. Projected Contributors & Pensioners, *Pessimistic Scenario*

Year	# of Contributors	# of Pensioners					Total # of Pensioners	Ratio of Contributors to Pensioners
		Age	Invalidity	Survivors	Assistance	Death & Disablement		
2012	24,503	2,431	308	933	535	62	4,269	5.7
2013	27,387	2,622	323	975	516	48	4,484	6.1
2014	27,471	2,860	318	917	505	56	4,656	5.9
2015	26,142	3,088	341	976	489	86	4,980	5.2
2016	26,126	3,324	357	1,020	467	91	5,260	5.0
2017	26,103	3,569	376	1,053	449	97	5,544	4.7
2018	26,069	3,823	391	1,078	431	102	5,825	4.5
2019	26,023	4,107	407	1,102	416	108	6,140	4.2
2020	25,950	4,415	420	1,123	403	113	6,473	4.0
2024	25,505	5,724	467	1,177	357	131	7,856	3.2
2034	24,519	8,818	538	1,385	296	173	11,210	2.2
2044	23,579	11,015	602	1,580	271	219	13,687	1.7
2054	21,861	12,098	583	1,681	256	240	14,857	1.5
2064	20,034	12,462	533	1,643	242	246	15,126	1.3
2074	18,580	11,930	504	1,515	230	252	14,431	1.3

Table C.5. Projected Cash Flows & Reserves, *Optimistic Scenario* (millions of \$'s)

Year	Cash Inflows				Cash Outflows				Reserves		
	Contribution Income	Investment Income	Other Income	Total	Benefits & Pensions	Admin. Expenses	Loss Provisions	Total	Surplus/ (Deficit)	End of Year	R-E Ratio
2012	69.7	64.8	0.5	135.0	47.4	12.1	10.8	70.2	64.7	1,229	17.5
2013	74.7	65.7	0.7	141.1	52.5	14.9	0.3	67.6	73.4	1,299	19.2
2014	82.5	62.6	0.5	145.5	59.6	15.8	45.1	120.4	25.1	1,324	17.6
2015	93.0	53.1	0.6	146.8	69.5	14.8	0.0	84.3	62.5	1,386	16.5
2016	93.0	55.6	0.6	149.2	74.6	14.6	0.0	89.2	60.0	1,446	16.2
2017	97.3	57.8	0.6	155.8	83.7	15.0	0.0	98.8	57.0	1,504	15.2
2018	100.8	60.0	0.7	161.5	91.2	15.4	0.0	106.6	54.9	1,558	14.6
2019	104.4	62.1	0.7	167.3	99.7	15.7	0.0	115.3	51.9	1,610	14.0
2020	109.5	64.1	0.7	174.3	109.3	16.2	0.0	125.5	48.8	1,659	13.2
2024	127.2	70.0	0.8	198.0	156.8	17.6	0.0	174.4	23.6	1,797	10.3
2034	178.5	56.0	1.2	235.6	323.7	24.3	0.0	348.0	(112.4)	1,370	3.9
2044	246.9	(34.8)	1.6	213.7	555.2	33.7	0.0	588.8	(375.1)	(1,078)	(1.8)
2054	332.4	(264.9)	2.2	69.6	865.7	45.3	0.0	911.0	(841.4)	(7,180)	(7.9)
2064	460.1	(721.3)	3.0	(258.2)	1,210.7	62.7	0.0	1,273.4	(1,531.6)	(19,164)	(15.0)
2074	639.9	(1,496.1)	4.2	(852.1)	1,554.1	87.3	0.0	1,641.4	(2,493.5)	(39,401)	(24.0)

Negative reserves indicate the indebtedness of the Fund and negative investment income is the current cost of servicing that debt.

Table C.6. Projected Benefit Expenditure— *Optimistic Scenario* (millions of \$'s)

Year	Pensions, Grants & Benefits						Benefits as a % of:	
	Age	Invalidity	Survivors	Assistance	Short-term	Emp. Injury	Insurable Wages	GDP
2012	30.5	2.6	2.8	1.6	7.9	1.1	7.5%	2.5%
2013	34.2	3.0	2.9	1.5	8.5	1.4	7.7%	2.7%
2014	39.3	3.1	3.0	1.5	10.4	1.6	7.9%	3.1%
2015	48.7	3.2	3.3	1.5	11.8	1.7	8.2%	3.5%
2016	53.2	3.4	3.6	1.4	11.9	1.9	8.8%	3.6%
2017	60.5	3.9	4.0	1.5	12.6	2.2	9.5%	3.9%
2018	66.7	4.2	4.4	1.4	13.1	2.5	10.0%	4.0%
2019	73.7	4.5	4.7	1.4	13.7	2.8	10.5%	4.2%
2020	81.8	4.8	5.1	1.4	14.4	3.1	11.0%	4.4%
2024	122.5	6.1	6.8	1.3	17.2	4.4	13.6%	5.4%
2034	269.6	10.0	13.8	1.3	24.3	7.4	20.0%	7.7%
2044	473.3	15.6	23.9	1.5	33.7	11.5	24.7%	9.4%
2054	751.5	20.5	37.0	1.7	45.3	15.8	28.6%	10.3%
2064	1,053.5	26.4	52.9	2.0	62.7	21.4	28.9%	10.2%
2074	1,337.2	38.9	69.9	2.3	87.3	21.4	26.7%	9.3%

Table C.7. Projected Contributors & Pensioners, *Optimistic Scenario*

Year	# of Contributors	# of Pensioners					Total # of Pensioners	Ratio of Contributors to Pensioners
		Age	Invalidity	Survivors	Assistance	Death & Disablement		
2012	24,503	2,431	308	933	535	62	4,269	5.7
2013	27,387	2,622	323	975	516	48	4,484	6.1
2014	27,471	2,860	318	917	505	56	4,656	5.9
2015	26,926	3,087	340	980	489	86	4,981	5.4
2016	27,109	3,321	356	1,027	467	91	5,263	5.2
2017	27,271	3,563	375	1,065	448	97	5,548	4.9
2018	27,407	3,815	391	1,096	431	103	5,835	4.7
2019	27,518	4,097	407	1,126	416	108	6,155	4.5
2020	27,587	4,403	422	1,153	402	114	6,493	4.2
2024	27,576	5,701	478	1,237	357	135	7,907	3.5
2034	27,279	8,686	572	1,547	295	186	11,286	2.4
2044	27,320	10,601	644	1,834	270	239	13,587	2.0
2054	26,286	11,783	611	1,961	255	259	14,870	1.8
2064	25,214	12,089	567	1,966	241	270	15,133	1.7
2074	24,794	11,319	585	1,876	229	297	14,307	1.7

Appendix D Income & Expenditure, 2012–14

	2012	2013	2014
Income			
Contribution Income	69,735,737	74,668,386	82,494,154
Investment Income	64,780,294	65,692,975	62,575,547
Other Income	456,494	712,750	456,424
Total Income	134,972,525	141,074,111	145,526,125
Expenditure			
Benefits			
Sickness Benefit	5,174,487	6,070,513	7,648,030
Maternity Allowance	1,888,315	1,652,182	1,936,418
Maternity Grant	212,400	183,150	220,050
Funeral Grant	664,312	568,591	641,206
Age Pension	30,490,907	34,245,017	39,330,693
Invalidity Pension	2,561,345	2,963,436	3,146,547
Survivors' Pension	2,823,207	2,935,417	3,014,530
Age Grant	812,540	1,179,332	781,779
Age Assistance	1,123,171	1,076,265	1,077,050
Invalidity Assistance	453,044	451,350	458,945
Medical Expenses	137,982	89,609	89,471
Injury Benefit	354,114	405,410	505,057
Disablement Grant	16,369	-	22,573
Disablement Benefit	451,025	436,620	478,239
Death Benefit	128,792	155,934	169,445
Travel Expenses	27,415	9,728	13,182
Burial Grant	4,000	4,000	8,000
Constant care	26,160	26,160	26,697
Total Benefit Expenditure	47,349,585	52,452,714	59,567,912
Administrative Expenditure	12,135,947	14,856,553	15,767,945
Investment Loss Provision	10,755,285	316,060	45,093,331
Total Expenditure	70,240,817	67,625,327	120,429,188
Excess of Income over Expenditure	64,731,708	73,448,784	25,096,937
Social Security Reserves at End of Year	1,228,656,791	1,299,330,225	1,324,028,584
Short-term Benefits Branch	108,739,446	117,297,500	116,776,733
Long-term Benefits Branch	938,484,766	989,562,679	1,003,980,324
Employment Injury Benefits Branch	164,614,920	178,423,438	189,615,757
Revaluation Reserve	16,817,659	14,046,608	13,655,770

Appendix E Benefit Experience & Analysis

Table E.1. Summary Branch Experience (% of Insurable Wages)

Benefit Branch	Contributions Allocated	Total Expenditure [^]		
		2012	2013	2014
Short-term	2.0%	1.59%	1.63%	1.73%
Employment Injury	1.0%	0.30%	0.30%	0.29%
Long-term	8.0%	7.49%	7.99%	7.81%
All Branches	11.0%	9.38%	9.92%	9.83%

[^] Excludes provision for loss on investments

Table E.2. Benefit Branch Reserves Funding and Expenditure Levels

Benefit Branch	Year-end Reserve (in millions)		Reserve-Expenditure Ratio [^]		
	2011	2014	2011	2014	Suggested Target
Short-term	\$102.2	\$116.8	9.8	8.8	1.0
Employment Injury	\$152.2	\$189.6	74.1	82.8	2.0
Long-term	\$892.7	\$1,004.0	20.9	16.8	N/A
Total Benefit Reserves	\$1,147.1	\$1,310.4	21.8	17.9	N/A

[^] Excludes provision for loss on investments

Table E.3. Pensions In Payment, Awarded & Terminated, 2011- 2014

Pension Type	Paid in	Awarded	Terminated	Paid in	Average Monthly Pension	
	Dec. 2011	2012-2014	2012-2014	Dec. 2014	December 2011	December 2014
Age	2,252	894	286	2,860	\$1,057	\$1,146
Invalidity	273	239	194	318	\$699	\$829
Survivors	867	147	97	917	\$257	\$274
Assistance	565	89	302	352	\$257	\$255

Table E.4. LTB Branch Expenditure As % of Insurable Wages, 2012-2014

Pension Type	2012	2013	2014
Age Pension	4.81%	5.04%	5.24%
Invalidity Pension	0.40%	0.44%	0.42%
Survivors' Pension	0.45%	0.43%	0.40%
Age Grant	0.13%	0.17%	0.10%
Age Assistance	0.18%	0.16%	0.14%
Administrative Expenses	1.45%	1.67%	1.60%
Total	7.49%	7.99%	7.97%
Total Benefits (millions of \$'s)	38.27	42.86	47.82

E.2. Short-term Benefit Experience, 2012 – 2014

Table E.5. Sickness Benefit Experience, 2012 – 2014

Year Ended	# Claims Awarded per 1,000 Insureds	Average benefit Duration (days)	Average Weekly Benefit	Cost as a % of Insurable Wages
2012	329	10.6	423	0.82%
2013	335	10.6	437	0.89%
2014	441	10.3	428	1.02%

Table E.6. Maternity Allowance Experience, 2012 – 2014

Year Ended	# Claims Awarded per 1,000 Insureds	Average Allowance Duration (days)	Average Weekly Allowance	Cost as a % of Insurable Wages
2012	18.7	76.8	375	0.30%
2013	14.0	77.4	390	0.24%
2014	17.1	77.6	373	0.26%

Table E.7. Maternity Grant & Funeral Grant Experience, 2012 – 2014

Year Ended	# Births	# Grants Awarded	Cost as a % of Ins. Wages	# Deaths	# Grants Awarded	Cost as a % of Ins. Wages
2012	636	453	0.03%	336	246	0.10%
2013	547	385	0.03%	348	208	0.08%
2014	641	466	0.03%	411	243	0.09%

Table E.8. Administrative & Total Expenditure - STB Branch

Year Ended	As a % of Insurable Wages			
	Benefits Expenditure	Admin Expenditure	Provision For Loss on Investments	Total Branch Expenditure
2012	1.25%	0.34%	0.30%	1.89%
2013	1.25%	0.38%	0.01%	1.64%
2014	1.39%	0.38%	1.08%	2.85%

With an allocation of 2.0% of insurable earnings plus investment returns, the STB Branch incurred large surpluses each year.

E.3. Injury Benefit Experience, 2012 – 2014

Table E.9. Employment Injury Benefit Experience, 2012 – 2014

Year Ended	# Claims Awarded per 1,000 Insureds	Average Benefit Duration (days)	Average Weekly Benefit	Cost as a % of Insurable Wages
2012	17	12.6	464	0.06%
2013	15	13.9	496	0.06%
2014	16	15.0	556	0.07%

Table E.10. Medical And Disablement Grant Experience, 2012 – 2014

Year Ended	# Medical Claims Awarded	Cost as a % of Ins. Wages	# Travel Expenses Awarded	Cost as a % of Ins. Wages	# Disablement Grants Awarded	Cost as a % of Ins. Wages
2012	204	0.02%	16	0.004%	2	0.003%
2013	220	0.01%	12	0.001%	0	0.000%
2014	198	0.01%	7	0.002%	2	0.003%

Table E.11. Disablement & Death Benefits, Awards & Pensions In Payment, 2012 – 2014

Year Ended	Disablement Pensions			Death Benefit		
	# Pensions Awarded	Pensions In Payment (December)	Payments as a % of Insurable Wages	# Pensions Awarded	Pensions In Payment (December)	Payments as a % of Insurable Wages
2012	58	579	0.07%	21	558	0.02%
2013	59	638	0.06%	21	579	0.02%
2014	61	699	0.06%	21	600	0.02%

Table E.12. Administrative & Total Expenditure – EIB Branch

With an allocation of 1% of insurable earnings plus investment returns, the EIB Branch incurred large surpluses in each year.

Year Ended	As a % of Insurable Wages			Total Branch Expenditure
	Benefits Expenditure	Admin Expenditure	Provision For Loss on Investments	
2012	0.18%	0.12%	0.11%	0.41%
2013	0.17%	0.14%	0.00%	0.31%
2014	0.18%	0.13%	0.37%	0.68%

Appendix F New Approach To Self-Employed Contributions

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| 1. Registration & Education | <ul style="list-style-type: none"> • Each self-employed person has a unique SS # • Upon registration (or re-registration) he/she shall indicate what income band he/she is usually in. There shall be 4 income bands. <ul style="list-style-type: none"> ○ A: 95% or more of the earnings limit (100%) ○ B: 75% to 95% of the earnings limit (80%) ○ C: 50% to 75% of the earnings limit (60%) ○ D: less than 50% of the earnings limit (40%) <ul style="list-style-type: none"> ▪ For each of these bands there shall be an implicit average insurable wage. The percentage in the brackets is the proportion to be applied to the wage ceiling to determine the implicit average insurable wage. • Unless changed by the individual (as permitted by certain guidelines) this income band will remain in effect until pension age. No changes to a higher band should be allowed after age 55. • As the earnings limit changes each year self-employed persons shall be informed of the expected contributions payable during the year for each band. |
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| 2. Contribution payments | <ul style="list-style-type: none"> • No forms required • No need to pay for any particular month or indicate how many weeks were worked • Pay in cash, by direct deposit, send a cheque or any other permitted form of payment indicating that it is to be applied to his/her “account” or SS #. (New options for paying contributions at banks and bank machines should be considered) A receipt for the amount paid shall be provided. The receipt will also indicate the total amount contributed in the current year and the target amount expected for the remainder of the year. • All contributions received during a calendar year are applied to that year only. There shall be no paying for previous years. • The self-employed person is never considered to be “in arrears” during the year. For the purpose of providing Letters of Good Standing, for example, the contributions made in the previous calendar year shall be used. • If actual contributions exceed the maximum amount due for the year, the excess shall be carried over to the next year. |
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3. Year-end internal calculations	<ul style="list-style-type: none"> Using the amount contributed during the previous year and the income band selected, obtain the number of weeks paid for the year as: <ul style="list-style-type: none"> Total contributions made / 10% / implicit avg. insurable wage Self-employed persons shall be sent a statement early in the new year indicating the number of weeks of contributions made for the previous year and their eligibility to receive benefits during the current year.
4. Short-term benefits	<ul style="list-style-type: none"> Similar to what is currently in place but instead the required contributions must have been made in the previous calendar year
5. Long-term benefits	<ul style="list-style-type: none"> Same approach as currently in place: <ul style="list-style-type: none"> Must have made minimum # of contributions to qualify Pension amount calculated using average insurable earnings and benefit % based on # of contributions made

Following are examples of how the number of contribution weeks shall be determined for two different self-employed persons. For this illustration the wage ceiling is assumed to be \$1,500 per week.

	Self-Employed #1	Self-employed #2
Income Band	Band A (at or above wage ceiling)	Band C (50% to 75% of wage ceiling)
Implicit Weekly Insurable Wage	\$1,500 per week	\$900 per week
Max. Contributions Expected	$\$1,500 \times 52 \times 10\% = \$7,800$	$\$900 \times 52 \times 10\% = \$4,680$
Actual Contributions Paid in the Year	\$5,000	\$4,000
# Contribution Weeks Made	$\$5,000 / 10\% / \$1,500 = 33 \text{ wks}$	$\$4,000 / 10\% / \$900 = 44 \text{ wks}$

For the year illustrated above, the database shall reflect that Self-employed # 1 made 33 weekly contributions for the year at an average insurable wage of \$1,500 per week.

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