



**THE  
NATIONAL INSURANCE BOARD  
OF THE COMMONWEALTH OF THE BAHAMAS**

P.O. Box N-7508, Nassau, Bahamas ■ Tel: (242) 502-1500 ■ Fax: (242) 322-3048 ■ E-mail: [Info@nib-bahamas.com](mailto:Info@nib-bahamas.com)

March 27, 2009

Hon. Zhivargo Laing  
Minister of State For Finance  
**MINISTRY OF FINANCE**  
Nassau, Bahamas

Dear Minister Laing

I have the honour to submit to you the report of the 8<sup>th</sup> Actuarial Review of the National Insurance Fund as of December 31, 2006, prepared in accordance with Section 48 of the National Insurance Act. The Review has been performed by the Board's Actuary, Mr. Derek Osborne.

The Board accepts this report and hopes that changes to the National Insurance Act and Regulations emanating from this report may be made soon.

Sincerely

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Patrick Ward  
Chairman

**Table E.10 Administrative & Total Expenditure - Industrial Branch**

Year Ended	As a % of Insurable Wages	
	Admin. & Other Expenditure	Total Branch Expenditure
2002	0.20%	0.76%
2003	0.22%	0.69%
2004	0.24%	0.83%
2005	0.22%	0.83%
2006	0.27%	0.91%

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

### E.3 Industrial Benefits Branch

Table E.7 Injury Benefit Experience, 2002-2006

Year Ended	# Claims Awarded per 1,000 Insureds	Average Benefit Duration (days)	Average Weekly Benefit	Cost as a % of Insurable Wages
2002	10	23.8	208.20	0.07%
2003	10	22.5	210.36	0.07%
2004	10	21.9	225.98	0.07%
2005	11	25.8	219.96	0.08%
2006	11	24.2	214.63	0.08%

Table E.8 Medical And Disablement Grant Experience, 2002-2006

Year Ended	Medical Expenses		Disablement Grant	
	# Claims Awarded	Cost as a % of Insurable Wages	# Claims Awarded	Cost as a % of Insurable Wages
2002	N/A	0.33%	39	0.008%
2003	1,222	0.24%	65	0.008%
2004	927	0.34%	50	0.007%
2005	1,526	0.34%	33	0.005%
2006	2,165	0.39%	36	0.004%

Table E.9 Disablement & Death Benefit Awards & Pensions In Payment, 2002-2006

Year Ended	Disablement Benefit			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
2002	38	346	0.13%	3	84	0.02%
2003	62	404	0.14%	1	84	0.02%
2004	47	445	0.15%	2	74	0.02%
2005	33	469	0.16%	6	73	0.02%
2006	36	499	0.16%	4	74	0.02%



## THE NATIONAL INSURANCE BOARD OF THE COMMONWEALTH OF THE BAHAMAS

P.O. Box N-7508, Nassau, Bahamas ■ Tel: (242) 502-1500 ■ Fax: (242) 322-3048 ■ E-mail: Info@nib-bahamas.com

March 17, 2008

Mr. Patrick Ward  
Chairman  
THE NATIONAL INSURANCE BOARD

Dear Mr. Ward:

It is my pleasure to present to you the 8<sup>th</sup> Actuarial Review of the National Insurance Fund prepared as at December 31, 2006.

The key elements of this report are:

- (i) a review of past experience;
- (ii) 60-year projections of NIB's income, expenditure and reserves under three scenarios; and
- (iii) policy recommendations aimed at enhancing the relevance and financial sustainability of The Bahamas' primary social security system.

I am grateful to the many persons involved in the preparation of this report, especially Mrs. Tami Francis, Statistical/Research Analyst in our Actuarial & Research Services Department. I also wish to express my thanks to other NIB staff, the Central Bank of The Bahamas and the Government's Department of Statistics for their assistance.

Sincerely,

Derek M. Osborne, FSA  
Actuary

## E.2 Short-term Benefits Branch

Table E.3 Sickness Benefit Experience, 2002-2006

Year Ended	# Claims Awarded per 1,000 Insureds	Average Benefit Duration (days)	Average Weekly Benefit	Cost as a % of Insurable Wages
2002	144	16.1	194.23	0.63%
2003	178	13.7	194.13	0.68%
2004	157	14.6	199.93	0.66%
2005	151	14.6	201.05	0.62%
2006	152	14.8	202.71	0.61%

Table E.4 Maternity Benefit Experience, 2002-2006

Year Ended	# Claims Awarded per 1,000 Insureds	Average Benefit Duration (days)	Average Weekly Benefit	Cost as a % of Insurable Wages
2002	24	68.4	213.98	0.37%
2003	22	69.1	216.41	0.36%
2004	22	68.9	217.82	0.47%
2005	21	68.7	224.76	0.38%
2006	20	71.0	223.35	0.36%

Table E.5 Maternity Grant & Funeral Benefit Experience, 2002-2006

Year Ended	# Births	# Claims Awarded	Cost as a % of Insurable Wages	# Deaths	# Claims Awarded	Cost as a % of Insurable Wages
2002	5,216	3,242	0.09%	1,827	1,130	0.12%
2003	5,054	3,070	0.08%	1,720	1,167	0.12%
2004	5,154	3,178	0.09%	1,766	1,195	0.12%
2005	5,548	3,286	0.08%	1,924	1,247	0.12%
2006		3,357	0.08%		1,182	0.10%

Table E.6 Administrative & Total Expenditure - STB Branch

Year Ended	AS a % of Insurable Wages	
	Admin. & Other Expenditure	Total Branch Expenditure
2002	0.25%	1.45%
2003	0.27%	1.52%
2004	0.33%	1.67%
2005	0.29%	1.50%
2006	0.34%	1.49%

## Appendix E Benefit Experience & Branch Analysis

### E.1 Long-term Benefits Branch

Table E.1 LTB Branch Expenditure As % of Insurable Wages, 2002 - 2006

	2002	2003	2004	2005	2006
<b>Benefits</b>					
Retirement	3.09%	3.26%	3.47%	3.37%	3.28%
Invalidity	0.50%	0.53%	0.54%	0.52%	0.52%
Survivors	0.63%	0.66%	0.67%	0.64%	0.61%
<b>Assistance</b>					
OANCP	0.60%	0.57%	0.52%	0.44%	0.38%
Invalidity	0.48%	0.47%	0.46%	0.42%	0.38%
Survivors	0.13%	0.13%	0.11%	0.10%	0.08%
<b>Administrative &amp; Other Expenses</b>	1.11%	1.25%	1.54%	1.46%	1.91%
<b>Total</b>	<b>6.55%</b>	<b>6.87%</b>	<b>7.30%</b>	<b>6.94%</b>	<b>7.17%</b>
<b>Total Benefits</b> (millions of \$'s)	<b>78.3</b>	<b>81.3</b>	<b>85.8</b>	<b>88.4</b>	<b>92.9</b>

Table E.2 Pensions In Payment, Awarded & Terminated, 2002- 2006

Pension Type	Paid in Dec 2001	Awarded 2002 - 2006	Terminated 2002 - 2006	Paid in Dec 2006	Average Monthly Pension	
					Dec. 2001	Dec. 2006
<b>Benefits</b>						
Retirement	10,687	5,564	2,382	13,869	\$316	\$349
Invalidity	1,716	1,007	637	2,086	\$308	\$339
Survivors	2,946	1,949	1,370	3,525	\$229	\$239
<b>Assistance</b>						
OANCP	3,701	629	1,513	2,817	\$200	\$200
Invalidity	2,769	679	689	2,759	\$200	\$200
Survivors	1,018	230	531	717	\$151	\$155

Figures for Survivors pensions represent the number of claims not the number of pensioners.

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## Abbreviations and Acronyms

BoB	Bank Of The Bahamas
GDP	Gross Domestic Product
IB	Industrial Benefits
ILO	International Labour Office
IPS	Investment Policy Statement
LTB	Long-term Benefits
NI	National Insurance
NIB	National Insurance Board
NIF	National Insurance Fund
PAYG	Pay-as-you-go
STB	Short-term Benefits
TFR	Total Fertility Rate
VERP	Voluntary Early Retirement Program

## Appendix D Income, Expenditure & Reserves, 2002–2006

	(Expressed in Thousands of \$'s)				
	2002	2003	2004	2005	2006
<b>Income</b>					
Contribution Income	121,500	122,038	125,521	135,866	149,021
Investment Income	63,207	67,677	64,467	69,852	71,570
Other Income	4,985	5,035	5,122	5,060	5,142
<b>Total Income</b>	<b>189,692</b>	<b>194,750</b>	<b>195,110</b>	<b>210,778</b>	<b>225,733</b>
<b>Expenditure</b>					
Sickness Benefit	9,055	9,808	9,759	10,034	10,788
Maternity Benefit	5,284	5,261	7,009	6,173	6,441
Maternity Grant	1,261	1,227	1,286	1,367	1,397
Funeral Benefit	1,737	1,736	1,807	1,921	1,804
Sickness Assistance	25	22	24	11	31
Retirement Benefit	44,544	47,175	51,611	54,326	57,905
Invalidity Benefit	7,179	7,692	8,071	8,343	9,183
Survivor's Benefit	9,095	9,533	9,903	10,305	10,804
Old-Age Assistance	8,669	8,212	7,743	7,103	6,787
Invalidity Assistance	6,891	6,838	6,787	6,748	6,767
Survivor's Assistance	1,944	1,813	1,643	1,563	1,469
Medical Care	4,692	3,404	5,075	5,459	6,886
Injury Benefit	1,037	989	1,071	1,352	1,366
Disablement Benefit	1,907	2,059	2,237	2,550	2,827
Death Benefit	310	308	286	274	287
Disablement Grant	115	113	111	85	74
<b>Total Benefit</b>	<b>103,746</b>	<b>106,190</b>	<b>114,423</b>	<b>117,614</b>	<b>124,816</b>
Administrative Expenses	21,384	23,542	29,043	27,522	36,024
Admin. Exp. - Med Branch	1,059	1,152	1,133	1,265	1,530
Other Expenses	452	696	(8,163)	0	(286)
<b>Total Admin. &amp; Other Expenses</b>	<b>22,895</b>	<b>25,390</b>	<b>22,013</b>	<b>28,787</b>	<b>37,268</b>
<b>Total Expenditure</b>	<b>126,641</b>	<b>131,580</b>	<b>136,436</b>	<b>146,401</b>	<b>162,084</b>
<b>Surplus/(Deficit)</b>	<b>63,051</b>	<b>63,170</b>	<b>58,674</b>	<b>64,377</b>	<b>63,649</b>
<b>Reserves at End of Year</b>	<b>1,162,524</b>	<b>1,226,518</b>	<b>1,285,651</b>	<b>1,351,143</b>	<b>1,415,290</b>

Table C.7. Projected Benefit Expenditure– *Low Dependency Scenario* (millions of \$'s)

Year	Pensions, Grants & Benefits						Benefits as a % of:	
	Retirement	Invalidity	Survivors	Assistance Pensions	Short-term Industrial	Industrial	Insurable Wages	GDP
2006	57.9	9.2	10.8	15.0	20.5	11.4	7.1%	1.9%
2007	67.2	9.8	12.0	16.0	21.3	12.0	7.3%	2.0%
2008	72.7	10.2	13.2	14.9	22.5	13.1	7.3%	2.0%
2009	79.1	10.6	14.3	14.4	28.9	15.4	6.2%	2.1%
2010	86.4	11.1	15.5	14.0	31.1	16.4	6.2%	2.2%
2011	95.2	11.8	16.9	13.7	32.8	17.4	6.4%	2.2%
2012	106.4	12.7	18.3	13.5	34.6	18.4	6.6%	2.3%
2016	169.2	17.5	24.5	13.3	42.5	23.3	7.7%	2.7%
2026	484.1	35.8	44.0	13.8	65.3	38.8	12.0%	4.1%
2036	1,048.4	60.0	73.8	14.8	95.0	59.6	16.7%	5.7%
2046	1,776.1	92.6	118.3	17.6	137.2	88.8	19.5%	6.7%
2056	2,855.9	140.1	179.6	20.8	193.7	129.3	22.3%	7.5%
2066	4,317.5	195.2	258.0	24.9	274.4	183.8	24.0%	7.9%

Table C.8. Projected Contributors & Pensioners, *Low Dependency Scenario*

Year	# of Contributors	# of Pensioners					Total # of Pensioners	Ratio of Contributors to Pensioners
		Retirement	Invalidity	Survivors	Assistance	Death & Disablement		
2006	134,112	13,896	2,090	6,092	5,940	573	28,591	4.7
2007	137,553	14,464	2,116	6,371	5,787	584	29,323	4.7
2008	143,540	15,075	2,148	6,684	5,397	596	29,900	4.8
2009	149,825	15,760	2,194	6,979	5,086	610	30,629	4.9
2010	156,388	16,495	2,255	7,280	4,831	629	31,490	5.0
2011	159,287	17,285	2,330	7,558	4,620	650	32,443	4.9
2012	162,138	18,219	2,416	7,799	4,443	673	33,550	4.8
2016	173,165	22,814	2,838	8,409	3,953	782	38,795	4.5
2026	187,904	40,625	4,042	9,583	3,617	1,085	58,952	3.2
2036	192,727	60,656	4,866	10,660	3,433	1,296	80,911	2.4
2046	198,070	73,653	5,387	11,501	3,195	1,431	95,166	2.1
2056	197,692	85,105	5,853	12,163	2,951	1,551	107,623	1.8
2066	195,941	92,661	5,927	12,384	2,756	1,571	115,299	1.7

## Introduction

The Bahamas National Insurance Board (NIB) began operations in October 1974. Employed and self-employed persons are covered for three main types of social security benefits – short-term, long-term and industrial (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 are invested in various types of securities.

This is the report of the 8<sup>th</sup> Actuarial Review of National Insurance Fund and in accordance with Section 48 of The National Insurance Act, 1972, is being prepared five years after the 7<sup>th</sup> Actuarial Review.

The main purpose of periodic actuarial reviews is to determine if the National Insurance system in The Bahamas 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 National Insurance Act, periodic actuarial reviews should be conducted. The next actuarial review of the National Insurance Fund is due as at December 31, 2011.

## Executive Summary

Actuarial reviews of the National Insurance Fund provide governments, workers, employers and pensioners with a comprehensive assessment of the current and projected state of the Bahamas' primary social security system. They also provide policy recommendations for changes designed to enhance overall system relevance and financial viability. With pension promises extending well into the future, it is important that proactive steps are taken to ensure that appropriate responses to changing socio-economic conditions are made.

Government interference where there should be none and the failure to intervene when warranted, continue to negatively affect the proper functioning of the National Insurance Board. By either limiting the possibility for efficient and effective administration or being reluctant to implement recommended changes other than those that enhance benefits, decisions and actions of policymakers threaten the ongoing relevance and future sustainability of the Fund.

In 2003, the Government established the Social Security Reform Commission which reviewed the findings and recommendations of the 7<sup>th</sup> Actuarial Review. The Commission consulted with stakeholders throughout The Bahamas and completed its report in 2005. The report's extensive list of recommendations covered suggestions for broadening National Insurance's scope, enhancing benefit equity and relevance, reducing the cost of operations and enhancing long-term sustainability. As of March 2008, the Commission's report has not been made public and no contribution or benefit changes emanating from that report or the 7<sup>th</sup> Actuarial Review have been made. The recommendations regarding placing some investments overseas and with local private investment managers have been adopted.

In each of the years 2002 to 2006, contribution income was insufficient to meet total expenditure. However, the Fund continued to realise annual surpluses due to the income generated from invested assets. In general, Fund performance fell short of the projections of the *Intermediate* scenario of the 7<sup>th</sup> Actuarial Review, with the 2006 year-end reserve of \$1.415 billion being closer to the projected reserves of the *Pessimistic* scenario. The factors that continue to negatively impact National Insurance Fund finances are low compliance among self-employed persons and small businesses, the late payment of contributions by most employers, declining investment returns and excessive administrative costs.

### Main Findings

This report's assessment of National Insurance policy and design indicators suggests that current contribution and benefit provisions provide a fair level of income protection to most workers and pensioners, with the low wage ceiling being the main factor limiting a more appropriate level of protection. (Section 2.2) Extensive reforms aimed at enhancing both system relevance and financial sustainability are discussed and recommended in this report.

For this report, three sets of 60-year projections of the Bahamas' population and National Insurance Fund finances have been performed so that a range of reasonable prospects for the Fund may be assessed. These projections are based on there being no changes to the current contribution rate or

Table C.5. Projected Bahamas Population, *Low Dependency Scenario*

Year	Total	Age 0 - 15	Age 16 - 64	Age 60 & over	Ratio of Persons 16-64 To 65 & Over
2000	303,611	95,146	192,617	15,848	12.2
2006	329,288	93,538	215,324	20,426	10.5
2011	349,684	89,084	235,878	24,722	9.5
2016	369,213	87,619	251,706	29,887	8.4
2021	387,713	88,922	261,923	36,867	7.1
2026	404,898	90,562	267,890	46,446	5.8
2031	419,849	91,417	271,056	57,376	4.7
2036	432,064	91,052	274,530	66,482	4.1
2046	449,128	88,594	282,329	78,205	3.6
2056	459,560	89,121	282,403	88,036	3.2
2066	465,396	89,526	279,206	96,664	2.9

Table C.6. Projected Cash Flows & Reserve, *Low Dependency Scenario* (millions of \$'s)

Year	Cash Inflows				Cash Outflows				Reserves		
	Contribution Income	Investment Income	Other Income	Total	Benefits	Admin. Expenses	Other Expenses	Total	Surplus/ (Deficit)	End of Year	# of times current year's expenditure
2006	149.0	71.6	5.1	225.7	124.8	36.0	1.2	162.1	63.6	1,415	8.7
2007	160.2	70.6	5.0	235.9	138.4	31.0	1.5	170.9	64.9	1,480	8.7
2008	168.3	77.6	5.0	250.9	146.5	31.0	1.6	179.1	71.8	1,552	8.7
2009	220.1	86.1	5.0	311.2	162.6	32.6	2.1	197.4	113.9	1,666	8.4
2010	237.1	92.5	5.0	334.5	174.6	33.9	2.2	210.8	123.8	1,790	8.5
2011	249.3	99.2	5.0	353.6	187.8	34.3	2.4	224.5	129.1	1,919	8.5
2012	262.0	106.2	5.0	373.3	204.0	34.7	2.5	241.1	132.2	2,051	8.5
2016	318.7	134.7	5.0	458.4	290.2	35.4	3.0	328.6	129.8	2,581	7.9
2026	479.2	165.3	5.0	649.5	682.8	45.5	4.5	732.9	(83.4)	3,044	4.2
2036	682.7	(40.4)	5.0	647.3	1,354.4	64.8	6.5	1,425.7	(778.4)	(1,149)	(0.8)
2046	964.8	(787.0)	5.0	182.9	2,233.8	91.6	9.2	2,334.6	(2,151.7)	(15,787)	(6.8)
2056	1,333.3	(2,591.2)	5.0	(1,252.9)	3,523.5	126.5	12.7	3,662.7	(4,915.7)	(50,883)	(13.9)
2066	1,850.8	(6,484.3)	5.0	(4,628.5)	5,259.7	175.6	17.6	5,452.9	(10,081.4)	(126,201)	(23.1)

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– High Dependency Scenario** (millions of \$'s)

Year	Pensions, Grants & Benefits						Benefits as a % of:	
	Retirement	Invalidity	Survivors	Assistance Pensions	Short-term Industrial		Insurable Wages	GDP
2006	57.9	9.2	10.8	15.0	20.5	11.4	7.1%	1.9%
2007	67.3	9.9	11.9	16.0	21.2	12.0	7.3%	2.0%
2008	73.6	10.3	13.0	15.0	21.8	12.8	7.6%	2.0%
2009	81.0	10.8	14.1	14.5	26.7	14.8	6.7%	2.1%
2010	89.4	11.5	15.2	14.2	28.2	15.3	6.8%	2.2%
2011	99.1	12.2	16.4	13.9	29.7	16.2	7.0%	2.2%
2012	111.2	13.2	17.6	13.7	31.3	17.2	7.3%	2.3%
2016	178.1	18.3	22.6	13.5	38.2	21.7	8.6%	2.7%
2026	524.6	38.7	38.5	14.1	59.3	36.9	13.8%	4.3%
2036	1,175.6	67.7	64.2	15.1	88.3	58.4	19.6%	6.2%
2046	2,053.4	108.4	106.5	18.1	129.7	89.3	23.2%	7.5%
2056	3,393.9	171.4	167.2	21.4	182.8	132.5	27.3%	8.6%
2066	5,364.4	247.6	245.2	25.6	255.9	189.2	30.9%	9.5%

**Table C.4. Projected Contributors & Pensioners, High Dependency Scenario**

Year	# of Contributors	# of Pensioners					Total # of Pensioners	Ratio of Contributors to Pensioners
		Retirement	Invalidity	Survivors	Assistance	Death & Disablement		
2006	134,112	13,896	2,090	6,092	5,940	573	28,591	4.7
2007	136,647	14,499	2,127	6,315	5,797	586	29,324	4.7
2008	138,876	15,178	2,170	6,569	5,426	600	29,942	4.6
2009	141,177	15,969	2,226	6,794	5,128	616	30,733	4.6
2010	143,518	16,822	2,295	7,010	4,882	635	31,644	4.5
2011	145,585	17,704	2,373	7,189	4,679	656	32,601	4.5
2012	147,588	18,700	2,459	7,315	4,507	678	33,660	4.4
2016	155,049	23,405	2,864	7,417	4,028	776	38,490	4.0
2026	164,490	41,639	4,067	7,593	3,694	1,067	58,060	2.8
2036	166,398	61,991	4,966	8,114	3,512	1,289	79,872	2.1
2046	166,651	74,738	5,549	8,650	3,281	1,436	93,655	1.8
2056	158,689	85,340	6,060	8,951	3,039	1,562	104,952	1.5
2066	146,688	92,817	6,065	8,837	2,836	1,562	112,118	1.3

benefit rules. Given the uncertainty in projecting such an extended period the timing of certain events and the rates that will apply have been presented as ranges.

1. If the wage ceiling is increased to \$600, contribution income will once again be sufficient to meet total expenditure until between 2011 and 2015.
2. Total expenditure will first exceed total income between 2019 and 2024 when National Insurance reserves are projected to peak at between \$2.2 billion and \$3.2 billion.
3. The Fund will be depleted between 2029 and 2035.
4. The average long-term cost of benefits over the next 60 years, often referred to as the general average premium, is between 15.2% and 19.0%.
5. The pay-as-you-go rate, or the rate required to produce just enough contribution income to meet total expenditure in 2066, will be between 24.8% and 32.2%.
6. The number of National Insurance contributors per pensioner is expected to decline from 4.7 in 2006 to between 1.3 and 1.7 in 2066.
7. A significant reduction in long-term costs of almost 2% of insurable wages could be realised if the recommended changes to Retirement benefit provisions are made.

### Recommendations

The following recommendations aimed at enhancing the Fund's relevance and long-term sustainability have been made throughout the report.

1. Publish the report of the Social Security Reform Commission.
2. Increase the ceiling on insurable wages to \$600 per week and then annually thereafter in line with estimated national wage increases. (Section 5.1.1)
3. Adjust all pensions and other benefit amounts annually in line with changes in the Retail Price Index. (Section 5.1.1)
4. Expand the base for wages covered by NIB to include all wages earned from multiple employment, tips and gratuities included in the pay cheques of hospitality sector workers, and all wages up to the ceiling paid to pensionable civil servants. (Section 5.1.2)
5. Make the many changes to benefit provisions discussed and listed in Table 5.1 so that greater equity, consistency and relevance is brought to the entire NI benefits package. (Section 5.1)
6. Substantially reduce administrative costs. (Section 5.2)
7. Establish and adhere to an effective public sector governance model and amend relevant sections of the National Insurance Act to:
  - (i) Require that persons appointed Board members to represent worker and employer organisations are nominated by these organisations, and
  - (ii) Limit the authority afforded the Minister regarding directions given to the Board to matters of policy only. (Section 5.3)

8. Strengthen the penalties for late or non-payment of contributions and introduce new legal measures, such as garnishing. (Section 5.4.1)
9. Revise the allocation of contribution income between benefit branches and transfer reserves so that branches are appropriately funded. Also, the Death and Disablement reserve fund should be eliminated. (Section 5.4.2)
10. If new benefits, such as health or unemployment, are added to the National Insurance benefits package, adequate safeguards that protect the National Insurance Fund should be put in place. (Section 5.5)
11. Regarding investments, it is recommended that there be no further increase in the portion of assets invested in Bahamas Government and statutory body instruments while the portion of the Fund invested overseas should be gradually increased to around 20%. (Section 1.6)

Enhancing long-term sustainability can be achieved by reducing long-term costs and/or increasing the contribution rate. Although expenditure continues to exceed contribution income and a 1% contribution rate increase can be justified, no adjustment is recommended at this time. Instead, immediate steps aimed at improving contribution collections, reducing administrative costs, bringing greater diversification to Fund investments, changing several benefit provisions and establishing a framework for good governance practices should be taken first. Then once appropriate measures that improve performance have been put in place and suitable opportunities for investing surplus funds exist, a review of the contribution rate could be made prior to the next actuarial review.

Increased attention is being brought to the challenges facing social security funds around the world. There is growing scepticism in The Bahamas regarding both the adequacy of future National Insurance pensions and the ability of the Fund to meet its future commitments without having to charge exorbitant rates. In fact, most employer-sponsored pension plans, new and old, do not factor National Insurance benefits into their design. It is therefore imperative that the Board implement the changes suggested in this report and adequately educate workers and employers on the income replacement objectives of National Insurance pensions. The Government should also create innovative ways to encourage employers and individuals to create pension arrangements that compliment National Insurance pensions.

The Bahamas appears set to benefit from significant amounts of foreign direct investment in the coming years. If sustained higher levels of real economic growth are realised, the National Insurance Fund will benefit from expanding employment and growing wages. A strong and growing economy is considered the first ingredient for the long-term success of a social security system. However, significant improvements to sustainability cannot be brought to the Fund unless changes are also made to both benefit provisions and the contribution rate, and the sooner these changes are made, the greater the impact on Fund finances will be. A well designed system, therefore, is the second ingredient necessary for success. The coverage, contribution and benefit reforms recommended in this report seek to greatly enhance system design.

The third ingredient for success is an efficient and accurate administrative system. Much improvement is required in this regard to reduce operating costs, improve compliance, and reduce the time it takes to process pension claims.

## Appendix C Projection Results – Alternate Scenarios

**Table C.1. Projected Bahamas Population, High Dependency Scenario**

Year	Total	Age 0 - 15	Age 16 - 64	Age 65 & over	Ratio of Persons 16-64 To 65 & Over
2000	303,611	95,146	192,617	15,848	12.2
2006	327,788	93,045	214,214	20,529	10.4
2011	345,074	86,613	233,354	25,107	9.3
2016	360,039	81,354	247,946	30,739	8.1
2021	373,047	77,835	256,795	38,417	6.7
2026	384,695	75,562	260,173	48,960	5.3
2031	394,167	74,142	258,920	61,105	4.2
2036	400,641	72,555	256,613	71,473	3.6
2046	404,082	66,349	252,695	85,037	3.0
2056	397,466	61,400	240,564	95,502	2.5
2066	384,488	58,122	221,672	104,695	2.1

**Table C.2. Projected Cash Flows & Reserve, High Dependency Scenario (millions of \$'s)**

Year	Cash Inflows				Cash Outflows				Reserves		
	Contribution Income	Investment Income	Other Income	Total	Benefits	Admin. Expenses	Other Expenses	Total	Surplus/ (Deficit)	End of Year	# of times current year's expenditure
2006	149.0	71.6	5.1	225.7	124.8	36.0	1.2	162.1	63.6	1,415	8.7
2007	159.3	70.6	5.0	235.0	138.4	31.0	1.5	170.9	64.1	1,479	8.7
2008	163.2	70.0	5.0	238.2	146.5	31.0	1.5	179.1	59.1	1,538	8.6
2009	204.0	69.6	5.0	278.6	161.9	30.2	1.9	194.1	84.5	1,623	8.4
2010	214.7	73.3	5.0	293.0	173.7	31.7	2.0	207.4	85.6	1,709	8.2
2011	225.6	77.1	5.0	307.7	187.5	33.2	2.1	222.9	84.8	1,793	8.0
2012	236.9	80.7	5.0	322.6	204.1	34.7	2.2	241.1	81.5	1,875	7.8
2016	287.1	92.6	5.0	384.6	292.4	41.4	2.7	336.5	48.1	2,128	6.3
2026	435.0	58.2	5.0	498.2	712.9	61.9	4.1	779.0	(280.8)	1,181	1.5
2036	633.9	(236.7)	5.0	402.1	1,472.1	90.2	6.0	1,568.4	(1,166.3)	(5,968)	(3.8)
2046	911.5	(1,078.3)	5.0	(161.9)	2,508.8	129.7	8.6	2,647.1	(2,809.0)	(25,916)	(9.8)
2056	1,258.2	(2,923.9)	5.0	(1,660.7)	4,073.5	179.1	11.9	4,264.5	(5,925.2)	(69,416)	(16.3)
2066	1,725.7	(6,666.6)	5.0	(4,935.9)	6,333.8	245.6	16.4	6,595.9	(11,531.8)	(157,270)	(23.8)

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

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

**Table B.8. Rates of Entry Into Invalidity Per 1,000 Insureds**

Age	Males	Females
17	-	-
22	0.096	0.050
27	0.408	0.262
32	0.596	0.446
37	1.050	0.923
42	1.085	1.044
47	1.921	1.872
52	2.516	3.178
57	6.210	7.507
62	6.721	7.889

Table B.9, shows the assumed probability of Survivor benefit claims and the average number of eligible dependant children following the death of an insured person.

**Table B.9. Survivor Characteristics**

Age	Male Deceased		Female Deceased	
	Probability of Eligible Spouse	Avg # of Eligible Children	Probability of Eligible Spouse	Avg # of Eligible Children
17	0%	-	0%	-
22	0%	-	0%	-
27	4%	0.6	5%	1.0
32	13%	0.8	10%	1.0
37	13%	0.8	9%	1.0
42	20%	0.9	11%	0.8
47	20%	0.8	10%	0.7
52	20%	0.6	6%	0.6
57	22%	0.4	3%	0.4
62	25%	0.3	2%	0.2
67	20%	0.2	1%	0.1
72	19%	0.1	1%	-
77	15%	0.1	1%	-
82	17%	0.0	0%	-
87	9%	-	0%	-

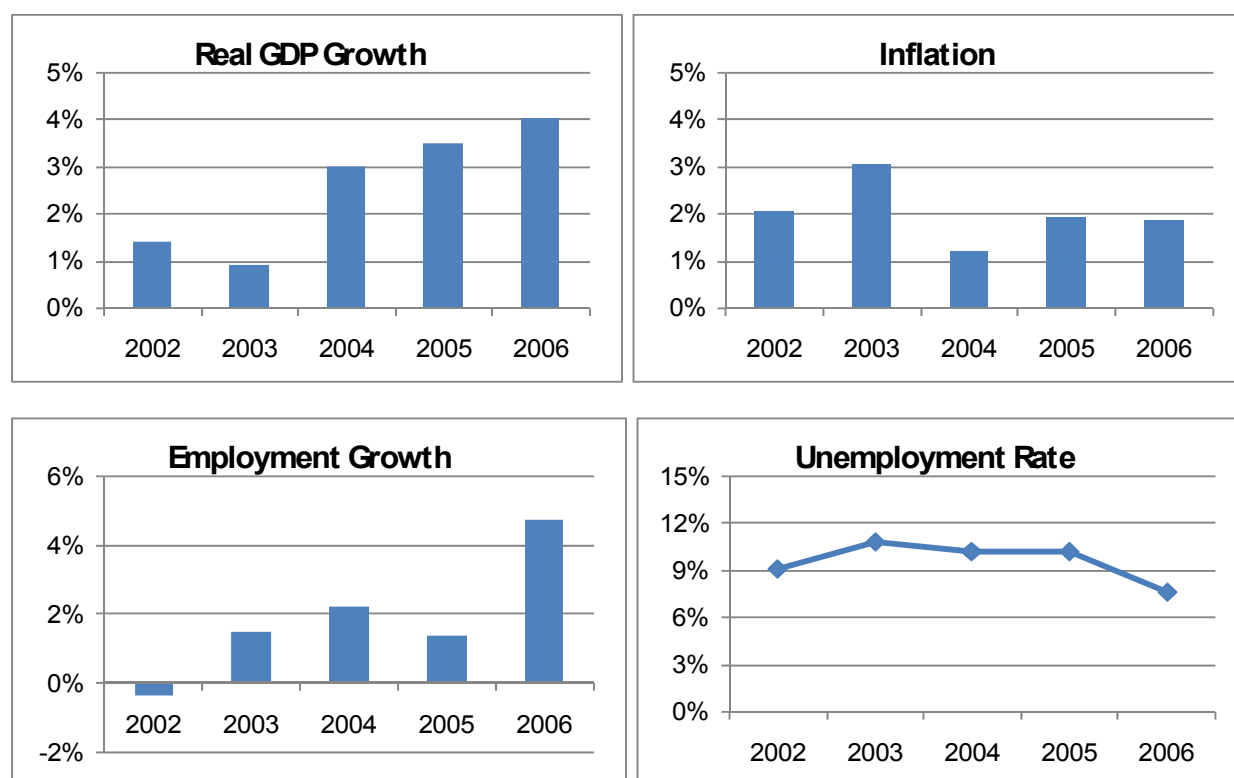
Unlike other government programs that provide goods and services for current consumption, some social security promises will not be delivered until decades from now. As a result, the actions and decisions of policymakers today - both good and bad – will determine whether or not the National Insurance system will be relevant and sustainable for future generations. The fourth and perhaps the most important ingredient for success, therefore, is honest and responsible government. For all public sector organisations, good governance should focus on two key requirements - performance as it relates to delivering on its promises and conformance with laws and public expectations. The introduction and adherence to a governance structure that promotes these two requirements, therefore, could go a long way to ensuring that the Board achieves its overall objectives in a manner that enhances public confidence in the National Insurance program.

## Chapter 1 Activities & Experience Since The 7<sup>th</sup> Actuarial Review

### 1.1 Economic Experience

National Insurance finances, especially contribution collections, are linked to economic performance and labour market changes. As shown in the charts in Figure 1.1, real GDP growth was positive in all years averaging 2.6% between 2002 and 2006 while inflation was quite low with an annual average of 2.0%. Employment levels grew in four of the five years with a significant increase in 2006 resulting in a marked decline in the unemployment rate.

Figure 1.1. Key Economic Indicators, 2002 to 2006



### 1.2 Amendments To Act & Regulations

The 7<sup>th</sup> Actuarial Review of the National Insurance Fund was conducted as of December 31<sup>st</sup>, 2001. During the period 2002 to 2006, one set of amendments to Maternity benefits Regulations was enacted. The changes that materially impact National Insurance finances were:

- The maternity benefit percentage was increased from 60% to 66<sup>2</sup>/<sub>3</sub>%. This change provided for full income replacement up to the wage ceiling following a reduction in the percentage of insurable wages that the employer is obligated to pay from 40% to 33<sup>1</sup>/<sub>3</sub>%.

Table B.6. Pensions in Payment - December 2006

Age	Old-Age Benefit		Invalidity Benefit		Survivors Benefits		Disablement & Death Benefits		Non-Contributory Pensions	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0 - 4	-	-	-	-	61	71	4	-	10	14
5 - 9	-	-	-	-	237	239	3	6	46	47
10 - 14	-	-	-	-	592	569	14	14	172	180
15 - 19	-	-	-	-	447	479	17	14	208	165
20 - 24	-	-	-	-	27	48	1	-	113	79
25 - 29	-	-	10	3	-	11	8	8	143	114
30 - 34	-	-	20	17	5	45	25	17	151	127
35 - 39	-	-	46	37	19	88	46	34	161	149
40 - 44	-	-	70	62	30	167	61	37	151	166
45 - 49	-	-	98	89	41	202	39	38	166	173
50 - 54	-	-	113	139	27	252	27	38	119	107
55 - 59	-	-	139	178	18	266	32	39	75	105
60 - 64	987	1,439	147	287	7	285	19	32	69	138
65 - 69	1,933	2,256	130	239	13	285	13	23	189	376
70 - 74	1,705	1,765	72	107	5	274	6	10	258	527
75 - 79	990	1,095	26	55	4	182	9	4	180	469
80 - 84	500	557	2	4	2	139	-	3	149	422
85 - 89	220	278	-	-	-	68	1	1	117	352
90 - 94	68	74	-	-	-	25	1	-	61	198
95 - 99	12	17	-	-	-	1	-	-	23	90
<b># of Pensioners</b>	<b>6,415</b>	<b>7,481</b>	<b>873</b>	<b>1,217</b>	<b>1,535</b>	<b>3,696</b>	<b>326</b>	<b>318</b>	<b>2,561</b>	<b>3,998</b>
<b>Avg Monthly Pension</b>	<b>\$ 383</b>	<b>\$ 321</b>	<b>\$ 352</b>	<b>\$ 329</b>	<b>\$ 113</b>	<b>\$ 151</b>	<b>\$ 344</b>	<b>\$ 241</b>	<b>\$ 186</b>	<b>\$ 186</b>

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.7. Density Of Contributions

Age	Males	Females
17	33%	28%
22	71%	69%
27	77%	81%
32	81%	87%
37	84%	90%
42	85%	93%
47	85%	94%
52	87%	94%
57	88%	94%
62	86%	92%

**Table B.5 2006 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	3,535	2,911	875	767	0.4	0.2
20 - 24	8,319	8,054	1,118	1,021	2.7	2.3
25 - 29	8,820	9,161	1,278	1,226	5.5	5.2
30 - 34	9,401	9,875	1,341	1,306	8.3	8.1
35 - 39	9,147	9,972	1,410	1,341	11.0	11.5
40 - 44	8,664	9,580	1,433	1,366	13.1	14.1
45 - 49	6,974	7,906	1,445	1,378	15.0	15.7
50 - 54	5,247	5,538	1,451	1,415	16.6	18.1
55 - 59	3,478	3,570	1,477	1,401	18.9	19.2
60 - 64	2,083	1,952	1,449	1,346	19.0	19.1
65+	1,235	844	1,296	1,018	17.5	17.8
<b>All Ages</b>	<b>66,903</b>	<b>69,363</b>	<b>1,331</b>	<b>1,272</b>	<b>10.2</b>	<b>10.7</b>

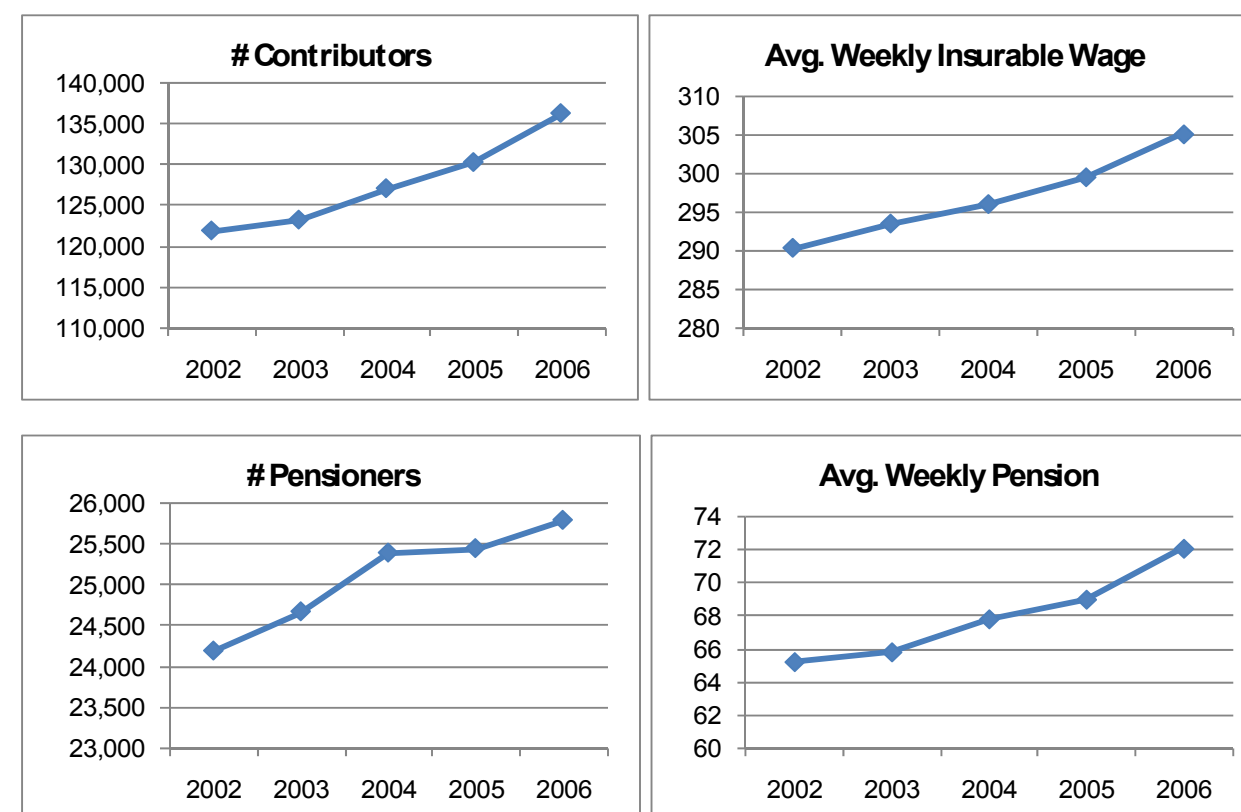
➤ A spouse's contributions may be used to qualify for a Maternity grant where the mother fails to qualify.

Several amendments to the National Insurance Act and Regulations were also made in 2005 as part of the Miscellaneous Written Laws (Rectification) Order, 2005. These changes, which were part of a comprehensive review of all laws of The Bahamas, had no financial implications on the Fund.

### 1.3 National Insurance Experience

In line with recent economic patterns, the number of contributing insured persons and their average wages increased each year. For pensions, which account for 74% of total benefit expenditure, changes to the number of pensioners and their average pension have greatest influence on year-over-year changes to benefit expenditure. The charts in Figure 1.2 highlight recent changes in the number of contributors and their average insurable wage and the number of pensioners and the average overall pension. There were no adjustments to the wage ceiling or pension rates during the period 2002 to 2006.

**Figure 1.2. Contributors & Pensioners, 2002 to 2006**



Note: The # of pensioners shown is the number of payments made. For Survivors benefits, one payment could be made for more than one person.

The following table provides summary income and expenditure amounts for years 2002 to 2006. A more detailed version of the National Insurance finances for these years may be found in Appendix D.

**Table 1.1 Summary of Finances, 2002 – 2006 (millions of \$'s)**

	2002	2003	2004	2005	2006
<b>Income</b>					
Contributions	121.5	122.0	125.5	135.9	149.0
Investment	63.2	67.7	64.5	69.9	71.6
Other	5.0	5.0	5.1	5.1	5.1
<b>Total</b>	<b>189.7</b>	<b>194.8</b>	<b>195.1</b>	<b>210.8</b>	<b>225.7</b>
<b>Expenditure</b>					
Benefits	103.7	106.2	114.4	117.6	124.8
Administrative	22.4	24.7	30.2	28.8	37.6
Other	0.5	0.7	(8.2)	0.0	(0.3)
<b>Total</b>	<b>126.6</b>	<b>131.6</b>	<b>136.4</b>	<b>146.4</b>	<b>162.1</b>
<b>Surplus</b>	<b>63.1</b>	<b>63.2</b>	<b>58.7</b>	<b>64.4</b>	<b>63.6</b>
<b>Benefit Reserves</b>	<b>1,162.5</b>	<b>1,226.5</b>	<b>1,285.7</b>	<b>1,351.1</b>	<b>1,415.3</b>

Notes: Totals may be off due to rounding.

Even without a contribution rate or ceiling adjustment, contribution income would ordinarily be expected to increase gradually. With improved economic activity and better collections efforts, significant contribution growth was realised in 2005 and 2006. For benefit expenditure, the impact of retroactive payments related to the amendments to Maternity benefits resulted in a larger than usual increase in 2004 while higher Short-term and Industrial benefit costs led to the above-average rise in 2006.

A large portion of the increase in administrative costs in 2004 and 2006 was due to a Voluntary Early Retirement Package that was offered to older and long-serving employees. Some 89 employees accepted the package. While these special payments were expected to reduce payroll costs in future years, increased hiring in late 2006 and early 2007 appears to have eliminated most of the long-term savings that were expected from the staff reduction exercise.

## 1.4 Benefit Branch Experience & Reserves

NIB administers three major types of social security benefits – long-term or pensions, short-term benefits and industrial (employment injury) benefits. While the summary of National Insurance finances presented in the previous section shows total income and expenditure, internal accounting procedures separate finances into four branches – one each for the three groups of benefits and a

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 increase in labour productivity as it is expected that wages will adjust to efficiency levels over time. Such increases are assumed to be 0.8% for the High Dependency scenario, 1.0% for Best Estimate and 1.2% for the Low Dependency Scenario. Actual projection assumptions may be found in Table 4.1.

## B.2 Projection of National Insurance Income & Expenditure

This actuarial review addresses all National Insurance Fund revenue and expenditure items. For Short-term and Employment Injury benefits, income and expenditure are projected as a percentage of insurable earnings. Projections of pensions are performed following a year-by-year cohort methodology. For each year up to 2066, 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 earnings, 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 plan experience and applied to the population entitled to benefits. Investment income is based on the assumed yield on the beginning-of-year reserve and net cash flow in the year. National Insurance'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 National Insurance Population Data and Assumptions

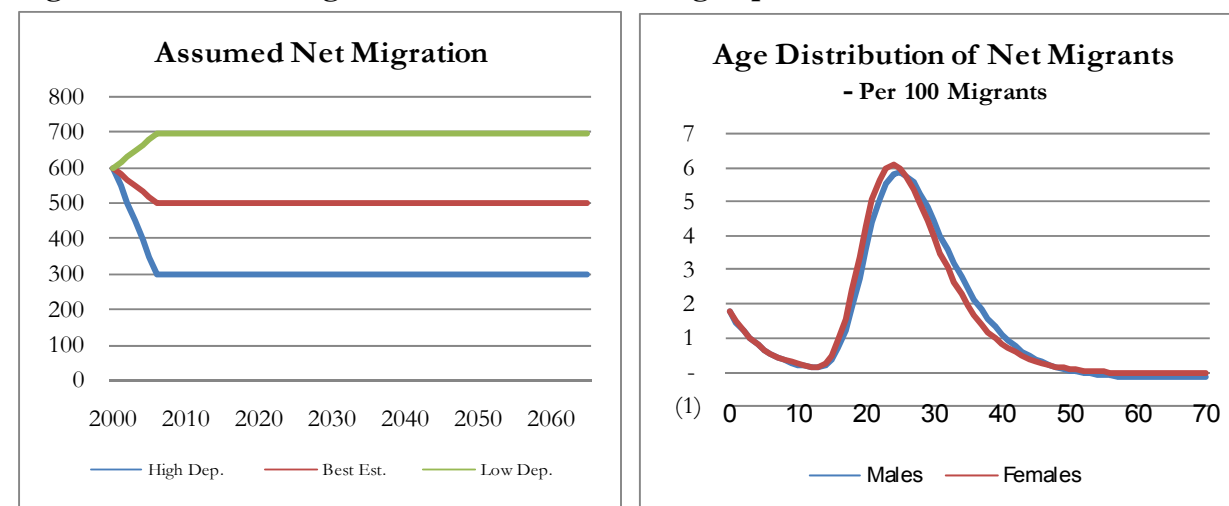
The data required for the valuation of the National Insurance Fund is extensive. As of December 31<sup>st</sup>, 2006, required data includes the insured population by active and inactive status, the distribution of insurable wages among contributors, the distribution of paid and credited contributions 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 National Insurance specific input data and the key assumptions used in this report are provided in tables B.5 through B.9.

**Figures B.1. Net Immigration – Total Annual & Age-Specific Rates**



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. Between 2000 and 2030, age-specific labour force participation rates for persons over 0 are assumed to increase to the extent that they reach the levels that currently exist for persons five years younger. That is, participation rates for a 60 year old in 2030 will be those of 55 years olds in 2000. Table B.4 below shows the assumed age-specific labour force participation rates in 2006 and 2066. Between these two years, rates are assumed to change linearly.

**Table B.4 Age-Specific & Total Labour Force Participation Rates**

Age	Males		Females		Year	Males	Females
	2006	2066	2006	2066			
17	39%	39%	27%	27%			
22	85%	85%	78%	78%	2006	83%	75%
27	93%	93%	86%	86%	2011	83%	75%
32	97%	97%	91%	91%			
37	98%	98%	93%	93%	2016	84%	76%
42	97%	97%	93%	93%	2026	85%	77%
47	93%	93%	90%	90%	2036	86%	77%
52	90%	90%	84%	90%			
57	88%	90%	67%	82%	2046	86%	77%
62	77%	87%	50%	63%	2056	86%	76%
67	53%	75%	27%	46%	2066	86%	76%

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.

fourth known as the Medical branch. Funds in this branch come from a special allocation of contributions and are used for the development of health infrastructure throughout The Bahamas.

Since the three benefit types have different characteristics and financing mechanisms, the separation allows for better monitoring of experience. 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.

For the Short-term benefits branch and the non-pension benefits that fall under the Industrial benefits branch, a pay-as-you-go method of financing is used. Under this method current contributions are expected to meet current benefits with only a small reserve. Therefore, the contribution rate allocated to these benefits should approximate expected expenditure and reserve levels should be small. A very small portion of contributions is allocated to the Medical branch with the remainder going to the Pensions branch.

As shown in the following table, the contribution rate allocated to all three benefit branches has in most cases been inadequate to meet total expenditure.

**Table 1.2 Summary Branch Experience (% of Insurable Wages)**

Benefit Branch	Contributions Allocated	Total Expenditure				
		2002	2003	2004	2005	2006
Short-term	1.39%	1.45%	1.52%	1.67%	1.50%	1.49%
Industrial (incl. Death & Disablement)	0.72%	0.69%	0.61%	0.76%	0.75%	0.83%
Pensions	6.23%	6.57%	6.88%	6.67%	6.76%	6.76%
Medical	0.09%	0.07%	0.08%	0.08%	0.08%	0.09%
<b>All Branches</b>	<b>8.43%</b>	<b>8.79%</b>	<b>9.09%</b>	<b>9.16%</b>	<b>9.08%</b>	<b>9.17%</b>

Additional benefit experience and branch details for years 2002 to 2006 may be found in Appendix E.

### 1.5 Experience Compared With Projections of 7<sup>th</sup> Actuarial Review

In the 7<sup>th</sup> Actuarial Review, projections were prepared under three scenarios – *Intermediate*, *Pessimistic* and *Optimistic*. Shown below is a comparison of actual cumulative experience over the 5-year period with the projections of the *Intermediate* Scenario. With the exception of administrative expenditure, actual amounts were less than projected. Some of the shortfall in projected contribution income and benefit expenditure was as a result of there being no increases to the wage ceiling and pension rates. Adjustments for both were assumed to occur during the 5-year period.

**Table 1.3 Projections from 7<sup>th</sup> Actuarial Review Compared With Actual Experience**

	2002 - 2006 Projected – <i>Intermediate</i> Scenario (millions of \$'s)	2002 - 2006 Actual (millions of \$'s)	Difference
Contribution Income	713.0	653.9	8.3% below projected
Investment Income	373.7	336.8	9.9% below projected
Benefit Expenditure	608.8	566.8	6.9% below projected
Administrative Expenditure	130.8	137.5	5.1% above projected
2006 Year-end Reserves	1,469.0	1,415.3	3.7% below projected

When compared with the projections of the three scenarios, actual financial experience during the period 2002 to 2006 was more in line with the *Pessimistic* scenario. Projected 2006 year-end reserves under the *Pessimistic* Scenario were \$1,402 million.

## 1.6 Investments

At the end of 2006, National Insurance investments stood at \$1.35 billion, up from \$0.99 billion at the end of 2001. When investments are compared to total reserves, a useful measure of how efficiently available funds are invested, there was a marked increase from 90% to 95%. This change was due to a reduction in the amount of non-interest bearing assets on hand. NIF investments at the end of 2006 stood at 22% of GDP.

During the review period, the average yield on investments was 6.0% and the average yield on reserves 5.5%. With inflation averaging 2.0% per annum, the real rate of return on reserves over the 5-year period was 3.5%.

The following table provides a summary of the investment mix of the National Insurance Fund at year-end 2006 and 2001.

Notable changes in asset mix between 2001 and 2006 were the reduction in certificates of deposit, increases in equities and increases in bonds issued by government corporations. The purchase of additional Bank of Bahamas (BoB) shares in 2004 brought the Fund's total ownership in the Bank to 20.5% and thus resulted in a change in how this investment is reported from an Equity investment to an Investment in Associate.

In 2005 approval was granted by the Bahamas Government for the Fund to invest up to \$25 million per annum in specific foreign investments. At the end of 2006, \$19.1 million was held in US-dollar denominated certificates of deposit.

Mortality rates have been determined using The Bahamas 1999-2001 Life Table produced by the Department of Statistics. Improvements in life expectancy for the *Best Estimate* scenario have been assumed to follow the “slow” rate as established by the United Nations with a “medium” rate assumed for the *High Dependency* scenario and “very slow”<sup>1</sup> for the *Low Dependency* scenario. Sample mortality rates for the *Best Estimate* scenario and the life expectancies at birth and at age 65 for sample years are provided in Table B.2.

**Table B.2. Sample Mortality Rates & Life Expectancies**

Age	Males			Females		
	2006	2036	2066	2006	2036	2066
0	0.0077	0.0054	0.0044	0.0060	0.0048	0.0042
5	0.0005	0.0003	0.0002	0.0003	0.0001	0.0001
15	0.0006	0.0004	0.0003	0.0003	0.0002	0.0001
25	0.0025	0.0016	0.0012	0.0014	0.0012	0.0011
35	0.0045	0.0030	0.0024	0.0027	0.0021	0.0018
45	0.0065	0.0047	0.0039	0.0040	0.0030	0.0025
55	0.0125	0.0096	0.0083	0.0066	0.0051	0.0043
65	0.0233	0.0191	0.0171	0.0146	0.0105	0.0086
75	0.0415	0.0361	0.0334	0.0299	0.0223	0.0187
85	0.1125	0.1039	0.0994	0.0754	0.0639	0.0579
95	0.1515	0.1479	0.1459	0.1738	0.1604	0.1529
<b>Life Expectancy at:</b>						
Birth	71.1	74.7	76.3	77.4	80.5	82.2
Age 65	16.6	17.6	18.2	19.2	21.2	23.1

**Table B.3. Projected Age 65 Life Expectancies**

	2006	2066		
		Low Dependency	Best Estimate	High Dependency
Male	16.6	17.6	18.2	18.8
Female	19.2	21.1	23.1	23.4

Net migration (in minus out) in 2000 is assumed to have been 600 persons. For the Best Estimate and High Dependency scenarios declines to 500 and 300 persons in 2006 respectively, have been assumed, while for the Low Dependency scenario an increase to 700 is assumed. The following charts show assumed total net migration for each year from 2000 to 2066 and the age-specific rates when total net in-migration for a single year is 100.

<sup>1</sup> Midpoint of Slow rates and no improvements



## 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 modelling tools to fit the specific case of The Bahamas and the National Insurance Fund. These modelling 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 The Bahamas' future demographic and economic environment. Next, projection factors specifically related to National Insurance 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 assumptions vary.

### B.1 Modelling the Demographic & Economic Developments

The general Bahamas population has been projected beginning with totals obtained from the results of the 2000 national census and by applying appropriate mortality, fertility and migration assumptions. For the *Best Estimate* scenario the total fertility rate is assumed to decrease from 2.0 to 1.75 in 2020, and remain constant thereafter. Table B.1 shows ultimate age-specific and total fertility rates. For the *High Dependency* and *Low Dependency* scenarios, the ultimate total fertility rates are assumed reached in 2020.

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

Age Group	2000	Ultimate Fertility Rates		
		<i>High Dependency</i>	<i>Best Estimate</i>	<i>Low Dependency</i>
15 - 19	0.058	0.021	0.023	0.025
20 - 24	0.113	0.055	0.060	0.065
25 - 29	0.105	0.086	0.094	0.102
30 - 34	0.094	0.079	0.087	0.094
35 - 39	0.049	0.068	0.075	0.081
40 - 44	0.012	0.014	0.015	0.017
45 - 49	-	-	-	-
<b>TFR</b>	<b>2.00</b>	<b>1.60</b>	<b>1.75</b>	<b>1.90</b>

**Table 1.4. Summary of Investments, Year-end 2006 & 2001 (millions)**

Investment Category	2006		2001	
	\$'s	%	\$'s	%
<b>Certificates of Deposit</b>	226,831	16.8%	295,200	27.6%
<b>Treasury Bills</b>	94,461	7.0%	67,659	6.3%
<b>Bahamas Gov't Registered Stock</b>	597,550	44.3%	506,163	47.3%
<b>Bonds Issued By Gov't Corporations</b>	238,235	17.6%	129,147	12.1%
<b>Other Bonds &amp; Notes</b>	8,847	0.7%	-	0.0%
<b>Loans to Gov't Corporations</b>	15,581	1.2%	11,902	1.1%
<b>Direct Financing Leases</b>	59,341	4.4%	25,406	2.4%
<b>Investment Properties</b>	20,868	1.5%	19,077	1.8%
<b>Equity Investments &amp; Preference Shares</b>	57,447	4.3%	14,744	1.4%
<b>Investment in Associate (BoB)</b>	31,199	2.3%	-	0.0%
<b>Total</b>	<b>1,350,360</b>	<b>100%</b>	<b>1,069,298</b>	<b>100%</b>

Note: BoB is Bank Of The Bahamas

Further analysis of the Fund's investments at the end of 2006 reveals the following:

- 56% was held directly in Government of Bahamas securities;
- Excluding share ownership in and deposits held at the Bank of The Bahamas, 19% of the Fund's investments were held in securities issued by government corporations. Most are backed by Government guarantees.
- 24% was held in short-term securities – certificates of deposits and treasury bills.
- 98.6% of the investments were domiciled in The Bahamas.

With such heavy concentrations in several areas, the investment portfolio is not well diversified. As a result, the overall Fund is relatively high risk with return expectations that do not justify the current level of risk. It is therefore recommended that gradual reductions be made to the proportions held in Bahamas Government, quasi-government securities and short-term investments, and that the portion held overseas be increased gradually to around 20%.

### 1.7 Subsequent Events

Effective March 2007, minimum pension rates and all other pensions in payment were increased. Minimum pension rates were increased as follows:

**Table 1.5 Minimum Pension Rates**

	Up to February 2007	From March 2007
<b>Minimum Retirement (age 65), Invalidity &amp; Survivors Pension (adult)</b>	\$230	\$270
<b>Minimum Retirement pension payable from age 60</b>	\$205	\$250
<b>Pension to Survivors children (dependants &amp; orphans)</b>	\$95 to \$100.50	\$110 & \$125
<b>Assistance Pension To Adults</b>	\$200	\$230
<b>Assistance Pensions to Children</b>	\$80 to \$95.33	\$92 & \$105

For persons receiving pensions at rates above the minimum, adjustments varied depending on the year that the pension was awarded as shown below.

**Table 1.6 Pension Adjustment Rates – March 2007**

Year Pension Started	% Increase
1998 or before	15%
1999 & 2000	12%
2001 & 2002	8%
2003 & 2004	5%
2005, 2006 & up to Feb 2007	3%

These adjustments resulted in increased benefit payouts of approximately \$1.0 million per month. Also, as a consequence of these adjustments, the gap between the non-contributory pension and the minimum Retirement pension payable at age 60 was increased from \$5 to \$20.

(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:* 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 25%, a grant equal to 100 times the percentage degree of disability is paid;
- If degree of disablement is 25% or more a benefit equal to the percentage loss of faculty times the rate of injury benefit is paid. A grant of \$500 is also paid for disablement assessed at 25% - 66%, and \$1,000 for disablement assessed at greater than 66%.
- If degree of disablement is 100% and the insured requires constant care and attendance, an allowance of 20% of the disablement benefit shall also be paid.

(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) **INDUSTRIAL FUNERAL BENEFIT**

*Eligibility:* Death was due to an accident arising out of and in the course of employment

*Amount Of Benefit:* \$1,500.

(e) **MEDICAL CARE**

*Eligibility:* Insured suffers injury or illness arising out of and in the course of employment.

*Expenses Covered:* Reasonable expenses for doctor's fees, medication, hospitalisation, travelling and constant care and other specified costs incurred as a result of an employment injury or prescribed disease.

*Duration:* 40 weeks from the date of injury unless the degree of disablement is greater than 25% in which case it is payable for 2 years from the date of injury. This may be extended at the discretion of the Director.

*Amount Of Grant:* Lump sum of \$400.00

(d) FUNERAL BENEFIT

*Eligibility:* Death of an insured person, other than as a result of an employment-related accident, or the deceased is the spouse of an insured. The insured person must have paid at least 50 contributions.

*Amount Of Benefit:* \$1,500

(e) SICKNESS ASSISTANCE

*Eligibility Requirements:* Gainfully employed in the contribution year or the 52 week period preceding incapacity but fails to qualify for Sickness benefit and meets the means test.

*Waiting Period:* 3 days.

*Amount Of Benefit:* \$53.08 per week.

*Duration Of Benefit:* 26 weeks in any continuous period that may be extended to 40 weeks subject to approval of the Medical Officer. Any two or more periods of incapacity separated by not more than eight weeks shall be treated as a continuous period of incapacity.

A.2.3. INDUSTRIAL 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 Injury benefits.

*Waiting Period:* 3 days.

*Amount Of Benefit:* 66 2/3% of average insurable earnings in the 26 weeks before the accident or disease occurred.

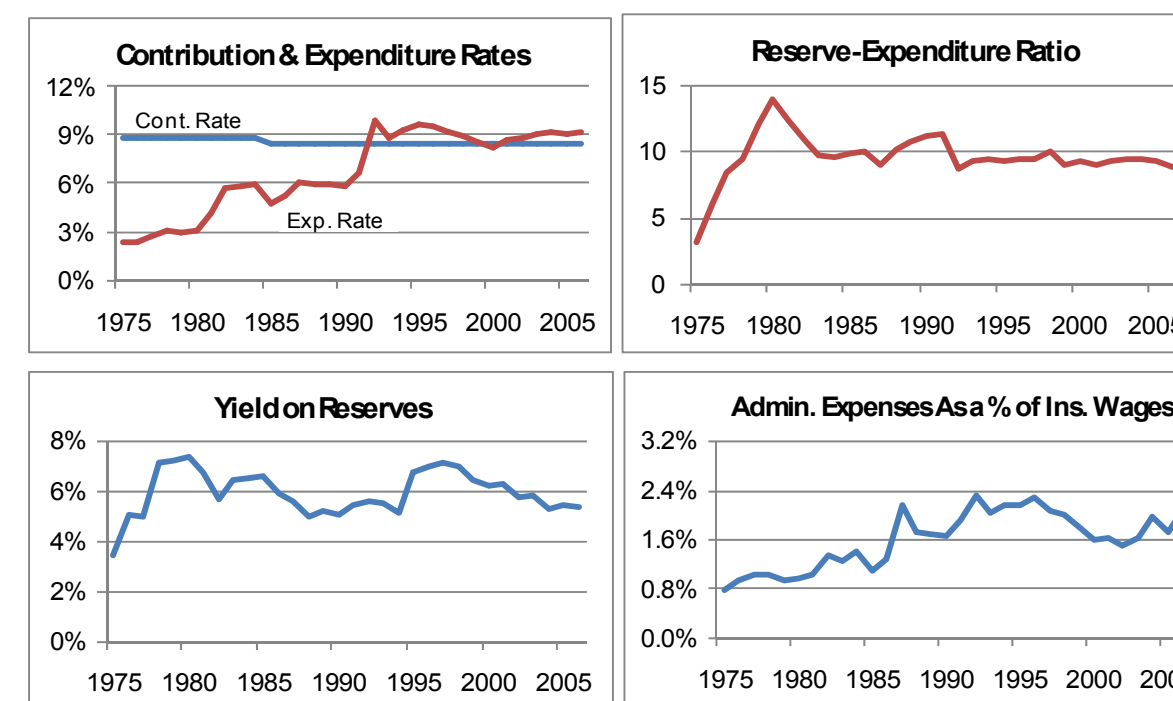
*Duration Of Benefit:* Maximum 40 weeks.

## Chapter 2 Assessment Of Performance & System Design

### 2.1 Historical Performance, 1974 – 2006

Social security systems have long-term horizons – workers may contribute for over 40 years and then receive pensions for over 30 years. Therefore, an assessment of performance should not be limited to one or two years, but instead entail a review of experience over a long period and an understanding of why changes over shorter periods have occurred. Also, some experience factors can act as leading indicators, thus assisting with identifying potential future short-term performance before it actually occurs. Experience for key financial factors from 1975 to 2006 is presented in the following charts:

Figure 2.1. National Insurance Experience



As a social security system matures it is generally expected that expenditure will grow at a faster pace than contribution income and that there would be a gradual deterioration in relative funding levels if the contribution rate is not increased. As shown above expenditure has generally increased while the contribution rate has remained unchanged resulting in the expenditure rate exceeding the average contribution rate in all but one year since 1991. There are two main factors that drive current expenditure – the number of pensioners per 100 contributors or the demographic ratio, and the average pension compared with the average insurable wage or the replacement ratio. Both of these ratios have been gradually increasing.

Funding levels, as measured by the size of reserves relative to annual expenditure, have remained at just under nine for the past fifteen years, with a noticeable decrease in the past two years.

Also shown above is the gradual decline in yield on reserves, a pattern that is consistent with decreasing prevailing interest rates in the economy, but also due to the limited investment opportunities available for the growing National Insurance Fund. Administrative costs as a percentage of insurable wages declined gradually between 1997 and 2003 but there has been a marked reversal of this downward trend in the last few years.

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

**Table 2.1. National Insurance Performance Indicators**

	2001	2006	Comments
1. Avg. Contribution Rate	8.4%	8.4%	Rates not adjusted since inception.
2. Expenditure Rate	8.8%	9.2%	Gradual increase expected. Expenditure has exceeded contributions in all but one year since 1991.
3. Benefits as % of GDP	1.8%	1.9%	Gradual increase expected.
4. Reserve-Expenditure Ratio	8.9	8.7	Gradual decrease expected.
5. 3-year average yield on reserves	6.3%	5.3%	Returns on investments have gradually declined in recent years.
6. 3-year average real yield on reserves (net of inflation)	4.8%	3.7%	Inflation higher and returns lower in 2004 to 2006 than during 1999 to 2001.
7. Administrative Expenses as:			
▪ % of Contribution Income	19%	25%	Very high. 2006 costs slightly higher due to the VERP.
▪ % of Insurable Wages	1.6%	2.0%	
8. # of Contributors Per Pensioner	5.2	5.3	Gradual decline expected but number of contributors has increased faster than pensioners in last few years.
9. Average Pension as % of Average Insurable Wage	22%	24%	Gradual increase expected.

Other than for administrative costs and investments returns, National Insurance demographic and financial experience has been generally in line with expectations.

## 2.2 Design & Policy Indicators

National Insurance systems have wide-ranging objectives such as the provision of adequate income coverage for all workers which lead to the provision of adequate lifetime pensions for the retired, invalid and survivors of insured persons. Given that the National Insurance system has a large pool

## CARICOM Agreement On Social Security

Some former contributors with fewer contributions than required for Retirement, Invalidity and Survivors pensions may qualify for a pension under the CARICOM Agreement on Social Security based on the total number of contributions made in participating countries.

### A.2.2. SHORT-TERM BENEFITS

#### (a) SICKNESS BENEFIT

*Contribution Requirements:* At least 40 paid weekly contributions plus one of:

- (i) at least 13 contributions in the 26 weeks preceding sickness,
- (ii) at least 26 contributions in the last 52 weeks,
- (iii) at least 26 contributions in the preceding contribution year.

*Waiting Period:* 3 days.

*Amount Of Benefit:* 60% of average weekly insurable earnings during the applicable qualifying period used above, subject to a minimum of \$62.31 per week.

*Duration Of Benefit:* 26 weeks in any continuous period that may be extended to 40 weeks subject to approval of the Medical Officer. Any two or more periods of incapacity separated by not more than eight weeks shall be treated as a continuous period of incapacity.

#### (b) MATERNITY BENEFIT

*Contribution Requirement:* At least 50 paid weekly contributions plus one of:

- (i) at least 26 contributions in the 40 weeks prior to commencement of benefit,
- (ii) at least 26 contributions in the preceding contribution year.

*Amount Of Benefit:* 66 2/3% of average weekly insurable earnings during the applicable qualifying period used above, subject to a minimum of \$62.31 per week.

*Duration Of Benefit:* 13 weeks, starting no earlier than 6 weeks before the expected date of confinement. This may be extended by up to 2 weeks if confinement is delayed.

#### (c) MATERNITY GRANT

*Contribution Requirement:* At least 50 paid contributions. Where the mother fails to meet these requirements the grant will be paid if her spouse meets the contribution requirement.

(c) SURVIVORS BENEFIT

*Eligibility Requirements:* The deceased, at time of death, had paid at least 150 contributions. A widow or widower must have been married to the deceased for at least one year (includes common-law spouse), children must be under 16, 21 if in full-time education, and any age if invalid. Parents need to have been dependent on the deceased.

*Amount Of Benefit:* The proportion of Retirement/Invalidity benefit shown below:

Widow or widower: 50%;

Children: 10% per child – up to 5 children at any one time, 10 if there is no widow(er);

Parents: 50%;

Minimum pensions:

Widow(er)/Parent - \$270.00 per month

Children - \$110.00 per month

Orphans - \$125.00 per month

*Duration Of Benefit:*

- Widow or widower older than 40 and incapable of economic employment at time of insured's death, or widow or widower who is disabled, or a widow pregnant by her late husband at the time of his death, or a widow who has the care of a child of the deceased: life pension or until the beneficiary is entitled to a larger Retirement or Invalidity pension in his/her own right.

The Survivor's pension will cease upon remarriage or cohabitation;

- Children: payable until age 16, age 21 if receiving fulltime education or training, for life if invalid;
- Parents: payable for life.

(f) SURVIVORS' ASSISTANCE

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

*Amount Of Benefit:*

Widow(er) / Parent - \$230.00 per month

Children - \$92.00 per month

Orphans - \$105.00 per month

of assets which together with future contributions will meet future expenditure, ensuring that these assets realise market rates of return without exposure to excessive risk is also an important objective.

While assessing whether or not these objectives are being met can be somewhat subjective, by setting dollar values to certain key parameters such as the earnings ceiling and minimum pension, or through policy guidance issued to the National Insurance Board, policymakers influence to a large extent how well such objectives are achieved. The following table provides an analysis of a few key design parameters and indicators of coverage, benefit levels and investment prudence, by reviewing current levels and changes between 2001 and 2006.

**Table 2.2. Assessment of Key Design Parameters & Achievement of Policy Objectives**

Policy	Measured By	2001	2006	Comments
<b>1. Level of Insurance Coverage</b>	Ratio of Ceiling to Average National Wage	1.0	0.8	Very low. Ceiling not increased since 1999. Almost 40% of contributors have earnings above current ceiling.
<b>2. Minimum Floor of Income Protection</b>	Minimum Retirement Pension (at age 65) as a % of Average Insurable Wage	19%	17%	Increase in 2007 brought Minimum pension to 20% of average insurable wage and 100% of the inflation-adjusted poverty line. Minimum rates currently at acceptable levels.
	Minimum Age Pension (at age 65) as a % of Poverty Line	96%	87%	
<b>3. Coverage For All Employed Persons</b>	% of Employed Persons Contributing	82%	85%	Lowest coverage levels among small businesses and construction sector. Late payment of contributions a major challenge.
	% of Self-employed Persons Contributing	18%	19%	
<b>4. Investment Diversification</b>	% of Assets held in Government Securities	56%	56%	High.
	% of Assets held in Quasi-Government Securities	13%	19%	Acceptable in isolation but since most backed by government guarantees, combined exposure to public sector very high.
	% of Assets held in short-term deposits	34%	24%	Still very high and should be reduced.
	% of Assets held locally	100%	99%	Very high.

## 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 National Insurance finances. Therefore, to best assess the Fund's long-term sustainability, projections of The Bahamas' total population and the economy are required. For this review 60-year projections have been performed.

In developing all of 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. As a result, the set of demographic and financial projection results based on this assumption set is referred to throughout this report as "Best Estimate."

Given the significant uncertainty inherent in forecasting such a long period, projections have also been performed using two additional sets of assumptions. These alternative projection sets, which encompass assumptions that are generally more optimistic and more pessimistic than best-estimate assumptions, are presented in Chapter 4.

### 3.1 Population Projections

#### 3.1.1 Assumptions

Projections of The Bahamas' population begin with the results of the 2000 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 The Bahamas and is the most volatile of the three factors. The 2000 population census placed The Bahamas' population at 303,611.

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. The Bahamas' TFR is estimated at just under 2.0 in 2006. For these projections it is assumed that TFR's in The Bahamas will remain below replacement level, falling to an ultimate rate of 1.75 in 2020.

Using mortality rates from The Bahamas Abridged Life Tables, 1999-2001, current population estimates and the number of deaths in the past few years suggest life expectancy at birth in 2006 of around 71 for males and 77 for females. While further improvements in life expectancy are expected, the prevalence of HIV and AIDS may retard the rate of previously expected improvements. Improvements in mortality are assumed to occur in accordance with UN estimates.

The amount of benefit is reduced by 4% for each year that the insured is less than 65.

*Maximum Pension:* 60% of adjusted average monthly earnings over the best three years.

*Minimum Pension:* \$270.00 per month. (\$250 if awarded at age 60)

*Initial Contribution Credits:* Persons over age 35 in October 1974 who made at least 150 contributions in the programme's first 3 years were awarded special credits at the rate of 25 contributions for each year their age exceeded 35, subject to a maximum of 600 credits.

#### (b) OLD AGE NON-CONTRIBUTORY PENSION

*Eligibility:* Age 65, insufficient credits to qualify for Retirement benefit, Bahamian citizen or resident in the Bahamas as an employed or self-employed person for at least 12 months in the 15 years immediately before claiming, and has a share of household income of less than \$53.08 per week.

*Amount Of Assistance:* \$230.00 per month.

#### (c) INVALIDITY BENEFIT

*Eligibility Requirements:* The applicant must have paid at least 150 weekly contributions and be:

- (i) Less than 65;
- (ii) Incapable of work as a result of a specified disease or bodily or mental disablement, otherwise than as a result of an employment injury, which is likely to remain permanent.

*Amount Of Benefit:* Calculated in the same manner as for Retirement benefit without applying a reduction factor for payment before age 65.

*Maximum Pension:* 60% of adjusted average earnings over the best three years.

*Minimum Pension:* \$270.00 per month.

#### (d) INVALIDITY ASSISTANCE

*Eligibility Requirements:* The applicant must:

- (i) have insufficient credits to qualify for Invalidity benefit;
- (ii) be less than 65;
- (iii) be medically declared an invalid, other than as a result of an employment injury.

*Amount of Benefit:* \$230.00 per month.

For pensionable Bahamas Government employees, the ceiling for long-term benefits (pensions) is \$110 per week.

Contributions are computed as a percentage of insurable earnings. The contribution rates for all categories of contributors are shown below:

Employee Type		Employee	Employer	Total
Private & non-Pensionable Civil Servants		3.4%	5.4%	8.8%
Pensionable Civil Servants	Wages <=110	3.4%	5.4%	8.8%
	> 110	1.7%	2.55%	4.25%
Self-employed A				6.8%
Self-employed B				8.8%
Voluntary				5.0%
Summer Students & Persons in receipt of Retirement Benefit			2.0%	2.0%

## A.2 Qualifying Conditions & Benefit Rates

### A.2.1 LONG-TERM BENEFITS

#### (a) RETIREMENT BENEFIT

*Eligibility Requirements:* The applicant must be age 65 or older and have paid at least 150 weekly contributions. A reduced pension is payable beginning from age 60.

*Amount Of Benefit:* A percentage of average insurable earnings over the best 3 years in the last 10. The applicable percentages are:

150 – 199 contributions	15%
200 – 249 contributions	17%
250 – 749 contributions	20% + 2% for each set of 50 above 250
750 or more contributions	40% + 1% for each set of 50 above 750

Average insurable earnings are determined by taking the average of the wages in the three years with highest weekly average insurable wages. If this average exceeds \$250 per week, the excess is reduced by 25%.

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. Further details may be found in Appendix B.

**Table 3.1. Principal Demographic & Economic Assumptions**

<b>Ultimate Total Fertility Rate</b> (from 2.0 in 2000)	1.75	
<b>Mortality Improvements</b> <sup>^</sup>	Slow	
<b>Net In-Migration Per Annum</b>	500 in all years	
<b>Real GDP Growth Rates</b>	Short-term	3.10%
	Med.-term	2.50%
	Long-term	1.25%
<b>Real Increase in Wages</b>	1.0%	
<b>Inflation</b>	2.75%	

<sup>^</sup> UN mortality improvement rates

### 3.1.2 Projection Results

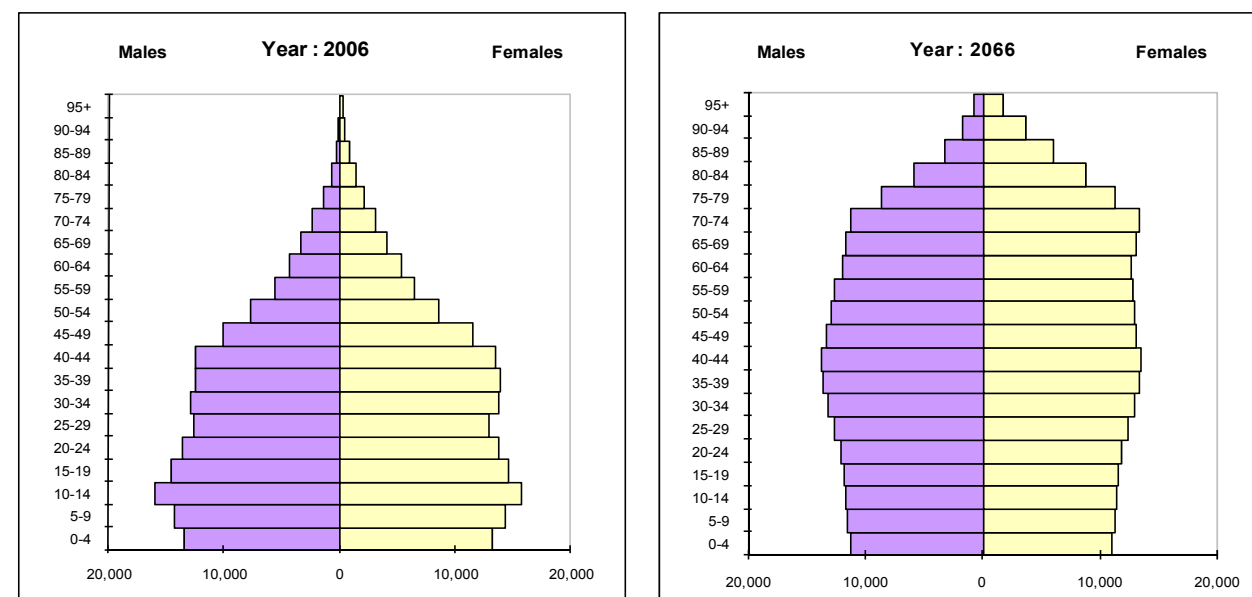
From the 2000 Census population of 303,611, The Bahamas' population is projected to increase to close to 430,000 in the mid-2050's, declining slightly thereafter. While projected future population size is important, the age distribution of the population is more critical for National Insurance, as pensions to the elderly represent the bulk of expenditure. For the projections under these best-estimate assumptions, the anticipated ageing pattern is highlighted in the last column of Table 3.2 which shows the ratio of the number of working-age people for each person of pension age, which is projected to decrease from 10.5 in 2006 to 2.5 in 2066. The inverse of this ratio is the number of pension age persons to working age persons in the population, which is projected to increase from 0.1 to 0.4.

The projected ageing of The Bahamas' population is also illustrated in Figure 3.1 through the use of population pyramids. In 2006 (left chart) the decreasing number of births in the last 15 years is evidenced by shorter bars for the three 5-year age groups below age 15. The current population may still be considered relatively young, however, with very few persons in the 5-year groups above age 45. In 2066 (right chart), it is expected that the number of people in 5-year age groups among pensioners will be larger than among the three youth age groups. The median age of the population is projected to increase from 31 in 2006 to 44 in 2066.

Table 3.2. Projected Bahamas Population (*Best-Estimate* scenario)

Year	Total	Age 0 - 15	Age 16 - 64	Age 65 & over	Ratio of Persons 16-64 To 65 & Over
2000	303,611	95,146	192,617	15,848	12.2
2006	328,591	93,295	214,801	20,495	10.5
2011	347,564	87,854	234,729	24,981	9.4
2016	364,967	84,485	250,043	30,439	8.2
2021	380,840	83,353	259,662	37,825	6.9
2026	395,367	83,005	264,395	47,967	5.5
2031	407,707	82,689	265,387	59,631	4.5
2036	417,151	81,669	265,984	69,498	3.8
2046	427,398	77,139	267,943	82,316	3.3
2056	428,878	74,636	261,767	92,476	2.8
2066	424,697	72,947	250,395	101,356	2.5

Figure 3.1 Population Pyramids, 2006 and 2066



## Appendix A Summary of Contribution & Benefit Provisions

### A.1 Benefits, Insured Persons & Contribution Rates

The National Insurance Board began operations in October 1974 and as of December 2006, provided the following benefits:

- (a) **Long-term contributory benefits:** Retirement, Invalidity and Survivors' benefits.
- (b) **Long-term assistance:** Old Age Non-contributory pension, Invalidity and Survivors' assistance.
- (c) **Short-term benefits:** Sickness benefit, Maternity benefit & grant, Funeral benefit.
- (d) **Short-term assistance:** Sickness assistance.
- (e) **Industrial benefits:** Injury benefit, Disablement benefit, Medical Care, Industrial Death benefit and Industrial Funeral benefit.

#### Insured Persons

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

- **Employed persons:** All contingencies.
- **Self-employed persons:**
  - Category A - All contingencies except Industrial benefits;
  - Category B – All contingencies. This group includes licensed drivers whose vehicle is for hire, licensed fruit/straw/vegetable vendors and share fishermen who own their boats.
- **Voluntary insured persons:** Retirement, Invalidity, Funeral and Survivors' benefits.

Employed persons who are in receipt of Retirement benefit are covered for Industrial benefits only.

#### Insurable Earnings & Contributions

Earnings used for determining contributions and benefits are limited to \$400 per week or \$1,733 per month. Earnings include basic wages and pay in lieu of notice but exclude bonuses, overtime and tips.

The ceilings on insurable wages since 1974 are:

1974 to 1984	\$ 110.00 per week
1984 to 1998	\$ 250.00 per week
1999 to present	\$ 400.00 per week



## References

- 7<sup>th</sup> Actuarial Review of The National Insurance Fund  
 Bahamas Living Conditions Survey - 2001, Department of Statistics, 2004  
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 Report Of The 2000 Census Of Population & Housing, Department of Statistics, 2002  
 State of National Insurance in The CARICOM Single Market & Economy, Derek Osborne, 2005  
 Workforce Planning Report, HayGroup, July 2003

## 3.2 National Insurance Projections

Building on the population and economic projections presented in the previous section, National Insurance demographic and financial projections have been modelled under best-estimate assumptions. These projections encompass several National Insurance specific assumptions, the contribution and benefit provisions in place on January 1, 2007 and the pension increases that occurred in March 2007. While increases to the contribution ceiling and pensions in payment are not legislated, periodic adjustments are expected, and thus have been assumed.

### 3.2.1 Assumptions

Key National Insurance assumptions are shown below.

**Table 3.3. National Insurance *Best Estimate* Assumptions**

<b>Avg. Contribution Rate*</b>	8.43% in all years
<b>Insurable Wage Ceiling</b>	Increases to \$600 in 2009 and then annually thereafter by 1% more than the change in the Retail Price Index
<b>Short-term Benefits</b>	Increases from 1.1% to 1.25% of insurable earnings over 60 years
<b>Employment Injury Benefits</b>	Increases from 0.45% to 0.55% of insurable earnings over 60 years
<b>Pension Increases</b>	Annually by the change in the Retail Price Index beginning January 2009
<b>Long-term Yield on Reserves</b>	5.0%
<b>Admin. Expenses as a % of Insurable Wages</b>	Decrease from 1.25% to 1.0% over 20 years
<b>Other Expenses</b>	0.08% of insurable earnings
<b>New Assistance Pensions</b>	75 females and 50 males per annum

\*Pensionable civil servants contribution at a lower rate on wages above \$110 per week

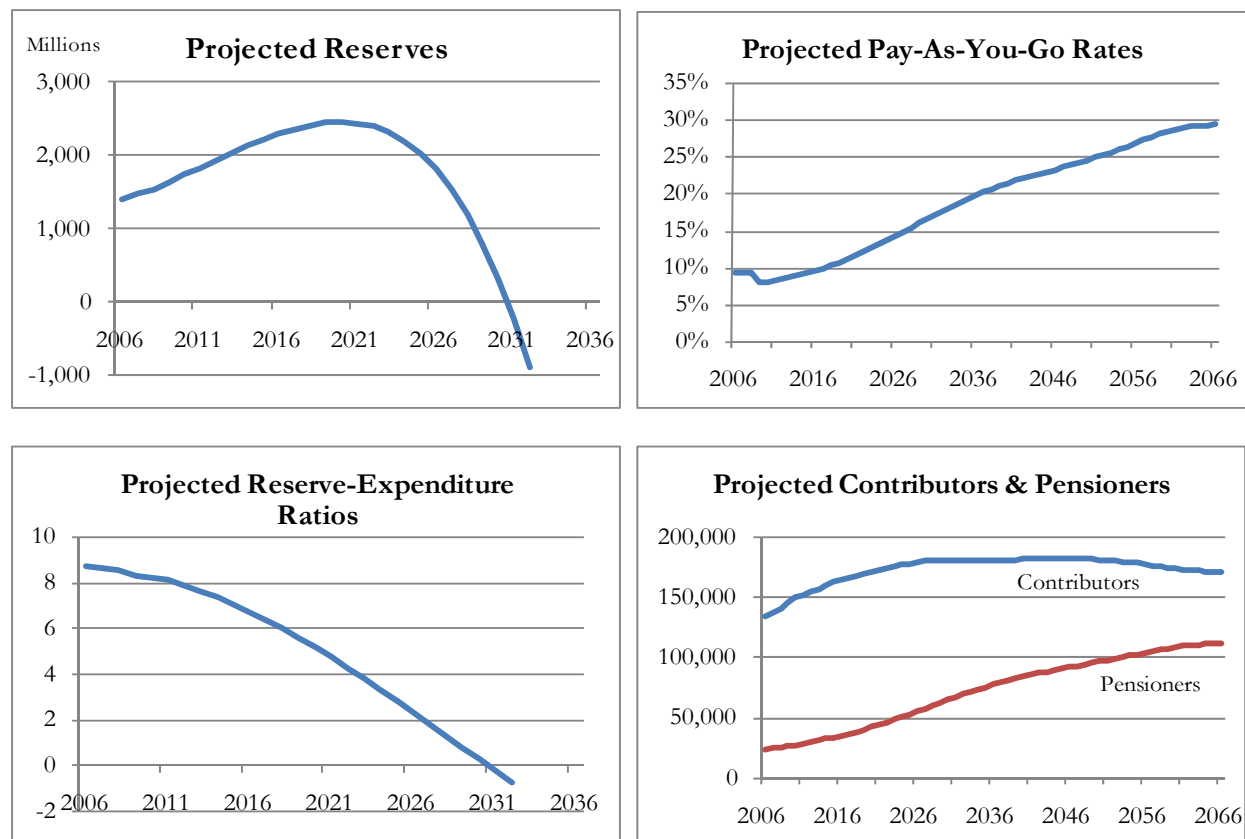
With these assumptions it is being assumed that the ceiling will be increased soon, and then thereafter, the prevailing level of coverage and income security made possible by the wage ceiling and the minimum pension will be generally maintained throughout the projection period.

### 3.2.2 Projection Results

For accounting purposes, National Insurance finances are separated into the Short-term, Industrial, Long-term Benefit Branches and Medical Branch. However, provisions exist for transferring reserves between branches and changing income allocations. Therefore, shortfalls in one branch may be met from surplus reserves of another. For this report, the projections for all branches have been consolidated so that the complete financial picture may be shown. The December 2006 reserve total is \$1.415 billion.

The charts in Figure 3.2 highlight the 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.

**Figure 3.2. Projection Results – Best Estimate Scenario**



The key results of these projections are summarised as follows:

1. Reserves are projected to continue growing through 2022 reaching \$2.6 billion. At this point, total expenditure will exceed total income for the first time and unless the contribution rate is increased, assets will have to be sold each year to meet expenditure.
2. Reserves are projected to be exhausted in 2032.
3. While actual reserves will increase for many more years, the size of these reserves relative to annual expenditure (reserve-expenditure ratio) will gradually decline.
4. Annual expenditure relative to total insurable wages is commonly referred to as the pay-as-you-go rate. This rate is projected to increase to just over 28% at the end of the projection period.
5. The general average premium, or the average level contribution rate required over the next 60 years to fully cover total expenditure during that period is 17.0%
6. While the number of pensioners is projected to more than quadruple over the 60-year projection period, reaching around 115,000, the number of insured persons will only increase by 35%. The number of contributors for each pensioner is expected to fall from 4.7 in 2006 to 1.5 in 2066.

### Statement of Actuarial Opinion

It is my opinion that for this report of the 8<sup>th</sup> Actuarial Review of the National Insurance 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 *International Actuarial Association Guidelines of Actuarial Practice For National Insurance Programs*.

Derek M. Osborne, FSA  
Consultant Actuary

these new benefits may produce, further jeopardising the sustainability of National Insurance pensions.

In many respects the approach to financing and administering health benefits is different from those of pensions.

1. Pensions are usually pre-funded whereas health benefits are financed on a pay-as-you-go basis. Therefore it is very important for health benefits that contributions be received on time so that benefits or reimbursements to providers can be paid on time.
2. Health benefit expenditure may fluctuate widely and so contribution rate changes may be needed at very short notice. This is not the case for pensions as the large reserve funds can be called upon if cash flow shortfalls arise.
3. Extraordinary events such as natural disasters or epidemics could result in a sharp and unexpected increase in health care costs for which reserves on hand are not able to satisfy.
4. Health benefits involve many more claims and the need for relationships with many more health care providers. Therefore, new skill sets such as contract negotiation and new IT systems will be required.
5. Quicker decision making is required in the administration of health benefits than for pensions where the impact of changes or failure to make changes may take years to be noticed.
6. For a health fund to be viable, administrative costs per claim, or as a percent of contributions, will have to be much lower than current NIB cost ratios.

With the above in mind, the following general recommendations are made if the NIB is to administer and/or finance new benefits:

- A significant improvement in the timeliness of contribution payments is required.
- All new benefits should be financed by an increase in the NIB contribution rate or a separate, self-sustaining contribution.
- A separate fund (or funds) should be created for any new benefit(s) that are introduced.
- A proper allocation of administrative costs should be made, not simply a charge for incremental costs that emerge. That is, the National Insurance Fund should in no way subsidise the administration of a health fund.

Finally, the need to increase the contribution rate for National Insurance benefits must not be overlooked. The introduction of a new contribution that is shared by workers and their employers could limit the possibility of implementing a rate increase designed to strengthen the National Insurance Fund.

Numerical details of the financial and demographic projections for the *Best Estimate* scenario are provided in Tables 3.4 to 3.6.

**Table 3.4. Projected Income, Expenditure & Reserves - *Best Estimate*** (millions of \$'s)

Year	Cash Inflows				Cash Outflows				Reserves		
	Contribution Income	Investment Income	Other Income	Total	Benefits	Admin. Expenses	Other Expenses	Total	Surplus/ (Deficit)	End of Year	# of times current year's expenditure
2006	149.0	71.6	5.1	225.7	124.8	36.0	1.2	162.1	63.6	1,415	8.7
2007	159.8	70.6	5.0	235.4	138.4	31.0	1.5	170.9	64.5	1,480	8.7
2008	165.7	73.8	5.0	244.5	146.5	31.0	1.6	179.1	65.4	1,545	8.6
2009	211.8	77.8	5.0	294.6	162.3	31.4	2.0	195.7	98.9	1,644	8.4
2010	225.5	82.7	5.0	313.2	174.2	32.8	2.1	209.1	104.1	1,748	8.4
2011	237.1	87.9	5.0	329.9	187.7	33.7	2.2	223.7	106.3	1,854	8.3
2012	249.1	93.0	5.0	347.2	204.0	34.7	2.4	241.0	106.1	1,961	8.1
2016	302.6	112.4	5.0	420.0	291.1	38.6	2.9	332.6	87.4	2,348	7.1
2026	463.0	106.0	5.0	573.9	698.7	54.9	4.4	758.0	(184.1)	2,078	2.7
2036	666.7	(153.8)	5.0	517.9	1,418.3	79.1	6.3	1,503.7	(985.8)	(3,650)	(2.4)
2046	944.8	(975.2)	5.0	(25.4)	2,387.1	112.1	9.0	2,508.1	(2,533.5)	(21,268)	(8.5)
2056	1,303.9	(2,863.5)	5.0	(1,554.6)	3,829.3	154.7	12.4	3,996.3	(5,550.9)	(61,494)	(15.4)
2066	1,801.4	(6,803.6)	5.0	(4,997.2)	5,835.2	213.7	17.1	6,065.9	(11,063.2)	(145,029)	(23.9)

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

**Table 3.5. Projected Benefit Expenditure - *Best Estimate*** (millions of \$'s)

Year	Pensions, Grants & Benefits						Benefits as a % of:	
	Retirement	Invalidity	Survivors	Assistance Pensions	Short-term Industrial		Insurable Wages	GDP
2006	57.9	9.2	10.8	15.0	20.5	11.4	7.1%	1.9%
2007	67.3	9.9	12.0	16.0	21.3	12.0	7.3%	2.0%
2008	73.2	10.3	13.1	14.9	22.2	12.9	7.5%	2.0%
2009	80.1	10.7	14.1	14.5	27.8	15.1	6.5%	2.1%
2010	88.0	11.3	15.3	14.1	29.6	15.8	6.5%	2.2%
2011	97.3	12.1	16.5	13.9	31.2	16.8	6.7%	2.2%
2012	108.8	13.0	17.8	13.7	32.9	17.8	6.9%	2.3%
2016	173.7	18.0	23.2	13.5	40.3	22.5	8.1%	2.7%
2026	504.2	37.5	40.7	14.0	63.1	38.2	12.7%	4.2%
2036	1,114.6	64.7	68.5	15.0	92.8	59.7	17.9%	5.9%
2046	1,927.8	101.9	111.8	17.9	134.4	89.8	21.3%	7.1%
2056	3,152.3	157.2	173.2	21.2	189.4	131.8	24.8%	8.1%
2066	4,874.7	222.5	251.9	25.4	267.1	187.7	27.3%	8.8%

**Table 3.6. Projected Contributors & Pensioners at Year-end - Best Estimate**

Year	# of Contributors	# of Pensioners					Total # of Pensioners	Ratio of Contributors to Pensioners
		Retirement	Invalidity	Survivors	Assistance	Death & Disablement		
2006	134,112	13,896	2,090	6,092	5,940	573	28,591	4.7
2007	137,140	14,487	2,124	6,332	5,794	586	29,322	4.7
2008	141,280	15,137	2,164	6,603	5,416	598	29,919	4.7
2009	145,581	15,882	2,217	6,851	5,114	614	30,678	4.7
2010	150,015	16,685	2,284	7,095	4,866	633	31,564	4.8
2011	152,569	17,521	2,363	7,311	4,660	655	32,510	4.7
2012	155,069	18,474	2,451	7,480	4,487	678	33,570	4.6
2016	164,621	23,142	2,872	7,779	4,004	783	38,579	4.3
2026	179,614	41,254	4,101	8,438	3,670	1,086	58,549	3.1
2036	181,769	61,616	5,010	9,279	3,487	1,314	80,706	2.3
2046	182,718	74,840	5,567	9,912	3,254	1,455	95,028	1.9
2056	177,929	86,162	6,032	10,379	3,011	1,572	107,157	1.7
2066	170,700	93,748	6,049	10,428	2,811	1,577	114,613	1.5

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

### 3.2.3 General Average Premium

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 National Insurance benefits package. For the *Best Estimate* projections, the general average premium is 17.0%, 8.6% higher than the current average contribution rate.

### 3.2.4 Actuarial Balance

Another measure of the financial sustainability of a National Insurance system is called "actuarial balance." For a given period, the actuarial balance can be defined as the difference between:

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

Under the current accounting approach, Death and Disablement pensions are essentially being fully funded while other (more costly) pensions are only partially funded. Given that reserves can be transferred between branches and changes in contribution allocations can be readily made, there is little value to the approach being used to account for Death and Disablement pensions. It is therefore recommended that the Death and Disablement reserve be eliminated and that the Industrial benefits branch be financed on a pay-as-you-go basis with a contribution allocation that is expected to match expenditure and a reserve level of two to three times annual expenditure. .

The recommended changes to the allocation of contribution and transfer of reserves between branches are shown below.

**Table 5.4 Recommended Changes to Contribution Allocations & Reserve Transfers**

Benefit Branch	Contribution Income Allocation		Reserve Transfer
	Current	Recommended	
Short-term	1.39%	1.50%	\$15 million from IB Branch
Industrial	0.72%	0.80%	\$75 million to LTB Branch and \$15 million to STB branch
Long-term	6.23%	6.04%	\$75 million from IB Branch
Medical	0.09%	0.09%	
All	8.43%	8.43%	

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

## 5.5 Health And Unemployment Benefits

The possibility of the National Insurance Board adding to its benefits package, or simply administering, health and unemployment benefits has been raised in recent years. In fact, a system of National Health Insurance, for which NIB would have been the primary administrator, was extensively studied over the last few years leading to the passage in Parliament of the National Health Insurance Act. But while the introduction of a comprehensive system that provides health benefits to insured persons no longer appears imminent, a phased approach seems more likely with the first element being a benefit that covers the cost of prescription drugs for persons with non-communicable chronic illnesses.

Given its infrastructure and administrative capabilities, the National Insurance Board is the most suited public agency to administer any new social security benefit. However, adequate safeguards need to be put in place to protect the National Insurance Fund from potential financial strain that

## 5.4 Other Issues

### 5.4.1 Penalty For Late Payment Of Contributions

Only 25% of monthly contributions are paid within the 15 days after the end of the month as permitted by the regulations. This extremely low rate of payments received on time has existed for many years. And while between 80% and 85% of the contributions due are eventually paid, the late payment of contributions has financial implications as interest income is lost, but also it helps foster a culture among employers that NI contributions are not as important as other financial commitments. Three reasons often given for such a higher rate of late payments are the minimal penalty that is applied, interest at the Prime rate, and that interest is not applied consistently to all overdue payments.

It is therefore recommended that a meaningful penalty that would create an incentive for employers and self-employed persons to pay, and to pay on time, be instituted. Two options for penalties are:

1. A one-time charge of 10% of the amount applied on the date plus interest of Prime Rate + 2% for each month the contribution remains outstanding.
2. A penalty of \$1 per employee for each week the contribution remains unpaid after the due date plus interest of Prime Rate + 2% for each month the contribution remains outstanding.

In addition to harsher penalties for non-payment and late payment of contributions, additional legal measures for dealing with delinquent employers, such as garnishing, should be considered.

### 5.4.2 Branch Allocations & Transfer of Reserves

At the end of 2006, the Industrial benefits branch was significantly over-funded and the Short-term benefits branch slightly under-funded as shown in the following table. Therefore, reallocations of contribution income and the transfer of reserves between branches are recommended.

**Table 5.3 Benefit Branch Reserves Funding and Expenditure Levels**

Benefit Branch	Dec. 2006 Reserves (millions of \$'s)	Reserve-Expenditure Ratio		Current Contribution Allocation (% of ins wages)	Projected Annual Expenditure (% of ins wages)
		2006	Target		
Short-term	9.6	0.4	1 to 2	1.39%	1.5%
Industrial	119.2	8.2	2 to 3	0.72%	0.8%

Within the Industrial benefits branch, a separate amount is set aside for the payment of future Death and Disablement pensions. The amount held as of December 2006 was \$20.7 million should reflect the estimated present value of future Death and Disablement pensions for persons on the two pension rolls. Based on the number of pensioners and their average pensions in December 2006, and the present value factors provided in the Financial & Accounting Regulations, the present value of future payments is \$36.0 million.

divided by the present value of future insurable earnings. This formula produces a rate that indicates the adequacy or insufficiency of the present contribution rate for a given period. For the National Insurance Fund, the deficiency expressed in dollars and as a percent of GDP is shown in Table 3.7.

**Table 3.7. Actuarial Balance 2007 – 2066** (\$'s are in millions)

	<b>2006 Year-end Reserves</b>	1,415
Plus	<b>PV of Future Contributions</b>	9,140
Minus	<b>PV of Future Expenditure</b>	18,423
Equal	<b>PV of Surplus/(Shortfall)</b>	(7,868)
	<b>Actuarial Balance (% of Insurable Earnings)</b>	(7.3%)
	<b>Actuarial Balance (% of GDP)</b>	115%

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 7.3% indicates that the contribution rate would have to be increased to 15.7% for the entire period in order for reserves to last up to 2066.

## 3.3 Comparison With Results Of 7<sup>th</sup> Actuarial Reviews

The projection results presented above differ in several ways from those of the 7<sup>th</sup> Actuarial Review. When the base scenarios are compared, this set of population projections suggests a slightly smaller population in the early 2060's. This is due to a slightly lower fertility rate and migration assumptions. Consequently, the National Insurance Fund projections of the Best Estimate scenario show higher costs than under the Intermediate scenario of the 7<sup>th</sup> Actuarial Review. However, given that these projections assume that the wage ceiling will be increased to \$600 soon, a level higher than assumed in the 7<sup>th</sup> Actuarial Review, the increase in contribution collections anticipated immediately after the ceiling adjustment, result in improved financials for the short and medium terms. The other assumption which is quite different is the long-term yield on reserves which has been lowered from 5.5% to 5.0%.

## 3.4 Sensitivity Analysis

Given the extensive set of assumptions required for projecting National Insurance 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 National Insurance assumptions are presented in the following chapter. However, certain National Insurance factors such as the yield on reserves, the

level of administrative costs and how future Assistance pensions are financed, 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 – National Insurance Factors**

Assumption	Differs From Best Estimate	General Average Premium
<b>Best Estimate</b>		17.0%
<b>Long-term Yield on Reserves</b> (5.0% assumed)	+0.5%	16.5%
	-0.5%	17.5%
<b>Administrative Costs</b> (1.0% of IW assumed after 2017)	1.2%	17.2%
	0.8%	16.8%
<b>Assistance Pensions</b> (\$4.9 mill. from Gov't each year)	Fully financed by Government	16.7%
	Fully financed by NIB	17.0%

As shown above, the long-term costs of National Insurance benefits could be reduced by a few percentage points if operating costs are reduced more than assumed and yields of reserves are greater than assumed. For Assistance pensions which are now partly financed by Government, a change to a scenario where NIB finances all pensions does not affect long-term costs when expressed as a percentage of insurable wages but instead negatively affects cash flows.

### 3.5 Financing Future National Insurance Benefits

By design, National Insurance pension obligations are only partially funded – that is, assets on hand are not sufficient to meet total liabilities if all payments were due on a particular date. This funding mechanism is considered suitable for national pension systems. With funding levels expected to gradually deteriorate and pay-as-you-go rates projected to increase to around 28%, reforms aimed at reducing long-term costs and increasing the contribution rate should be considered. These changes will serve to reduce the level of contributions that will have to be levied on future generations of workers.

There is no right or wrong time to increase the contribution rate. Instead, factors such as projected short-term finances, investment opportunities and whether or not advanced funding is considered superior to higher contribution rates later should guide this decision. However, adopting explicit funding objectives that could help guide the decision on whether or not to increase the contribution rate may prove beneficial.

Suggested financing and funding objectives for a system that is just over 30 years old are:

### 5.3 Honest & Responsible Government

“Public sector governance aims to ensure that an organisation achieves its overall outcomes in such a way as to enhance confidence in the organisation, its decisions and its action. Good governance therefore means that the organisation's leadership, its staff, the Government, the Parliament and the population can rely on the organisation to do its work well and with full probity and accountability.”

*Public Sector Governance Better Practice Guide, Australia National Audit Office*

Good governance practices affect all aspects of performance. For many of NIB's 33 years, practices that were not in conformance with the National Insurance Act and general public expectations have led to sub-par outcomes in many areas. Examples of the effects of poor governance practices include:

- Excessive administrative costs,
- Low compliance rates,
- A wage ceiling that has been upgraded only twice in 33 years,
- Pension increases and mass employee hiring that coincide with general elections,
- Three quarters of the National Insurance Fund invested in Government and statutory body securities,
- Use of National Insurance funds for purposes other than prescribed in legislation, and
- Failure of boards to continue serving following a change of government.

The National Insurance Board is not a department of Government. Instead, it is a body corporate managed by a Board over which a Minister has parliamentary oversight. As a result, the role of the Minister regarding the affairs of The National Insurance Board is very limited. Since inception, however, Ministers have often exerted greater influence over Board affairs than is provided for by the National Insurance Act.

For the NIB, good governance requires more than just ensuring that the public's funds are responsibly collected, expended and invested. Instead, it requires from all levels of leadership the core governance principles of accountability, transparency/openness, integrity, stewardship, leadership and efficiency. The board is therefore encouraged to establish a framework for good governance so that the NIB can achieve its overall goals in a way that enhances confidence in the organisation, its decisions and its actions.

Two specific amendments to the Act that should also enhance good governance practices are:

1. Section 7 of the Act that currently permits the Minister to give the Board directions, should be revised so that those directions be limited to issues of policy only.
2. The second schedule of the Act which outlines how members of the Board are selected should be revised to require that those appointed to represent employer and worker organisations must be the nominees of these groups and not just appointed after consultation between the Minister and these organisations.

## 5.2 Efficient and Accurate Administrative System

For years the National Insurance Board has been plagued with high administrative costs. During the period 2002 to 2006, administrative expenses consumed 21% of contribution income or 1.8% of insurable wages. (See chart in Figure 2.1 for pattern of administrative expenses from 1975 to 2006) When compared with inflation which averaged 2.0% per annum, operating costs, excluding special Voluntary Early Retirement Package (VERP) payment, grew by an average of 6.7% per annum between 2001 and 2006. For a social security system, these costs are excessive and immediate attention aimed at reducing operating expenses is recommended as one means of enhancing long-term sustainability.

The main reason for high operating costs is significant overstaffing which was highlighted in a 2003 assessment of staff levels conducted by an external Human Resources firm. The review concluded that with only minor modifications, the Board could reduce staff by 25% (from 465 to 350) without any significant change in the level of service. It also indicated that an even smaller staff could perform all functions if increased automation of functions was adopted.

In an effort to reduce staff levels which stood at 465 at the end of 2003, the Board introduced a Voluntary Early Retirement Package (VERP) which provided the opportunity for employees who were pensionable (age 55 or at least 30 years of service) to retire with a special lump sum payment plus their accrued pension entitlements. Some 89 employees accepted the VERP. However, extensive hiring in the first half of 2007 has eliminated most of the savings that would otherwise have been realised from the VERP as in July 2007, the staff count stood at 496.

There is no single internationally or regionally accepted benchmark for administrative costs since the amounts to which costs can be easily compared to, contributions, benefits and insurable wages, can change considerably when amendments to key provisions are made. For example, if the target were 12% of contribution income, then an increase in the contribution rate or ceiling would increase contributions and thus lead to an increased limit on operating costs. For NIB, the best expense ratio measure is administrative costs as a percentage of insurable wages, which excludes the impact of the contribution rate but is affected by the level of the wage ceiling.

The following table provides recommended target expense ratios for the next 5 and 10 years on two different wage ceiling scenarios. (One of the recommendations made previously was to increase the ceiling to \$600 per week from the current \$400 per week.) The expense ratio in 2006 excluding VERP costs, was 1.8% of insurable wages.

**Table 5.2 Recommended Administrative As % of Insurable Wages**

Wage Ceiling	5-Year Target	10-Year Target
\$400 per week	1.5%	1.2%
\$600 per week	1.2%	1.0%

- a) Income from contributions will exceed expenditure for at least the next 10 years;
- b) Total income will exceed total expenditure for the next 20 years.
- c) Reserves of 2 to 3 times annual expenditure in 2034, the year NIB would have existed for 60 years.

The projections presented in earlier sections do not meet any of these targets. In fact, contributions are expected to exceed expenditure only if the wage ceiling is increased to \$600 as recommended elsewhere in this report. It would therefore appear that a contribution rate adjustment that would at least provide increased revenues to meet the first two targets be implemented. An immediate rate increase of 2.0% would ensure that the first two financing goals are achieved while an increase of 2.2% would be needed to have projected reserves of 2.5 times expenditure in 2034.

While an immediate contribution rate increase may be enacted as a means of improving short-term finances and enhancing long-term sustainability, there are significant risks involved with further advanced funding of future benefits. Firstly, generating additional income may provide opportunities for inappropriate investments, the granting of excessive pension adjustments and increases to administrative costs. Also, with increasing annual surpluses, suitable investment vehicles will have to be found. A larger Fund which has difficulty finding investment opportunities could therefore open itself to demands from Government and quasi-government agencies to borrow funds at below market rates. Finally, the recent restructuring of public debt by three Caribbean governments, shows that even government bonds may not be as safe as they were once thought to be. And while current Bahamas government finances appear strong and overall debt levels are within reasonable limits, the primary risk to the National Insurance Fund of further lending to government lies in the possibility of Government not being able to liquidate bonds on or before their maturity dates should funds be needed to meet pension expenditure.

With the above risks and the potential for poor governance practices, a rate increase is not recommended now. Instead, it is recommended that changes aimed at reducing current costs and increasing current revenues be adopted first. The Board should therefore seek to:

- Reduce administrative costs;
- Increase the wage ceiling;
- Revise investment guidelines so that new opportunities both locally and abroad may be accessed;
- Increase the percentage of employers and self-employed persons who contribute;
- Introduce harsher penalties for late and/or non-payment of contributions; and
- Implement the changes to benefit provisions suggested in Chapter 5.

## Chapter 4 Alternative Scenarios

*Best Estimate* projections up to 2066 presented in the previous chapter provide estimates of future National Insurance 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 National Insurance long-term financial sustainability will likely be more sensitive to future population growth and economic development than National Insurance specific factors such as compliance rates and operating costs, the basis for the alternative scenarios focus on differences in the projected dependency ratios - population 65 and over to population 16 to 64 or the ratio of retirement-age persons to working-age persons. The scenario which may be considered more optimistic will have fewer retirees per worker and thus is referred to as the *Low Dependency* scenario. Conversely, the more pessimistic scenario will have a larger number of retirees per worker and is referred to as the *High Dependency* scenario.

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>Low Dependency</i>	<i>Best Estimate</i>	<i>High Dependency</i>
<b>Ultimate Total Fertility Rate</b> (from 2.0 in 2001)	1.9	1.75	1.6
<b>Mortality Improvements<sup>^</sup></b>	Very Slow	Slow	Medium
<b>Net Migration Per Annum</b> (In less out)	700 in all years	500 in all years	300 in all years
<b>Ultimate Real GDP Growth</b>	Short-term	3.50%	2.75%
	Med.-term	2.50%	2.00%
	Long-term	1.50%	1.00%
<b>Real Increase In Wages (p.a)</b>	1.2%	1.0%	0.8%
<b>Inflation (p.a.)</b>	2.5%	2.75%	3.0%
<b>Adjustments to Wage Ceiling</b>	Inflation +1%	Inflation +1%	Inflation +1%
<b>Adjustments to Pensions</b>	Inflation	Inflation	Inflation
<b>Collection Of Contributions</b>	+1%	-	-1%
<b>Long-term Yield on Reserves</b>	5.5%	5.0%	4.5%
<b>Admin. Cost as % of Insurable Earnings after 10 years</b>	0.8%	1.0%	1.2%

<sup>^</sup> UN mortality improvement rates

Issue	Current Approach	Recommended Approach
<b>11. Survivors Benefit - Widow(er)s without children who are working or capable of working</b>	No benefit	Pension for one year.
<b>12. Survivors Benefit - What if also qualify for Retirement or Invalidity benefit?</b>	Only higher of two benefits paid.	Case 1: Where one of two pensioners dies, pay higher of two pensions but at least 60% of combined pensions.  Case 2: Where Survivors pensioner now qualifies for Retirement or Invalidity, pay 100% of the larger pension plus 50% of the smaller pension.
<b>13. Assistance Pensions- Means test</b>	Includes applicants share of household income.	Include financial assets (bank account, stocks, bonds etc) and real estate excluding one's residence.
<b>14. Industrial benefits</b>	Only some self-employed eligible. Contribution rates of 6.8% (ineligible) and 8.8% (eligible.)	All self-employed eligible with additional requirement that contributions are up-to-date when accident occurred. Contribution rate of 8.8% for all.
<b>15. Sickness, Maternity &amp; Injury Benefit</b>	Benefit paid irrespective of what employer pays.	Benefits should only be paid if wages lost and only to the extent of such loss up to the maximum amount payable.

### Impact of recommended changes

It is not possible to determine with certainty the immediate change in the number of pensioners and average pensions if the income test for Retirement pension were removed and persons were allowed to receive both Retirement and Survivors pensions. Therefore, an estimate of the financial impact of these and all other changes described above has been made using the *Best Estimate* assumption set. The net effect of these changes is a reduction in long-term costs with the general average premium falling from 17.0% to 15.2% and the estimated pay-as-you-go rate in 2066 being 25.2% instead of 28.4%. Therefore, even though the changes above include some additional pension costs, the overall net effect of the combined changes would enhance long-term sustainability.

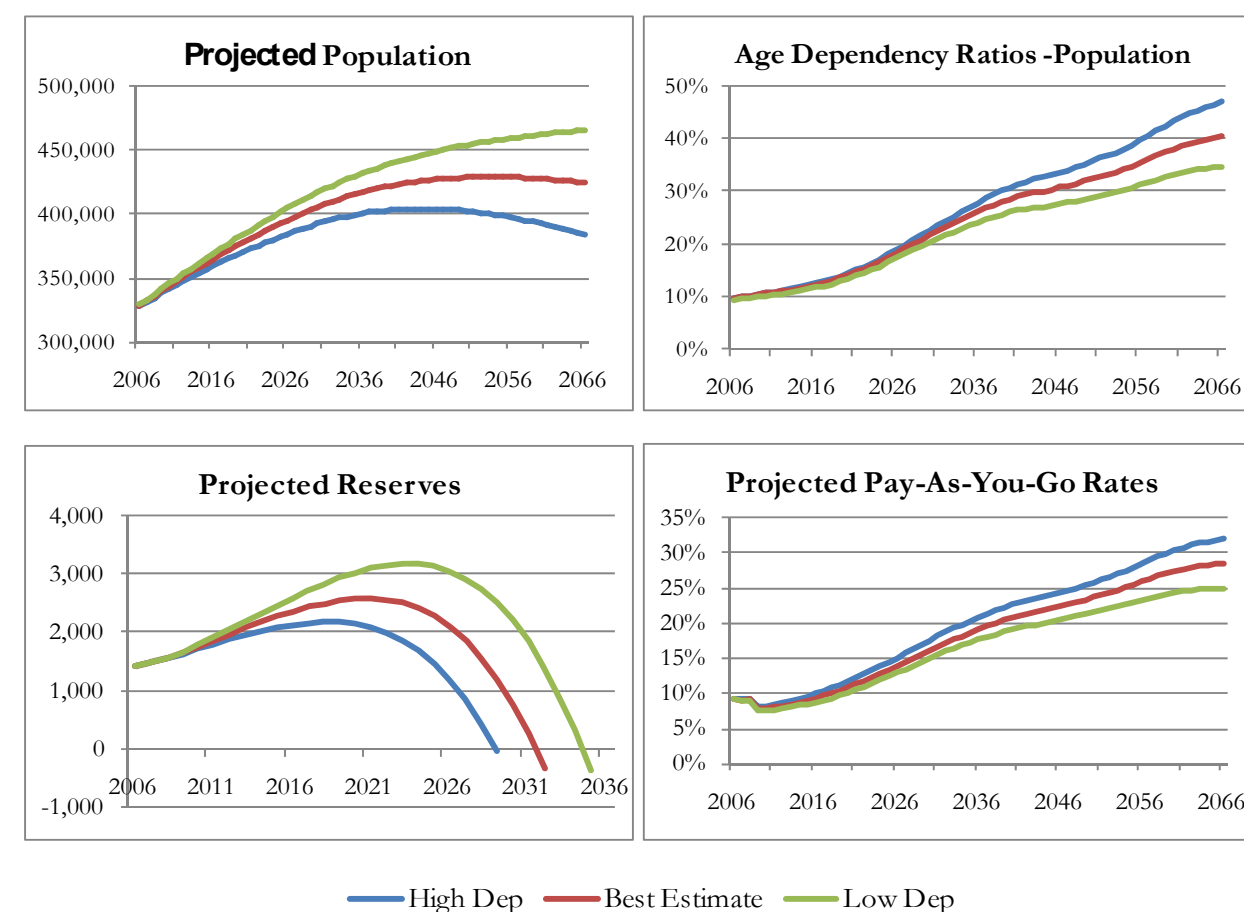


**Table 5.1 Schedule of Suggested Design Changes**

Issue	Current Approach	Recommended Approach
1. <b>Adjustment of Wage Ceiling, Pensions and Grants</b>	Ad hoc. Government decides the timing and the magnitude of adjustments. Amendments to regulations which are passed by Parliament, needed for all changes.	Annual adjustments based on changes in Retail Price Index with appropriate safeguards to protect the Fund during high inflationary periods.
2. <b>Wages Covered - All Workers</b>	Base wages from primary employer up to wage ceiling.	Include wages from all employers up to the wage ceiling.
3. <b>Wages Covered - Hospitality Sector Workers</b>	Base wages only.	Include tips and gratuities that are formally paid.
4. <b>Wages Covered - Pensionable Civil Servants</b>	Wage ceiling of \$110 per week for pensions.	Same wage ceiling as for private sector workers with a career-earnings formula used for pensions so that pension commensurate with past contributions.
5. <b>Retirement Benefit – Contribution Requirement</b>	150 weeks	500 weeks
6. <b>Retirement Benefit - Reference Period for Wages</b>	Best 3 in last 10 years	Best 5 years
7. <b>Retirement Benefit - Pattern of Accrual rates</b>	15% after 3 years, 20% after 5 years, 2% for each year between 5 and 15, 1% after 15 years, maximum 60%.	25% after 10 years, 1.25% for each year thereafter, maximum 60%
8. <b>Retirement Benefit - Adjustment For Higher Wage Earners</b>	75% of wages above \$250 p.w.	75% of wages above \$400 p.w. (if ceiling increased to \$600)
9. <b>Retirement Benefit - Payable If Still Employed</b>	Not paid if less than age 70 and wages more than 50% of wage ceiling.	Yes, once 60 or older regardless of income
10. <b>Retirement Benefit - Reduction for early payment</b>	4% per year before age 65	½% per month before age 65

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

**Figure 4.1. Projection Results – All Scenarios**



**Table 4.2 Summary Results – All Scenarios**

	<i>Low Dependency</i>	<i>Best Estimate</i>	<i>High Dependency</i>
<b>Expenditure First Exceeds Total Income</b>	2024	2022	2019
<b>Reserves Depleted</b>	2035	2032	2029
<b>General Average Premium</b>	15.2%	17.0%	19.0%
<b>Pay-as-you-go rate in 2036</b>	17.6%	19.0%	20.9%
<b>Pay-as-you-go rate in 2066</b>	24.8%	28.4%	32.2%
<b># of Contributors per pensioner – 2066</b>	1.7	1.5	1.3
<b>Actuarial Balance (% of Ins. Earnings)</b>	(5.4%)	(7.3%)	(9.4%)
<b>Actuarial Balance (% of GDP)</b>	(82%)	(121%)	(172%)

The recommendations related to benefit redesign are summarised below:

1. Contribution requirement for Retirement benefit be increased from 150 weeks to 500 weeks. As recommended by the SSRC, this requirement should be immediate for persons whose first contribution is made after the change but gradual for those who made contributions prior to the change.
2. Revise the pattern of accrual rates for pension calculations to one that provides 25% replacement after 10 years of contributions and 1.25% for each set of 50 contributions thereafter, up to the unchanged maximum of 60%.
3. When calculating Retirement benefit, average the best 5 years of insurable wages instead of the best 3 years of insurable wages. This will create a small improvement in the relationship between contributions and benefits and reduce the magnitude of pension increase that could be achieved by deliberately declaring larger earnings in the years just prior to retirement.
4. If the ceiling is increased to \$600 as recommended, revise the adjustment for the calculation of insurable wages to be used for pension purposes to use 75% of wages above \$400 instead of 75% of wages above \$250 per week.
5. Remove the income test applied to those who continue to work and receive Retirement pension.
6. Increase the reduction factors from 4% per year to ½% for each month that the Retirement pension is claimed before age 65.
7. For persons who because of their age may be entitled to Retirement benefit and because of the death of their spouse may be entitled to a Survivors pension, pay the higher of the two pensions but at least 60% of the combined pensions when both persons were alive.
8. For widows and widower who because of their age do not currently qualify for a survivors pension, pay a Survivors pension for one year.
9. All self-employed persons should be eligible to industrial benefits with the contribution rate set at 8.8%.
10. For Assistance pensions, include financial assets and real estate excluding one's residence, in determining whether or not the applicant should qualify for a non-contributory pension.
11. Sickness, Injury and Maternity benefits should only be paid if the employee actually faces a loss of income while off from work and the benefit amount should be the amount of the loss up to the maximum benefit payable.

The following table provides a list of the benefit provisions for which change is recommended and shows the current and recommended rules for each.

If implemented, the contribution rate for all self-employed persons should be set at 8.8%.

### Means Test For Assistance Pensions

Elderly, invalid and widowed residents who do not qualify for a Retirement, Invalidity or Survivors benefit may qualify for an assistance pension if they are deemed to be in need of financial assistance. Although the number of people receiving non-contributory or assistance pensions has been declining gradually, the number of new cases still exceeds what would reasonably be expected given that National Insurance has existed for almost 33 years and that only three years of contributions are required for a Retirement pension. Poor compliance among self-employed is perhaps the main reason for new persons qualifying for these pensions.

Another factor that affects the number of new cases is the test of resources and the lack of consistency of its application. In determining the eligibility of an adult to a non-contributory pension, the applicants' share of household income is assessed. While several administrative challenges are encountered in applying this test of resources, it is quite possible that persons who may be "asset rich" but "income poor" may qualify for the non-contributory pension. It is therefore recommended that the test of resources be revised to include financial assets and real estate other than one's residence. Should such assets exceed five times the annual pension, the application for the Assistance should be declined.

### Sickness, Maternity & Injury Benefits

One generally accepted social security principle is that benefits should replace lost income. However, to reduce the administrative effort required to verify that income has in fact been lost, some benefits are paid using a principle of presumed loss of income. At NIB, both approaches exist:-

- To receive Invalidity benefit, one must have no employment income while for Retirement benefit, employment income must be below a certain amount if the pensioner is under age 70.
- For Sickness, Maternity and Injury benefits, however, benefits are paid without any verification of whether wages have in fact been reduced when off from work.

Some employers, including the Bahamas Government, pay full wages when the employee is in receipt of Sickness, Maternity and Injury benefits. From the National Insurance Fund's perspective these are payments that need not be made as the employee has not suffered any financial loss. Therefore, it is recommended that NIB award Sickness, Maternity and Injury benefits only to persons who have reduced wages and the amount paid be the extent of the loss up to the maximum payable based on the person's insurable wage.

Implementing this income test may be administratively difficult given that there are more than 27,000 of these claims each year. A different approach to how these claims are made and paid as well as the inclusion of the employer in the claim and payment processes will be required.

## Chapter 5 Social Security Reform

Following the tabling in Parliament of the report of the 7<sup>th</sup> Actuarial Review in 2003, the Government established the Social Security Reform Commission (SSRC). The SSRC's mandate was to review the findings and recommendations of the 7<sup>th</sup> Review and recommend ways to Government of enhancing the Bahamas' primary social security system. Although the report of the SSRC entitled "*Better Social Security For Bahamians*" was accepted by Government in April 2007, the report has not been made public and no amendments emanating from it have been made.

The SSRC's recommendations for change were separated into four categories:

1. **Equity and Relevance** – changes aimed at ensuring that contribution and benefit provisions are fair and relevant in prevailing socio-economic conditions.
2. **Broadening The Scope** – changes aimed at ensuring adequate protection of income and expanding benefit coverage where gaps currently exist.
3. **Enhancing Operations** – reducing administrative costs and improving overall performance.
4. **Improving Financial Sustainability** – extending the life of reserves and reducing the contribution rate that would otherwise be required by future generations.

Many of these recommendations were similar to those of the 7<sup>th</sup> Actuarial Review. The author of this report supports most of the SSRC's recommendations which were adopted after extensive discussions with stakeholder groups and a wide cross-section of residents. And since no contribution or benefit amendments emanating from the 7<sup>th</sup> Actuarial Review and the SSRC report have been made, many of the recommendations in these two reports are repeated in this report.

It is important that governments consider and act upon the recommendations made in periodic actuarial reviews as population and socio-economic changes lead to new social and financial challenges to which National Insurance should respond. And with financial sustainability being a major concern, changes aimed at reducing long-term costs should be made sooner rather than later, as such changes often take several years before any noticeable financial impact is realised.

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

1. Healthy and growing economy,
2. A well designed system,
3. Effective and efficient administrative system, and
4. Honest and responsible government.

Although policymakers have limited control over future economic patterns, an economy in which employment levels and real wages are rising will contribute positively to long-term sustainability of the National Insurance Fund. The three other ingredients over which the Government, Board and management have more influence are discussed in the following sections.

## 5.1 A Well Designed System

Paramount to the future viability of the National Insurance Fund is a system where together, coverage, contribution and benefit rules provide adequate protection from income loss for current and former workers with the prospect of affordable contributions for future generations. While the initial design of the National Insurance system has provided reasonable protection for over 30 years, population, social and economic changes, along with increased administrative capabilities of the Board, warrant changes that will enhance the adequacy, reasonableness and sustainability of the system. The suggested design changes therefore focus on providing a suitable balance between the social objectives regarding relevance and financial objectives related to sustainability.

No change to NIB's general structure is being recommended. That is, the traditional mandatory, partially funded, defined benefit and publicly managed system of social security that exists throughout the Caribbean should be maintained. However, several changes to contribution, coverage and benefit rules are suggested.

### 5.1.1 Adjustments To Wage Ceiling, Pensions And Grants

There are three general approaches to adjusting the wage ceiling, pensions and benefit payment rates such as the minimum pension, Funeral and Maternity grants. These are:

1. **Ad hoc adjustments** – Regulations do not contain any provisions for periodic review.
2. **Adjustments in principle** – Regulations provide for periodic review without specifying procedure, mechanism or degree of adjustment.
3. **Automatic adjustments** – Regulations prescribe the procedure, mechanism and degree of adjustment.

National Insurance regulations currently indicate that the earnings ceiling and pensions should be reviewed once cumulative inflation since the last increase reaches 10%. However, this guidance has not worked well as after more than 30 years the wage ceiling has only been adjusted twice. Although several adjustments have been made to pensions, they have not occurred at regular intervals with the same basis for each adjustment. In some instances, pension increases have been timed to coincide with general elections.

It is therefore recommended that an automatic approach to adjusting parameters be adopted with regulations clearly prescribing the timing and procedure for adjusting all fixed-dollar rates and pensions. Frequent adjustments to both the wage ceiling and pensions will ensure that National Insurance remains relevant to both workers and pensioners, providing adequate levels of income protection as wages and prices increase due to inflation.

Specific guidelines for increasing the wage ceiling, pensions and all other fixed-dollar rates are described below:

whose pension is bigger – the current Survivors pension discriminates against the spouse with the lower pension.

To eliminate such anomalies and possible financial hardship that the present Survivors pension provisions may create, it is recommended that Survivors and Retirement pensions be paid as follows:

Case 1: Where both spouses are pensioners, the Survivor receives the higher of two pensions but no less than 60% of combined pensions.

Case 2: Where the Survivor pensioner later qualifies for an Age or Invalidity pension, pay 100% of the larger plus 50% of the smaller pension.

If these rules applied to the couple in the above example, the surviving wife would get a pension of \$600 per month while if the wife died first, the husband would keep his \$700 per month pension.

If this recommendation is adopted, persons who have already claimed Survivors' pensions and who are now receiving only the greater of two benefits would have their pensions reworked under the new rules and would receive larger pensions going forward only.

### Industrial Benefits For Self-Employed Persons

Industrial benefits are currently only available to a select group of self-employed persons – licensed drivers whose vehicle is for hire, licensed fruit/straw/vegetable vendors and share fishermen who own their boats. Excluding self-employed persons from employment injury or industrial benefits also exists in several Caribbean social security systems mainly for two reasons:

1. Industrial benefits for employed persons may be paid even where employer contributions are not up-to-date. Allowing self-employed persons to qualify under the same conditions would create a major disincentive for compliance, and the possible payment of a benefit without being able to recover the unpaid contributions.
2. Since many self-employed persons work alone, verifying that the injury or illness was indeed work-related could be more complicated than in a larger work environment.

For many self-employed persons, industrial benefits may be the benefits that they value most and thus they are currently not inclined to contribute. Experience with the small group who are currently covered in The Bahamas and elsewhere in the Caribbean where all self-employed are eligible for industrial benefits does not appear to show patterns of excessive costs related to self-employed persons. It is therefore recommended that all self-employed persons be covered for industrial benefits.

To reduce the potential abuse that may arise if self-employed persons were covered for industrial benefits, it should be required that he/she be "up-to-date" with their contributions at the time of the accident or onset of the disease. This need not be the case for employed persons, as the obligation to pay on time rests with the employer, with whom NIB can arrange for payment of late contributions. The term "up-to-date" will have to be defined but should be no longer than 2 months from the due date of the contribution for the month preceding the date of accident.

between contributions and pensions, especially for persons whose insurable wages increase considerably as retirement approaches. It would also result in a slight reduction in average pensions which in turn would result in a reduction in projected long-term costs.

If as recommended above, the wage ceiling is increased to \$600 per week, the adjustment of wages above \$250 that is now applied for pension calculations should be revised. For at least the first five years after the change, assuming that regular ceiling adjustments occur thereafter, an appropriate adjustment would be to take 75% of wages above \$400 per week.

The rules related to the award of Retirement benefit prior to age 65 should also be revised. Currently, the pension is reduced by 4% for each year that the age at award is less than age 65. If the pensioner returns to work and is under age 70, the pension is suspended if wages exceed 50% of the wage ceiling. Applying this limit is sometimes difficult as contributions may not be paid for that employee and the Board often receives negative publicity from it. It is therefore recommended that the income test be eliminated. However, the reduction factor applied to the early payment of pensions should be revised to one that is actuarially equivalent; that is, the option of taking a reduced pension earlier would be cost-neutral to both the Fund and the pensioner. The recommended factor is ½% for each month that the pension is awarded prior to age 65. If adopted, the reduction factor applied to a pension awarded at age 60 would be 30% instead of the current 20%.

### Survivors Benefits

Widows and widowers are eligible to a Survivors pension, if at the time of their spouse's death, they had children under the age of 16 or under 21 and still in school, or they are older than 40 and incapable of economic employment. Therefore, many widows and widowers do not qualify for any benefits at all following the death of their spouse. To provide some financial assistance in the period immediately after the death of a spouse, it is recommended that a Survivors pension be paid for one year to those who meet the contribution conditions but fail to meet the age, employment and dependency conditions.

### Survivors & Retirement Benefits

Under current rules, should an insured die and leave a widow or widower who is in receipt of a Retirement pension, or later qualify for a Retirement pension, only the larger of the Retirement and Survivors pensions is paid. As a consequence, it is possible for household income to fall by more than 50% should one pensioner die. For example, if the husband's monthly pension is \$700 and the wife's \$300, total household income would fall from \$1,000 to \$350 after the husband's death. (\$350 is the greater of 50 per cent of \$700 and \$300) Therefore, there would be a strong argument that in such a case more than just the greater benefit be paid as household income does not fall by as much as 50 per cent following the death of one person. Also, the pension to the surviving spouse could differ depending on who dies first. Using the above example, if the wife had died first, the husband's pension would have been \$700. (\$700 is the greater of \$700 and 50 per cent of \$300, or in this case the minimum pension.) Therefore, if both spouses shared household income equally – regardless of

1. The wage ceiling, all pensions, grants and other fixed-dollar amounts should be adjusted each January.
2. The adjustment for pensions in payment should be based on the average of the most recent three years price inflation (as determined from the Retail Price Index). For example, the increase for 2009, which will be determined in 2008, would be average inflation for the period 2005 to 2007. 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.
3. Given that The Bahamas does not have a national wage index, use of the Retail Price Index (RPI) is acceptable for the purpose of adjusting the wage ceiling. However, since wages tend to increase at a higher rate than inflation, it is recommended that until a reliable national wage index is established, ceiling adjustments be made at a rate of 1% above the three-year average increase in the RPI.
4. Minimum pension rates, Funeral and Maternity grants should be increased by the same rate as pensions in payment, as determined in 3 above.
5. 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.
6. Automatic pension increases should only be granted to persons living in The Bahamas.

The pension adjustments that took effect in March 2007 raised the various minimum pensions to adequate levels. Therefore the next adjustment should be in line with the above recommendations.

For the wage ceiling, which is currently very low at only 0.8 times average national wage and has not been adjusted since 1999, an increase is recommended. Based on actual wage increases since 1999, the average national wage and the income distribution of workers in The Bahamas, it is recommended that the wage ceiling be increased to \$600 per week by January 2009. This adjustment could be made in either one or two steps. Annual adjustments as described above would then be appropriate.

### 5.1.2 Wages Covered

Social security benefits are designed primarily to replace lost income following temporary or permanent disruptions in employment due to contingencies such as sickness, maternity, retirement, death and invalidity. It is therefore desirable that benefits bear a close relationship to actual employment earnings.

There are two factors that affect the relationship between regular earnings and benefit levels:

- (i) The level of the wage ceiling, which affects those with earnings above the ceiling, and
- (ii) The components of regular earnings that are covered.

As highlighted in Table 2.2, the wage ceiling which has been increased only twice since inception and not since 1999, is currently very low. In 2006, between 35% and 40% of contributors had earnings that exceeded the weekly \$400 ceiling.

Employer practice varies regarding the payment of wages in excess of the requirement of the Employment Act when an employee is off sick or on maternity leave. However, with only 25% of non-government workers enrolled in employer-linked pension plans, the majority of Bahamian workers will have the National Insurance Retirement pension as their only source of reliable income in old-age. For higher income workers, therefore, a relatively low ceiling means that this pension will provide only limited replacement of their pre-retirement earnings.

Since inception, insurable wages for NIB purposes have included only base wages from the primary employer. Income components such as overtime, allowances, tips and gratuities are excluded. For many workers, especially in the hospitality industry, these other sources of income are substantial and since NIB contributions are not paid on these earnings, benefit amounts represent a lower percentage of regular income than they are for another worker whose entire employment income is insurable. As a result, persons with more than one job and many in the hospitality sector have a lower level of income protection than other workers.

The issue of what wages are covered also affects pensionable civil servants, whose earnings ceiling for pensions is lower than the wage ceiling for other benefits. As a result, when sick, the weekly benefit is 60% of actual wages up to \$400 per week, whereas for pensions, the weekly pension is a maximum of 60% of \$110 per week. While this disparity was initially put in place to prevent lower paid pensionable civil servants from receiving combined NIB and Government pensions that exceeded pre-retirement income, this possibility no longer exists.

It is therefore recommended that:

1. Employers should deduct and pay contributions for every employee, regardless of whether or not he/she has other employment. Where wages from multiple employment exceed the wage ceiling, appropriate refunds should be made to employers and workers.
2. While overtime and allowances may continue to be excluded, tips and gratuities that are paid together with base wages and bring total earnings up to the wage ceiling should be insurable. The full contribution on these tips and gratuities should be made by the employee only.
3. For civil servants, the earnings ceiling for pensions should be increased to the same level as for other workers with the introduction of a new formula for determining pensions that accounts for the fact that contributions were made on lower wages for previous years.

### 5.1.3 Benefit Redesign

#### Retirement Benefit

In 2006 Retirement benefit payments represented 46% of all benefit expenditure. As NIB matures, this percentage will increase to around 80%. It is therefore important that the eligibility rules and

benefit formula provide payments to insured persons that are reasonable; that is, neither overly generous nor too small, but in most cases, reasonably well linked to actual contributions.

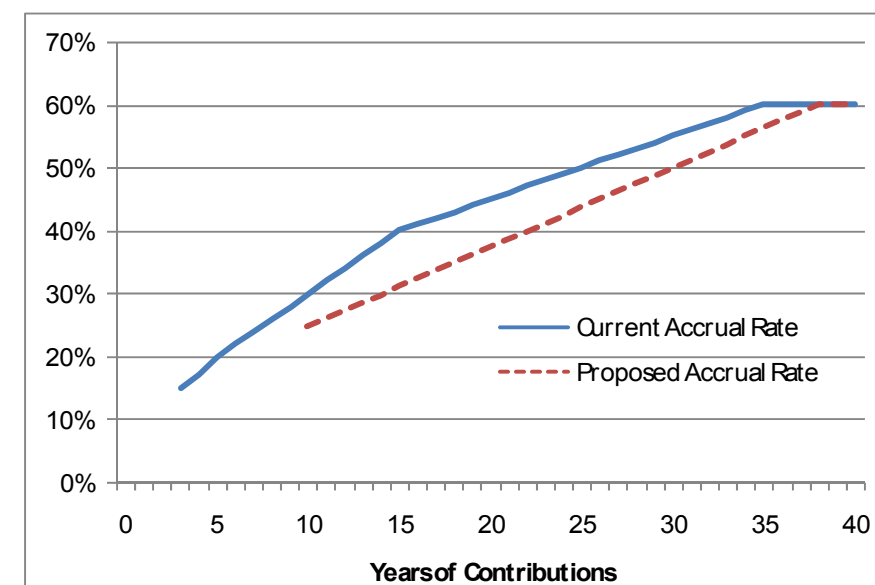
The current eligibility requirement of only 150 weeks (three years) to qualify for a lifetime pension is extremely generous. It is therefore recommended that the number of contributions required for Retirement pension be increased to 500 weeks, approximately 10 years. For persons who fail to meet this requirement, a one-time grant should be paid. For Bahamian residents who are awarded a Retirement grant, an Old Age Non-contributory pension could still be awarded if an assessment of their income and resources reveals that such assistance is justified.

With a change in contribution requirements, the pattern of pension accrual rates will also need to be revised. Currently, pension replacement rates begin at 15% after 3 years of contributions, increase to 20% after 5 years with further increments of 2% for each set of 50 contributions between 250 (5 years) and 750 (15 years) and 1% increments for each additional set of 50 weeks until the maximum of 60% is reached after approximately 34 years of contributions. If the contribution requirement is increased to 500 weeks, it is recommended that the following pattern of accrual rates be adopted:

25% plus 1.25% for each set of 50 weeks after the first 500.

The following chart shows the current and proposed pattern of accrual rates.

**Figure 5.1. Current & Proposed Pension Accrual Rates**



As shown above, the proposed schedule of accrual rates will result in slightly smaller pensions for almost all contribution periods. These pensions would still be considered adequate as they are well in excess of ILO Convention 102 minimums. The same schedule of accrual rates would be used for Invalidity benefit.

It is also recommended that the number of years over which wages are averaged when calculating Retirement benefit be increased from 3 years to 5 years. This change would improve the relationship