Guyana

Report to the Government

Sixth Actuarial Review of the National Insurance Fund as of 31 December 2001

International Financial and Actuarial Service
Social Protection Sector
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Abbreviations and acronyms

CARICOM	Caribbean Community
GY$	Guyana dollar
GDP	Gross domestic product
IB	Industrial benefits
ILO	International Labour Organization
ILO FACTS	International Financial and Actuarial Service, ILO
IMF	International Monetary Fund
IPS	Investment policy statement
NIB	National Insurance Board, also referred to as the “Board”
NIF	National Insurance Fund, also referred to as the “Fund”
NIS	National Insurance Scheme
PRGF	poverty reduction and growth facility
RER	Reserve-expenditure ratio
SBMC	Sickness benefit medical care
STB	Short-term benefits
TFR	Total fertility rate
USD	United States dollar

Exchange rate

As of 31 December 2001: 1 USD = 188.5 GY$

Foreword

Section 37 of the National Insurance Act, requires that an actuarial review of the Guyana National Insurance Fund (NIF) be conducted at least every five years. This is the sixth review of the NIF and has been performed as at 31 December 2001, and comes three years after the previous review.

In 1999, the International Labour Organization (ILO) and six Caribbean countries, including Guyana, entered into bilateral agreements under which the social security scheme of each country will receive two actuarial reviews and training for its in-house actuarial and statistical personnel. This five-year programme is known as the ILO Umbrella Programme for Actuarial Reviews to Selected Countries of the Caribbean.

The main objectives of this review are to determine the long-term financial condition of the NIF and to review contribution and benefit provisions, making recommendations where appropriate. The NIS requested the ILO to review specific issues including:

- Providing medical care for old-age pensioners;
- Paying both a survivors' pension and either old-age or invalidity pension;
- Introducing an optional old-age pension at age 55;
- Increasing the amount of the maternity grant.

This report is divided into two sections. The main report contains an analysis of recent experiences and results of population, economic and NIF projections up to 2062 and a brief discussion of several policy and operational issues complete this section. The appendices contain a summary of key NIF contribution and benefit provisions, a description of the methodology used for the valuation and detailed tables related to data, assumptions and projection results. They also provide an analysis of the experience of each benefit branch since the last actuarial valuation for the period 1999-2001.

Acknowledgements

The Project Actuary of the ILO Umbrella Programme for Actuarial Reviews to Selected Countries of the Caribbean, Mr. Derek Osborne, was appointed by the ILO to undertake this assignment. The Actuary visited Guyana in November 2002 to gather the necessary data and held discussions with the Minister of Finance and other Ministry officials, the tripartite National Insurance Board (NIB), National Insurance Scheme (NIS) senior management, and representatives of workers and employers' organizations. In August 2003 a draft report was submitted to the NIS and its findings and recommendations were presented to the National Insurance Board in September 2003.

The ILO is grateful for the contributions received from Ms. Holly Greaves and Ms. Dionne Rutherford who are Guyana's national counterparts under the ILO Umbrella Programme for Actuarial Reviews to Selected Countries of the Caribbean. Their tasks included gathering the data and assisting the Actuary.

The ILO Director-General wishes to express his sincere thanks to Dr. Roger Luncheon, Chairman of the National Insurance Board and Mr. Patrick Martinborough, General Manager of the National Insurance Scheme for their collaboration and assistance provided throughout this project.

Executive Summary

Review of past performance since 1999

Some of the benefits that current NIS contributors anticipate receiving will be paid more than fifty years from today. Therefore, to determine whether or not Guyana's social security system is sustainable over the long term, periodic actuarial reviews are conducted. In these reviews an examination of the Fund's current and projected future financial status is made. The actuary is also expected to recommend steps that may be taken to help ensure that the scheme remains solvent for future generations, while providing meaningful benefits to current workers and pensioners.

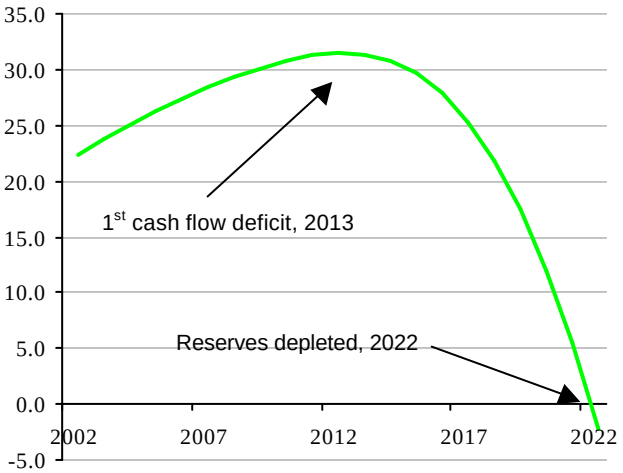
In Guyana, high outward migration, many years of low or negative economic growth and falling interest rates have significantly impacted future NIS finances. With a pensioner population that is growing at a faster rate than the number of contributors and a contribution rate that is below the average cost of benefits payable in the future, reserves will become exhausted unless contribution rate increases are made. Therefore, to ensure that one of Government's most important social programmes continues to meet its objectives, timely and appropriate responses to these challenges are required.

Between 1999 and 2001, overall experience was better than projected under the previous actuarial valuation. On 31 December 2001, NIS reserves stood at GY$19.3 billion or 4.2-time total expenditure in 2001. Together with future contributions at 12 per cent of insurable earnings, these reserve funds are insufficient to meet expenditure for the long term.

Actuarial projections

Along with a review of the Fund's position as of 31 December 2001, this report includes projections of NIB income, expenditure and reserves through 2062. Since the estimation of future experience is uncertain and depends on many demographic and financial assumptions, three scenarios are presented to show the plausible range of outcomes. These scenarios have been named *Pessimistic*, *Intermediate* and *Optimistic*, and differ with respect to future population and economic experience. Figure 0.1 depicts the projected trend for NIS reserves under the *Intermediate* scenario, assuming that the contribution rate and benefit provisions remain unchanged.

Figure 0.1 Projected NIS reserves – *Intermediate* scenario



The key results of the *Intermediate* scenario projections are:

- The ageing of the general population will have a major impact on the ratio of workers to retirees. It is projected that the number of NIS contributors for each pensioner will fall from 4.4 in 2001 to 1.9 in 2062.

- Annual expenditure is projected to exceed that year's contribution income once again beginning in 2006.

- Reserves are expected to begin decreasing in 2013, when total expenditure will exceed total income for the first time. Nine years later, in 2022, reserves are projected to become exhausted.

- The pay-as-you-go-rate, or the rate required to produce just enough contribution income to meet expenditure if there is no Fund, will increase from 10.8 per cent in 2001 to 17.2 per cent in 2022. This rate will increase gradually to almost 29 per cent in 2062.

- The constant contribution rate beginning in 2003 that would make the present value of contributions equal to the present value of expenditure through 2062 is 18.8 per cent.

For the *Pessimistic* scenario, the first cash flow deficit is expected in 2009 with Fund depletion in 2019, while in the *Optimistic* scenario, expenditure is projected to exceed income beginning in 2019 with Fund depletion in 2028.

To avoid depletion of reserves and secure a reserve level of at least five times expenditure in 2039 (60 years after inception) and two times the expenditure in 2062 rate increases of 1 per cent each year from 2004 to 2010 will be required. This would bring the total contribution rate to 19 per cent. Alternatively, the rate may be increased 2 per cent every five years reaching 20 per cent in 2019. This is presented in view of a missing funding rule as such in the legislation.

These results, while more optimistic than those presented in the Fifth Actuarial Review, show similar trends for income, expenditure and reserves. They indicate that, unless reforms are made, depletion of reserves is expected within 25 years, even under the *Optimistic* scenario. They also show that the contribution rate in the future will have to be higher than the present 12 per cent. Therefore, if NIS is to meet its commitments to future generations of pensioners, higher contribution rates and/or reduced benefit promises will be required.

Recommendations

ILO recommendations are provided under three main categories relating to benefit provisions, financial sustainability and governance and other considerations. They are summarised as follows:

Recommendations related to benefit provisions:

(1) Increase the funeral and maternity grants to levels that are consistent with explicit financial objectives. For the funeral grant, the rate should be at least GY$15,000, which represents approximately 25 per cent of the cost of an average funeral. More generous benefits could be provided to account for the actual cost of funerals. For the maternity grant, the objective could be 50 per cent of the cost of a normal delivery in private facilities, or GY$7,500. The amounts of both grants should also be related to the

minimum pension so that they are adjusted in line with pension increases (c.f. Sections 4.6, 4.7, 4.9)

(2) Increase the reference period for the average pensionable salary calculation. For the calculation of old-age and invalidity pensions, the average insurable earnings of the best three years in the last five is presently used. As insurable earnings for some insured persons tend to fall as they advance in age the reference period for the calculation of the average of the best insurable earnings should be increased to include at least the last 10 years. (c.f. Section 4.4)

(3) Increase the minimum pension payable to widows and widowers from 50 per cent of the minimum old-age pension to the same rate as for old-age and invalidity pensions. Consideration should also be given to allow the payment of the combined old-age pension and survivor's pension to entitled widow(er)s, instead of only the higher of the two. The financial implications of this measure are not significant but such an amendment would improve the livelihood of many pensioners (c.f. Section 4.5)

(4) Review the provisions governing the payment of survivors' benefits. The eligibility conditions for widowers should be changed and made the same as those for widows. Consideration may also be given to allowing for the payment of a benefit to more than two children and the payment to children where one parent is still alive. (c.f. Section 4.12)

(5) Consider providing Sickness Benefit Medical Care (SBMC) to all pensioners. While complete cost estimates of this change have not been made, it is expected – for illustrative purposes - that this extension of SBMC will cost less than increasing the minimum pension to the level of the minimum wage. (c.f. Section 4.2)

(6) Consider reducing the number of weekly contributions required to qualify for a pension from 750 to 500. While this change will increase NIS costs, more elderly persons will receive the security of a lifetime pension instead of only a one-time grant that is only worth about two monthly payments of the minimum pension. (c.f. Section 4.3)

(7) Consider amending the eligibility conditions for sickness benefits to allow seasonal workers to qualify (c.f. Section 4.15)

Recommendations related to financial considerations:

(8) Adopt a funding objective and rule and a policy on future contribution rate increases that will bring long-term sustainability to the NIF as part of a deliberate and comprehensive review of the NIS' benefits, future financing, administration and investment strategies. The schedule of contribution rates adopted should be the subject of future actuarial reviews that will assess it in line with the adopted funding objective and rule.

(9) Adopt an investment policy statement for the NIF.

(10) Increase the diversification of assets by reducing the proportion of investments held in treasury bills and possibly investing some of the funds overseas following the recommendations of an investigating on the matter. (c.f. Section 5.2)

Recommendations related to administration and other aspects:

(11) Continue to seek ways of reducing administrative costs with a 5-10 and 15-20 year objectives to reach a maximum level of 1 per cent of insurable earnings. (c.f. Section 4.10)

(12) Provide to all past and current contributors annual contribution statements that indicate past contributions, their benefit eligibility status and what, if any, additional contributions are required to qualify for certain benefits. Through this statement, insured persons would know their benefit status and be better prepared to plan for retirement. Compliance levels should also be enhanced, as employers would be more likely to quickly hand over contributions deducted from employees' wages. Queries made by insured persons will also help to improve the completeness of NIS' database. Once contributions from previous periods are available electronically, such statements could also show all contributions on file. This will allow insured persons to verify the contributions made on their behalf before retiring, ensuring that the correct pension is paid when they retire. (c.f. Section 4.11)

(13) Initiate extensive public information campaigns as an ideal precursor to public hearings to obtain ideas on practical ways of ensuring that NIS remains adequately funded, indefinitely and public support exists. Such public information campaigns should be aimed at:

- increasing general awareness of National Insurance, the benefits offered and the need to plan for retirement;
- encouraging self-employed persons to register to the NIS and to contribute
- informing the public about NIS' future challenges and the likely reforms that will be required to maintain the future sustainability of the NIS

Reform imperative to maintain the financial sustainability of the NIF

The actuarial projections highlighted are not unlike those of similarly designed social security schemes in the United States, Europe and the Caribbean. In Barbados, for example, following the most recent actuarial review in which the Fund was projected to be exhausted between 2025 and 2030, a pension reform exercise was initiated. After extensive discussions with stakeholders and the general public, several far-reaching reforms became effective in January 2003 such that increases to the contribution rate, increases in the retirement age, reductions in benefit accrual rates along with annual adjustments to the ceiling and pensions were adopted.

The NIS may be required to focus on similar reforms as this actuarial valuation indicates that the present contribution rate of 12 per cent of insurable earnings will not be sufficient and the NIF will not be financially sustainable in the long-term financial and future generations will suffer if nothing is done as soon as possible. It appears that little leeway exists in terms of reducing benefit costs as most benefit expenditure relate to old-age benefits of which nearly 70 per cent are paid out in the form of the minimum pension whilst the others receive old-age grants. Therefore contribution rate increases will be the primary reform measure to restore the long-term financial viability of the NIF by way of increasing income. Additional income and cost savings could be obtained from a more diversified investment portfolio and reduced administrative expenditure, respectively.

Ignoring the long-term projections presented in this review and previous actuarial reviews will exacerbate future financial challenges and weaken Guyana's social security system. The consequences of not taking action soon will be great – extremely high contribution rates in the future, an inability to increase pensions to compensate for the effects of inflation and the

need for Government subsidies. The Government is encouraged to initiate major reforms now to bring long-term sustainability to the Fund. Less substantial amendments will merely postpone depletion of NIS reserves by a few years.

Before making such changes, wide-ranging and frank discussions with Guyanese decision-makers should be held. It is recommended that a tripartite consultative committee on social security be formed. Such a committee should comprise technical advisors in addition to a limited number of dedicated policy-makers from both government and opposition parties as well as leaders of key stakeholder groups amongst employers' and workers' representatives. The mandate of this committee should include:

- Extending the coverage of the NIS to more workers and categories of workers difficult to reach with the possibility of using alternative mechanisms /intermediaries to reach them;
- Reviewing NIS benefit provisions in light of the needs of the insured population;
- Reviewing the NIF financing strategy;
- Reviewing the administration, computerisation, inspectorate, customers' service and public information functions of the NIS;
- Reviewing the investment strategy of the NIS
- Analysing the lessons learnt from the reforms adopted in other countries
- Informing and listening to contributors and pensioners
- Recommending practical ways of securing NIS pensions for future generations.

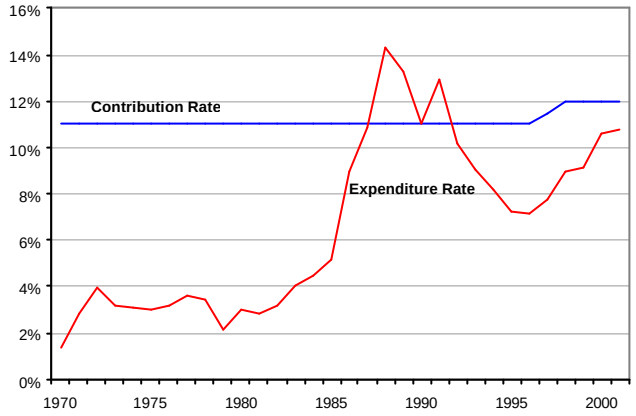
1. Review of financial experience and developments since last actuarial valuation

1.1 Financial experience, 1970-2001

The National Insurance Scheme began operations in September 1969. The following three charts illustrate its financial experience in several key aspects from 1970 to 2001.

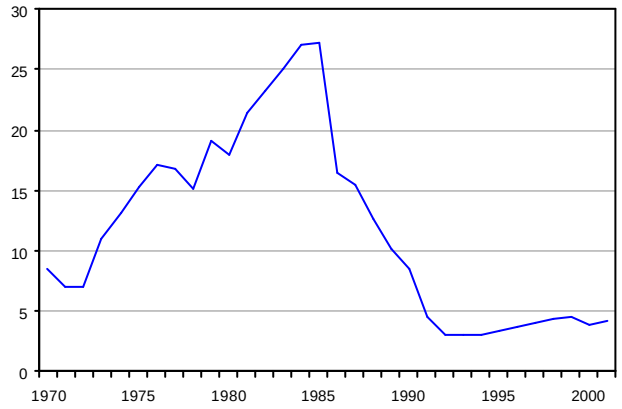
Selected NIS development indicators, 1970-2001

Figure 1.1 NIS Contributions and expenditure, 1970-2001 (% of insurable earnings)



When expenditure is expressed as a percentage of insurable earnings, it can be easily compared with the contribution rate. While the contribution rate remained constant for almost 30 years, the trend for expenditure was generally upward. In the late 1980's, following large benefit increases, expenditure exceeded income for several years. When this occurred, portions of investment income had to be used to meet payments. While contributions currently exceed total expenditure, the gap is narrowing, and expenditure will soon exceed contributions unless rate increases are made.

Figure 1.2 NIS reserve-expenditure ratio, 1970-2001

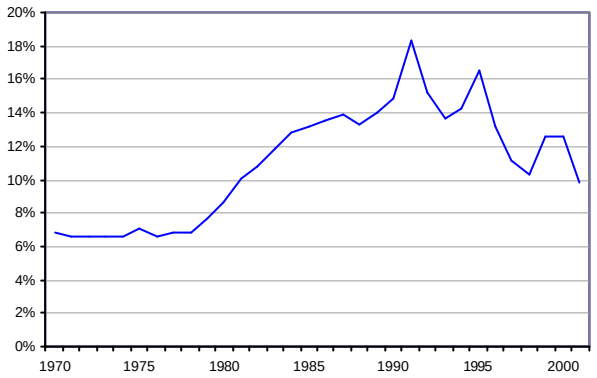


The reserve-expenditure ratio (RER) reflects the size of the year-end reserve relative to that year's expenditure and is a useful measure of how well a social security scheme is funded at any point in time.

As seen from the chart, funding levels fell dramatically in the late 1980's due to significant increases to pensions in payment. At the end of 2001, the RER stood at 4.2.

While this does not mean that the Fund can only meet four more years worth of expenditure, a ratio this low for a scheme that is not yet mature indicates the need for strengthening.

Figure 1.3 NIS nominal yield on reserves



Observed rates of NIS investment return (% per annum)

	Nominal rate of investment return	Real rate of investment return
1992 to 2001	12.9%	5.2 %
1997 to 2001	11.3 %	6.3 %
2001	9.8 %	8.3 %

While the Fund has realised very good rates of return over the last decade, recent declines in prevailing interest rates, coupled with the predominance of short-term treasury bills in the portfolio, have led to declining yields.

1.2 Developments since the last actuarial review

The projections of the Fifth Actuarial Review suggested that, if the combined contribution rate is kept at 12 per cent and benefit provisions are not changed, pension branch reserves would be exhausted in 2011. In addition, it indicated that contribution rates for all benefits over the next three decades would have to be increased to around 26 per cent. The key recommendations in the Review, therefore, called for the development of a policy for future rate increases along with other changes that would enhance the long-term viability of the Fund. These changes included diversification of the investment portfolio and a reduction in the amount spent on administrative expenses.

1.2.1 Recent amendments to NIS regulations

Several amendments were made to NIS Regulations between 1999 and 2001. While most of them resulted in increased pensions, benefits and insurance coverage, none of the changes dealt with strengthening the long-term position of the Fund.

Following is a list of the amendments made between January 1999 and December 2001.

- The ceiling on insurable earnings was increased as follows:
  - 1 October 1999 – from GY$46,000 to GY$60,000 per month
  - 1 January 2000 – from GY$60,000 to GY$76,000 per month
- The minimum rates for old-age and invalidity pensions were increased as follows:
  - 1 October 1999 – from GY$5,723 to GY$7,500 per month
  - 1 January 2000 – from GY$7,500 to GY$9,500 per month
  - 1 June 2001 – from GY$9,500 to GY$10,450 per month
- Pensions-in-payment above the minimum pension level were increased as follows:
  - By 7.8 per cent effective 1 January 2000
  - By 10 per cent effective 1 June 2001
- A minimum insurable earning of GY$18,750 per month was introduced for self-employed persons in October 1999. This was increased to GY$23,750 per month on 1 January 2000.
- The funeral grant was increased from GY$7,260 to GY$7,986 effective 1 January 2000 and to GY$8,785 as of 1 January 2001.
- The limit on reimbursements for Sickness Benefit Overseas Medical Care Cost was increased in October 1999 from GY$460,000 to GY$600,000 per case and then to GY$760,000 per case effective 1 January 2000.

A summary of NIS' coverage, contribution and benefit provisions is provided in Appendix I.

1.2.2 Financial developments, 1999 to 2001

The following table summarizes income and expenditure for 1999-2001. Additional details may be found in Appendix V. Noteworthy from the experience during these three years is the decrease in annual surpluses (excess of income over expenditure) each year. This has occurred as expenditure continues to increase at a faster rate than income. As will be seen in Chapter 3 of this report, this trend is expected to continue.

Table 1.1 Summary of NIS finances, 1999-2001 (billions of GY$'s)

	1999	2000	2001
Income			
Contributions	4.069	4.868	5.099
Investment	1.520	1.837	1.694
Other	0.016	0.018	0.017
Total	**5.605**	**6.723**	**6.810**
Expenditure			
Benefits	2.520	3.591	3.888
Administrative	0.587	0.722	0.683
Total	**3.107**	**4.313**	**4.571**
Annual surplus (deficit) (income over expenditure)	**2.498**	**2.410**	**2.239**
Revaluation surplus	**-**	**0.488**	**-**
End of Year Reserves	**14.121**	**17.018**	**19.257**

In the Fifth Actuarial Review, explicit long-term financial projections were only presented for the pensions branch. Following is a comparison of actual experience during the past three years with the projections of the Fifth Actuarial Review for the pensions branch:

- Contribution collections were lower than projected while investment income was higher than projected. When combined, total income was slightly higher than projected.

- Total expenditure was less than projected, both in terms of dollars and as a percentage of insurable earnings (pay-as-you-go rate).

- The end of year reserve for 2001 was higher than projected (GY$15.0 billion versus GY$13.0) and the reserve-expenditure ratio was also higher than projected (4.2 versus 3.1).

For the short-term and industrial benefit branches, cost projections were expressed as a percentage of insurable earnings. For the short-term benefit branch, actual expenditure averaged 1.9 per cent of insurable earnings compared with the projection of 2.2 per cent. For the industrial benefit branch, actual costs of 0.6 per cent of insurable earnings were much lower than the 1.5 per cent projected. Overall, therefore, experience was better han projected.

For this review, long-term financial projections have been made for the three benefit branches consolidated together. Since current contribution allocations made to the short-term and industrial branches exceed what is necessary, and reserves are also higher than pay-you-go-financing requires, the combined projections suggest a more optimistic picture than projections of the pensions branch only that were made in the last actuarial review.

1.3 Investment portfolio

At the end of 2001, the NIF investments stood at GY$17.7 billion, up from GY$10.7 billion at the end 1998. During the period from 1999 to 2001, no new major types of investments were introduced and the amount held in fixed deposits decreased while holdings of treasury bills increased significantly.

Table 1.2 Summary of investments, year-end 2001 and 1998 (millions of GY$'s)

Investment Category	2001		1998	
	$'s	%	$'s	%
Treasury Bills	13,692	77.1%	4,796	44.7%
Cash & Fixed Deposits	2,396	13.5%	4,071	37.9%
Bonds	800	4.5%	800	7.5%
Equity Investments	479	2.7%	479	4.5%
Private Sector Loans	365	2.1%	143	1.3%
Government of Guyana Debentures	6	0.0%	422	3.9%
Overseas Government Debentures	21	0.1%	21	0.2%
Total	**17,760**	**100.0%**	**10,734**	**100.0%**

An analysis of NIF investments at the end of December 2001 reveals the following:

- 77.1 per cent of the portfolio was held in Government of Guyana treasury bills.
- 13.5 per cent of the Fund was held in cash and fixed deposits.
- Equities made up less than 3 per cent of the portfolio.
- 99.9 per cent of the Fund's investments were domiciled in Guyana.

A more detailed analysis and discussion of NIS investments, along with recommendations for enhancing the NIF return perspectives on its investment portfolio, diversification, asset-liability matching and overall management may be found in Chapter 5.

2. Population and economic projections

The future NIS income and expenditure are linked to projections of Guyana's total population and future economic activity. Population projections provide estimates of the number of persons who will make up the labour force and likely NIS contributors, while projections of gross domestic product (GDP) and worker productivity growth indicate how many workers are needed in the economy and what their average incomes may be.

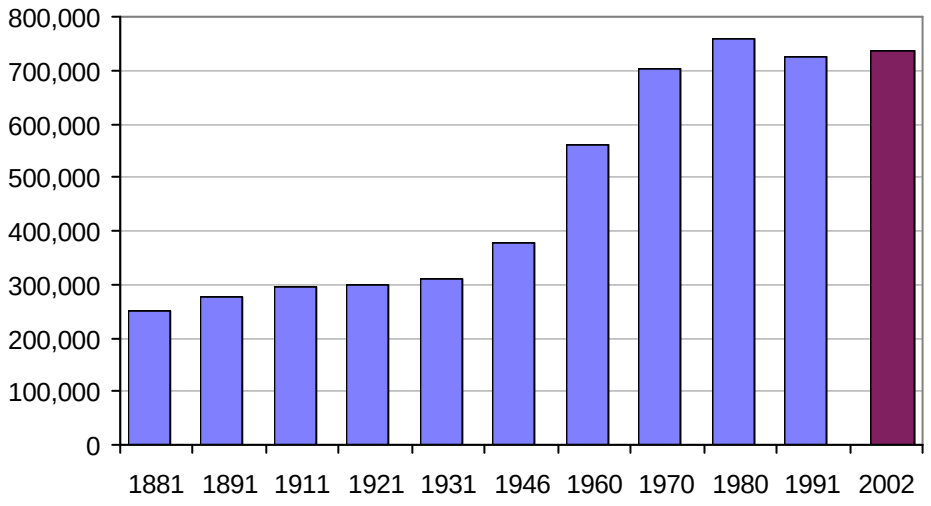
This chapter presents a summary of the assumptions and projection results. Further details may be found in Appendix II.

2.1 Population projections

The last official population census took place in 1991. At the time of writing this report analysis of the 2002 Census was underway and preliminary results were not yet available. The number of persons enumerated in the 1991 Census was 723,674, and officials of the Statistical Bureau have indicated that they expect the 2002 Census to reveal a population of around 735,000.

Significant net outward migration from Guyana began in the 1970's. As can be seen from the results of recent censuses presented in Figure 2.1, after decades of population growth, the population fell between 1980 and 1991, and it is expected that the 2002 figure will be only slightly higher than that of 1991. At this level, implied net outward migration between 1991 and 2002 exceeds 11,000 per annum.

Figure 2.1 Census populations of Guyana, 1881 to 2002



Note: The 2002 figure is an early estimate of the 2002 population census results.

The main determinants of future population changes are fertility, mortality and net migration. Fertility rates determine the number of births 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 Guyana. Given the variability of these factors, especially migration, three separate population projections have been performed.

Population estimates between 1991 and 2002 suggested populations higher than the 735,000, which is what is currently estimated. As a result, reported levels of fertility and crude birth and death rates are likely to have been understated. For this report, the estimated total fertility rate (TFR) in 2002 is 2.8, while the Guyana Poverty Reduction Strategy Paper indicates that the TFR in 2000 was 2.3.[1] These rates indicate total births consistent with current reported births in Guyana.

In 2000, life expectancy at birth was estimated by the Statistical Department at 66. While further improvements in life expectancy have been predicted, the increasing prevalence of HIV and AIDS in Guyana may retard previously expected improvements. For these projections, initial life expectancies are assumed to be 63 and 69 for males and females, respectively, and improvements in mortality are assumed to occur at a medium rate in accordance with United Nations estimates.

With the above assumptions, life expectancy at birth in 2062 is estimated to be 76.5 for males and 81.7 for females. At age 60, life expectancy is projected to increase from 17.5 to 20.5 years and from 19.8 to 24.3 years for males and females, respectively.

As mentioned earlier, Guyana has historically seen more people permanently leaving than entering. For each of the three scenarios modelled, net outward migration is assumed to decrease within the next 20 years. Thereafter, outward migration is assumed to be a fixed percentage of the working-age population.

The following table indicates the differences in the assumptions of the three population projection scenarios. Further details of these and all other assumptions may be found in Appendix II.

Table 2.1 Assumptions for population projections

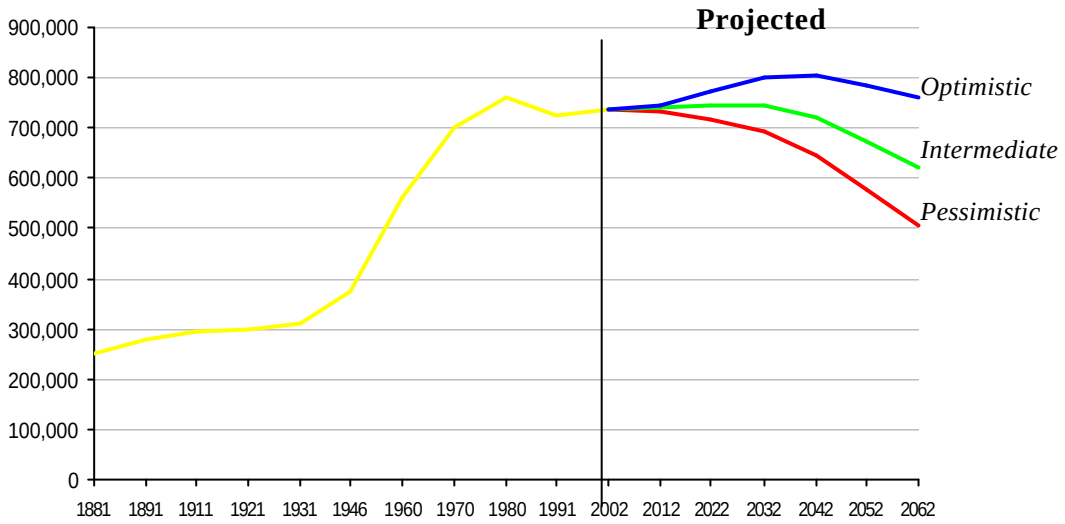
	Pessimistic **scenario**	***Intermediate*** **scenario**	***Optimistic*** **scenario**
Fertility	2.8 in 2002 decreasing to 1.9 in 2025	2.8 in 2002 decreasing to 2.0 in 2025	2.8 in 2002 decreasing to 2.1 in 2025
Net outward migration	10,000 in 2003 decreasing to 7,000 in 2020, 1.3% of working age population, thereafter	10,000 in 2003 decreasing to 5,000 in 2020, 1.0% of working age population, thereafter	10,000 in 2003 decreasing to 3,000 in 2020, 0.7% of working age population, thereafter

[1] The TFR represents the average number of children each woman of childbearing age would have if she had all her children in a particular year. If there is no migration, a TFR of 2.1 is required for each generation to replace itself.

For all three scenarios, the same mortality assumptions have been used.

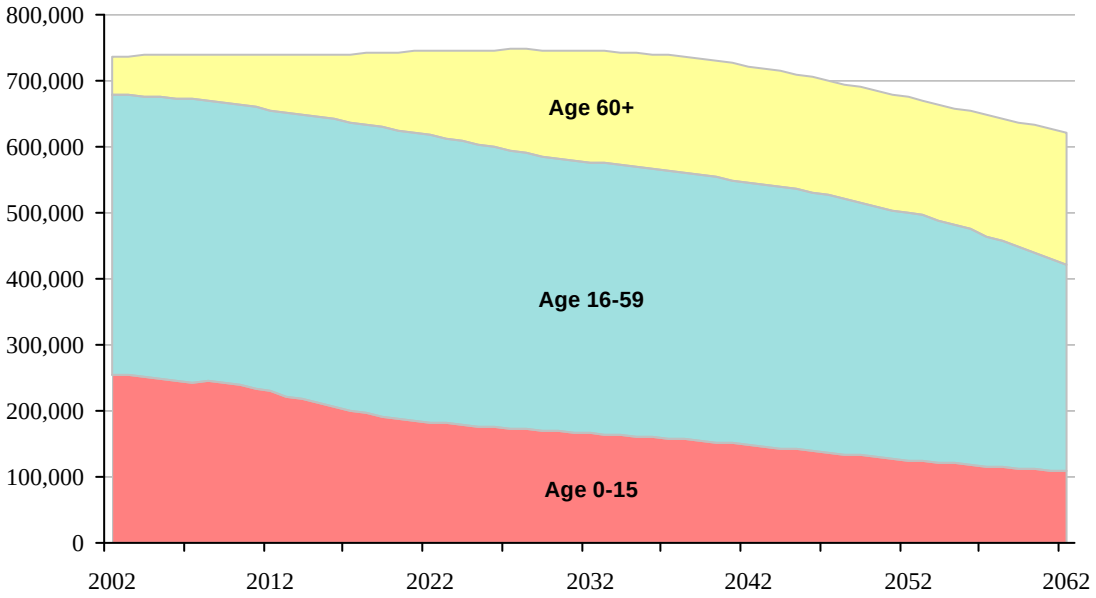
Figure 2.2 shows population totals from historical censuses along with projected total populations under the three scenarios.

Figure 2.2 Census population and projected populations under the three scenarios



Under the *Intermediate* scenario, if the projected population is split into three major age categories, then the changes in the relative size of each age group illustrate the gradual ageing of the total population.

Figure 2.3 Projected Guyana population in by age category – *Intermediate* scenario



Under the *Intermediate* scenario, highlights of the age category projections are:

- The number of children will decline significantly as birth rates fall and children migrate with their parents;

- The proportion of the population that is 60 and over will increase from 8 per cent to 32 per cent over the next 60 years;

- The working-age population will fluctuate slightly around its present level with gradual declines beginning after 2020;

- While the number of children and working-age persons is expected to decrease, the number of persons 60 and over will increase.

The following table contains numerical details of the population projections for the *Intermediate* scenario for select years between 2002 and 2062. Similar tables for the *Pessimistic* and *Optimistic* scenarios may be found in Appendix III.

Table 2.2 Projected Guyana population – *Intermediate* scenario

Year	Total	Age 0 - 15	Age 16 - 59	Age 60 & over	Ratio of Persons 16-59 To 60 & Over
2002 Est	735,009	254,390	422,911	57,708	7.3
2003	736,711	253,219	424,108	59,384	7.1
2004	738,038	251,317	425,498	61,223	6.9
2005	738,994	248,870	426,854	63,270	6.7
2006	739,619	246,189	427,867	65,563	6.5
2007	739,956	243,656	428,200	68,100	6.3
2008	740,037	244,567	424,582	70,888	6.0
2012	739,215	229,112	426,461	83,642	5.1
2022	745,249	183,231	434,638	127,380	3.4
2032	745,545	166,505	410,348	168,692	2.4
2042	722,256	148,238	397,821	176,197	2.3
2052	674,930	125,553	375,891	173,486	2.2
2062	621,636	108,805	313,744	199,087	1.6

For the NIS where pension payments to the elderly already represent over 60 per cent of benefit payments, and contributions from workers are needed to meet expenditure, population ageing has significant long-term consequences. Population ageing will create major challenges for the Guyana Government, as an older society will place increased and different demands on physical infrastructure, health and other social programmes. Proactive measures by both the Government and the NIS are required to ensure that the needs of future generations will be sufficiently met.

2.2 Economic and labour market projections

As contribution income is primarily based on the earnings of employed persons, economic and labour market activity directly affect NIS finances. Therefore, projections of the economy and labour force are necessary to estimate the number of employed persons and total insurable earnings in each projection year.

Since the late 1980s, Guyana has undertaken economic and structural reform programmes that have had the effect of lowering inflation, increasing output and reducing poverty. After economic performance improved substantially from 1991 to 1997, the period from 1997 to 2001 saw real GDP growth average only 1.5 per cent, while inflation was moderate, averaging 5 per cent per annum.

In 2002, the International Monetary Fund (IMF) approved a three-year credit under the Poverty Reduction and Growth Facility (PRGF) based on Guyana's Poverty Reduction Strategy Paper. The IMF has noted that Guyana "envisages a gradual increase of output growth over the medium term as the implementation of structural reforms begins to impact positively on productivity and competitiveness".[2]

One of the challenges encountered in preparing these projections is the absence of reliable and timely data on the economy, employment and social statistics. For example, labour market information provided by the Bureau of Statistics relates to a 1992 survey. Therefore, the economic and labour market projections made for this review adopt some main assumptions that include:

- Gradual increases in labour force participation among women;
- Labour productivity growth high in the early years, decreasing to 1.5 per cent per annum late in the projection period, producing gradual declines in unemployment;
- Inflation rates decreasing from 5 per cent over the medium term to 3 per cent over the long term.

Table 2.3 provides a summary of the real GDP growth assumptions.

Table 2.3 Average real GDP growth assumptions during each period, 2003-2062

Period	*Pessimistic* scenario	*Intermediate* scenario	*Optimistic* scenario
2003 to 2012	2.0%	3.5%	5.0%
2013 to 2022	2.0%	2.75%	4.5%
2022 to 2062	1.25%	1.75%	3.0%

[2] IMF Press Release – "IMF Approves a Three year PRGF Credit for Guyana"

3. National insurance financial and demographic projections

This chapter presents and analyses projections of NIS finances up to 2062. The purpose of these projections is twofold. First, they are used to identify long-term trends for contributions, benefits and the reserve, so that the financial viability of the NIF may be assessed. Second, by using these projections as a base, the sensitivity of the results to changes in the assumptions, and/or contribution and benefit provisions may be identified.

Three sets of financial projections have been modelled using *Intermediate, Pessimistic* and *Optimistic* scenarios. To illustrate the effect of individual assumptions on overall results, several sensitivity tests have been performed using the *Intermediate* scenario.

These projections are based on results of the population and economic projections presented in Chapter 2, several NIS-specific assumptions and the contribution and benefit provisions in place on 1 January 2002. While increases to the contribution ceiling and pensions in payment are not legislated, periodic adjustments are expected, and thus have been assumed.

The main assumptions that have been made are:

- The insurable earnings ceiling will increase each year by the average increase in general wages;
- Short-term Benefits Branch expenditure will increase from 1.51 per cent to 2.0 per cent of insurable earnings between 2002 and 2062;
- Industrial Benefits Branch expenditure, excluding disablement and death benefits, will increase from 0.21 per cent to 0.3 per cent of insurable earnings between 2002 and 2062;
- Pension increases are awarded annually in line with changes in the Consumer Price Index;
- Administrative costs will decline from the current 1.6 per cent of insurable earnings to 1.5 per cent in 2012, remaining constant thereafter;
- Long-term yield on reserves are 4 per cent, 5 per cent and 6 per cent for the *Pessimistic, Intermediate* and *Optimistic* scenarios, respectively.

3.1 Actuarial projection results

While the results of these actuarial projections are more optimistic than those presented in the Fifth Actuarial Review, the trends that income, expenditure and reserves are expected to follow are the same. Projected NIS reserves under the three scenarios are illustrated in Figure 3.1.

Figure 3.1 Projected NIS reserves (billions of GY$'s)

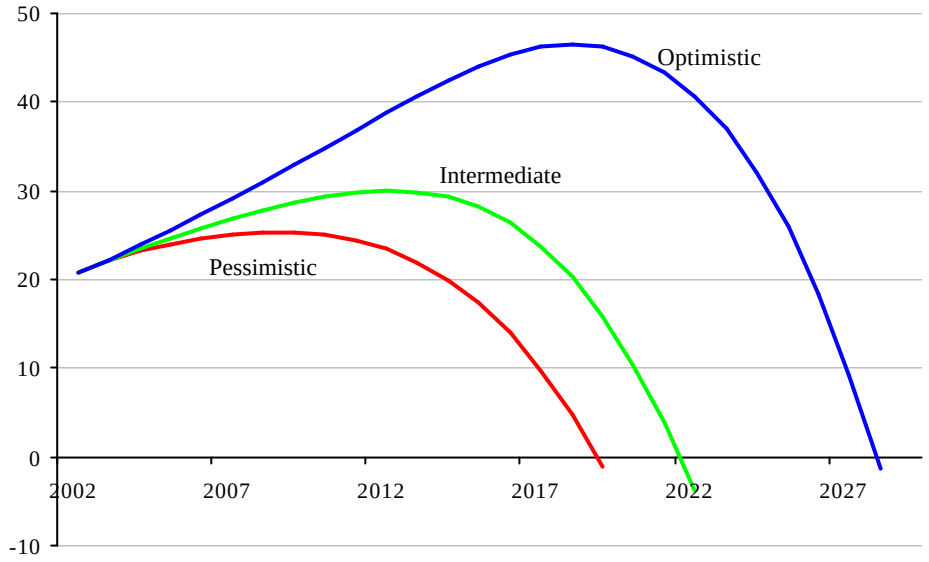


Table 3.1 summarizes the years in which key financial events are expected to occur under each of the three scenarios.

Table 3.1 Summary of actuarial projections

1st year when:	***Pessimistic* Scenario**	***Intermediate* Scenario**	***Optimistic* Scenario**
Annual expenditure exceed contribution income	2005	2006	2010
Annual deficit (income minus expenditure)	2009	2013	2019
NIS Reserves depleted	2019	2022	2028

Once total expenditure exceeds contribution income, portions of investment income will be required to help meet expenditure. When NIS incurs its first cash flow deficit (total expenditure greater than total income) reserves will have reached their maximum level. Thereafter, investments will have to be liquidated to meet benefit payments. If the contribution rate is not increased, growing annual deficits will eventually lead to depletion of reserves and a gradual decline of the reserve-expenditure ratio or relative funding level of the scheme. In partially funded defined benefit social security schemes the trend for reserves illustrated in Figure 3.1 is normal if the contribution rate remains below the true cost of benefits while the number of contributors relative to the number of pensioners falls.

Numerical details of the financial and demographic projections for the *Intermediate* scenario are provided in Tables 3.2, 3.3 and 3.4. Similar tables for the

Pessimistic and *Optimistic* scenarios may be found in Appendix III. For selected years between 2002 and 2062 these tables show:

- Projected income and expenditure, year-end reserves and the reserve-expenditure ratio;
- Projected benefit and expenditure by major benefit type in dollars and as a percentage of insurable earnings and GDP;
- Projected number of contributors and pensioners by major benefit type.

Table 3.2 Projected cash flows and reserves – *Intermediate* scenario (billions of GY$'s)

Year	Income			Expenditure			Annual surplus (deficit)	Reserve	
	Contribution	Investment	Total	Benefits	Admin.& others	Total		End-of-year	RER
2002	5.5	1.0	6.5	4.4	0.7	5.1	1.4	21	4.0
2003	5.9	1.0	6.9	4.9	0.8	5.7	1.2	22	3.9
2004	6.3	1.1	7.4	5.3	0.8	6.1	1.3	23	3.8
2005	6.8	1.2	8.0	5.8	0.9	6.7	1.3	24	3.6
2006	7.2	1.2	8.4	5.8	0.9	6.7	1.7	24	3.6
2007	7.7	1.2	8.9	6.6	0.9	7.2	1.7	25	3.5
2008	8.2	1.3	9.5	7.5	1.1	8.6	0.9	27	3.2
2012	10.6	1.4	12.0	10.5	1.3	11.8	0.2	30	2.5
2022	17.7	0	17.7	23.2	2.2	25.4	-7.7	0	0
2032	23.6	0	23.6	39.2	3.0	42.2	-18.6	0	0
2042	33.2	0	33.2	56.8	4.1	60.9	-27.7	0	0
2052	45.2	0	45.2	85.3	5.6	90.9	-45.7	0	0
2062	53.7	0	53.7	121.9	6.7	128.6	-74.9	0	0

Note: When the reserve is depleted, no more investment income can be earned. The annual deficit must be met from external sources, especially through transfers from the general budget.

Table 3.3 Projected benefit expenditure – *Intermediate* scenario (billions of GY$'s)

Year	Pensions & Benefits					Benefits as a % of:	
	Old-Age	Invalidity	Survivors	Short-term	Industrial	Insurable Wages	GDP
2002	2.7	0.2	0.6	0.7	0.2	10.2%	3.0%
2003	2.9	0.2	0.6	0.7	0.2	10.3%	3.0%
2004	3.2	0.3	0.7	0.8	0.2	10.4%	3.0%
2005	3.6	0.3	0.7	0.8	0.2	10.5%	3.0%
2006	3.9	0.3	0.8	0.9	0.3	10.7%	3.0%
2007	4.3	0.3	0.8	1.0	0.3	10.8%	3.0%
2008	4.7	0.4	0.8	1.1	0.3	11.0%	3.0%
2012	6.9	0.5	1.1	1.4	0.4	11.9%	3.1%
2022	16.6	0.9	1.8	2.5	0.7	15.7%	3.3%
2032	28.8	1.3	2.8	3.5	1.1	19.9%	3.4%
2042	41.2	2.1	4.1	5.1	1.6	20.5%	
2052	61.4	4.1	5.7	7.3	2.6	22.7%	
2062	90.0	5.3	8.1	9.0	3.4	27.2%	

Table 3.4 Demographic projections, 2002-2062

Year	# of Contributors	# of Pensioners				Total # of Pensioners	Ratio of Contributors to Pensioners
		Old-Age	Invalidity	Survivors	Death & Disablement		
2002	133,177	20,423	1,370	8,105	483	**30,381**	**4.4**
2003	134,220	20,727	1,465	8,236	510	**30,938**	**4.3**
2004	135,526	21,306	1,521	8,346	526	**31,699**	**4.3**
2005	137,031	21,870	1,554	8,444	537	**32,405**	**4.2**
2006	138,650	22,432	1,574	8,530	545	**33,081**	**4.2**
2007	140,958	23,001	1,587	8,607	550	**33,745**	**4.2**
2008	141,252	23,567	1,596	8,675	554	**34,392**	**4.1**
2012	147,352	26,333	1,645	8,899	569	**37,446**	**3.9**
2022	165,927	36,922	1,848	9,524	624	**48,918**	**3.4**
2032	156,094	43,906	2,053	10,196	682	**56,837**	**2.7**
2042	151,309	44,303	2,324	10,531	740	**57,898**	**2.6**
2052	146,652	47,067	3,057	10,403	867	**61,394**	**2.4**
2062	124,148	49,786	2,688	10,516	817	**63,807**	**1.9**

The projected ageing of the general population is also noticeable in NIS demographic projections. As shown above, the number of contributors is expected to increase for another 20 years and then decline thereafter. This pattern is consistent with population ageing and the projected decline in the general population. However, the number of pensioners is projected to more than double.

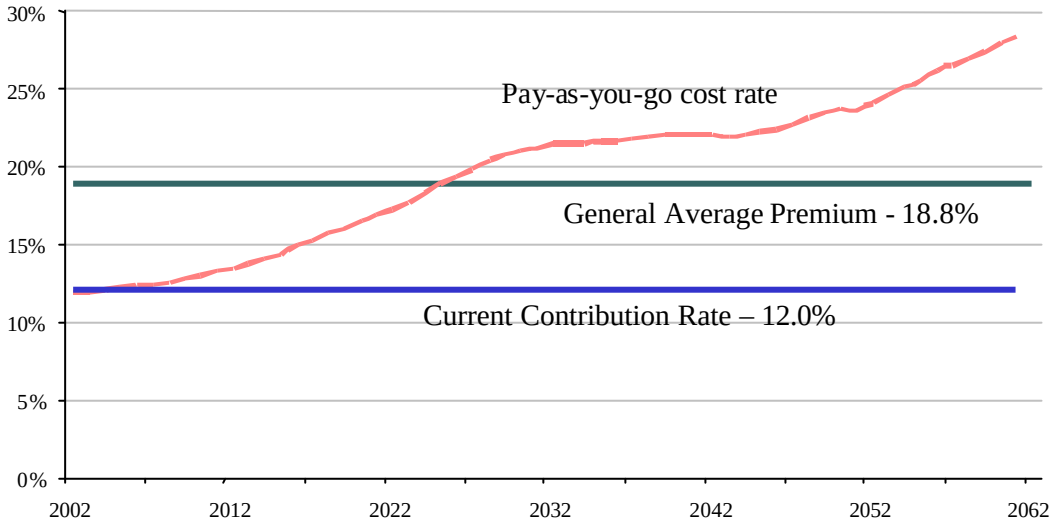
As NIS benefits are only partially funded, future generations of contributors will help meet the benefit costs of previous generations. With the projected decline in the number of contributors to pensioners, and the expected trends for income and expenditure, future smaller generations of workers will be required to pay significantly higher contribution rates for the same benefits.

3.2 Projected benefit costs

The cost of National Insurance benefits and administrative expenditure may be viewed from several perspectives. First, each year's total expenditure can be expressed as a percentage of that year's insurable earnings. This is often referred to as the pay-as-you-go rate. This rate answers the question: "What contribution rate is required to exactly meet that year's expenditure?"

A second rate, called the general average premium, is the average level contribution rate required over the next 60 years to fully cover total expenditure during that period. In Figure 3.2, the relationships between the pay-as-you-go rate and the general average premium for the *Intermediate* scenario, and the present contribution rate can be readily noted.

Figure 3.2 Projected cost rates – *Intermediate* scenario, 2002-2062 (% of insurable earnings)

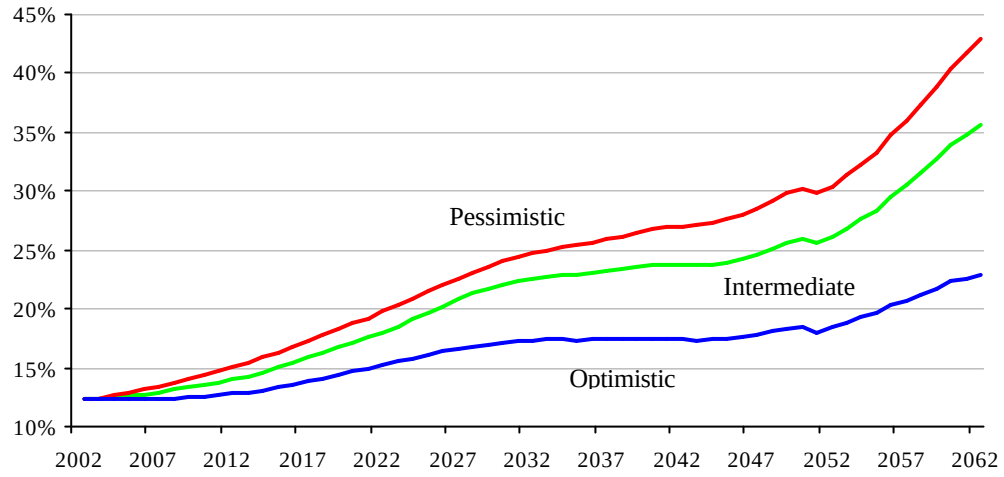


As shown in Figure 3.2, the current contribution rate of 12 per cent is 6.8 per cent below the general average premium of 18.8 per cent. The increasing pay-as-you-go curve indicates that from 2006, contribution income will be insufficient to meet total expenditure. Therefore, investment income, and, eventually, proceeds from the sale of assets will be required to meet benefit payments and administrative costs. If the Fund becomes exhausted, there would be no investment income, and thus contribution rates of almost 30 per cent in 2062 would be required to meet current expenditure.

The pay-as-you-go rates for each of the three scenarios are shown in Figure 3.3. As expected, the *Optimistic* scenario indicates the lowest pay-as-you-go contribution rates, while the *Pessimistic* scenario indicates the highest. In all three scenarios, pay-as-you-go rates at the end of the projection period increase

significantly due to the expected decline in the general population, number of workers and number of NIS contributors.

Figure 3.3 Projected pay-as-you-go cost rates for NIS three schemes, 2002-2062 (% of insurable earnings)



Another measure of the financial sustainability of a social security system is called "actuarial balance". For a given period, the actuarial balance can be defined as the present value of future insurable earnings divided by 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.

This formula produces a rate that indicates the adequacy or insufficiency of the present contribution rate for a given period. Table 3.5 shows the calculation of actuarial balances for three periods.

Table 3.5 Actuarial balance (billions of GY$'s; % of insurable earnings)

	2002 to 2022	2002 to 2042	2002 to 2062
Reserves at December 2001	19.3	19.3	19.3
Plus: Present value of future contributions	129.7	237.2	312.0
Minus: Present value of future expenditure	(151.6)	(337.3)	(490.0)
Equals: Present value of surplus (shortfall)	**(2.6)**	**(80.8)**	**(158.7)**
Actuarial balance (% of insurable earnings)	(0.25%)	(4.1%)	(6.1%)

A negative balance indicates that estimated income (assets and contributions) will be insufficient to meet estimated expenditures for the given period. This excess is

expressed in either dollars or in terms of a percentage of insurable earnings. For example, the negative 6.1 per cent actuarial balance for the entire projection period indicates that the present contribution rate would need to be 6.1 per cent higher over the entire period if the funding objective were to ensure reserves last until 2062. For that same period, the dollar shortfall is GY$158.7 billion. For the period 2002 to 2022, the shortfall is very small as 2022 is the year the Fund is projected to be depleted.

3.3 Sensitivity tests – *Intermediate* scenario

This section analyses several additional projections of NIS finances, showing the effect of different assumptions on long-term costs. For simplicity, only the *Intermediate* scenario will be used to analyse changes in cost that are expressed in terms of the general average premium.

3.3.1 Higher return on investments

Increasing investment earnings is one aspect over which Government policy and management initiatives could directly serve to extend the life of NIS reserves. Such higher returns may be achieved by introducing new types of investments to the portfolio and adopting new approaches to investing. (C.f.Chapter 5)

The *Intermediate* scenario assumption for long-term yield on reserves is 5 per cent per annum. If this rate were assumed to be 6 per cent, long-term NIS costs would be reduced by 0.7 per cent.

3.3.2 Reducing weekly contributions requirement for an age pension from 750 to 500

About 30 per cent of those turning age 60 and applying for old-age benefits are awarded a grant because they do not have at least 750 contributions. If the minimum contributory requirement were reduced to 500 contributions, more insured persons would qualify for a pension. The estimated cost of this change is 1.3 per cent of insurable earnings.

3.3.3. Raising the minimum pension to the level of the minimum wage in the public sector

One issue suggested by the Board for analysis is the financial effect of increasing the minimum pension to the level of the minimum wage. Presently the minimum pension is just over 50 per cent of the minimum wage. Therefore, such an increase would almost double pension expenditure as most pensioners receive the minimum pension (C.f.Section 4.13). The financial effect of such a change is to add an 8.7 per cent of insurable earnings to long-term costs. This change would result in the depletion of reserves occurring in 2012 as opposed to 2022.

3.3.4 Lowering administrative expenses

The assumption for administrative costs under the *Intermediate* scenario is a gradual decline from 1.6 per cent to 1.5 per cent of insurable earnings over ten

years. If instead, operating costs were assumed to fall to 1.0 per cent of insurable earnings over 20 years, the general average premium would be 0.4 per cent lower.

The results of these sensitivity tests show that changes in areas over which management and policy-makers have control can change long-term costs quite significantly. Table 3.6 summarizes the results of each sensitivity test described above.

Table 3.6 Sensitivity tests results (% of insurable earnings)

Variations from *Intermediate* scenario	General average premium
***Intermediate* Scenario**	**18.8%**
7% per annum return on reserves instead of 6% per annum	18.1%
10 years of contributions required for retirement benefit instead of 15 years	20.1%
Minimum pension equal to minimum wage in public sector	27.5%
Administrative costs reduced to 1% of insurable earnings instead of 1.5%	18.4%

3.4 Reforms preserving NIS viability for future generations

The *Intermediate* scenario projection results thus far discussed suggest that, unless the contribution rate is increased or benefit reforms made, NIS will not be able to meet its obligations beyond 2022.

The main reasons why the Guyana social security programme, in its present form, is financially unsustainable for the long term are:

- Current assets are significantly less than the value of benefits already earned;
- The contribution rate is less than the true cost of benefits being promised;
- The number of persons contributing per NIS pensioner will continue to decrease.

Measures that increase income or decrease expenditure need to be considered in order to strengthen Guyana's social security system. However, given that over 75 per cent of old-age pensioners receive the minimum pension (considered by many to be too low), there is not the option for a reduction in benefit promises, except through an increase in the retirement age. Therefore, expenditure savings can primarily result from reductions in administrative costs while revenue increases

may be generated from increasing the contribution rate, improving compliance[3] or improving investment returns. As shown in Section 3.3, improvements in the rate of return and reductions in administrative costs will have limited effects. Therefore, raises in contribution rate will be absolutely necessary and the sooner they occur, the less drastic later increases will have to be.

As indicated in Section 3.2, if the Fund is allowed to deplete, the scheme will enter a "pay-as-you-go" state where expenditure will have to be met by current income. This would call for rates of 17.5 per cent in 2022. Instead of increasing the rate significantly in 2022 and then gradually thereafter as current expenditure increases, a schedule of planned contribution rate increases beginning within the next two years should be enacted.

Increasing the rate will ensure that an appropriate level of reserves exists. One rate increase scenario could be an immediate jump to 18.8 per cent so that the present funding level may be preserved. A more prudent approach, however, would be gradual, step-like increases to a rate slightly higher than 18.8 per cent. The ultimate rate would be established based on the desired long-term funding objective. If, for example, a reserve of twice annual expenditure in 2062 is the objective, two possible schedules of rate increases that could achieve this are:

- One per cent increases in the contribution rate each year beginning 2004, reaching a high of 19 per cent in 2010, or

- Two per cent increases every five years, beginning 2004 and ending in 2019 when the total contribution rate will be 20 per cent.

Alternatively, the contribution rate could be increased every three to five years, by a specific (constant) percentage, until a contribution rate that is considered "permanent" is reached.

Given the population projections presented in the Section 2, the challenges to be faced by the NIS are a direct consequence of projected outward migration – decreasing workforce supporting a growing number of pensioners, both inside and outside of Guyana. Therefore, as is the case for the provision of other public services, the financial sustainability of the NIS depends on the economic performance of the country over the long term.

The issue of social security reform is topical throughout the world with countries taking different approaches to securing the viability of their programmes. Some countries with near insolvent schemes have suspended their traditional state-run defined benefit schemes and opted for defined contribution, privately managed schemes. Others have kept the traditional defined benefit approach and have made reforms that reduce long-term costs. Other countries have chosen a hybrid approach combining defined contribution and defined benefit, public and private management as well as fully funded and partially funded tiers. The preferred option depends heavily on the country's socio-economic conditions, the current and projected financial state of the scheme, the development of domestic capital markets, and the philosophy of the government and people.

[3] Increasing compliance will increase expenditure, as more contributors will qualify for a pension and/or a greater benefit.

The current structure has served Guyana well and there is no need for change at this time. However, reforms within the defined benefit approach are required. Given that the Fund may be exhausted within the next 20 years, immediate discussions leading to specific reforms should begin. Thoughtful consideration, discussions with Guyanese society and learning from the experiences of other countries should precede fundamental changes.

4. Policy and administrative considerations

4.1 Consolidated old-age pension provisions for civil servants (optional old-age pension at age 55)

While the age at which the NIS old-age pension first becomes payable is 60, the retirement age for civil servants and some other workers in Guyana is 55. Therefore, such persons have to wait five years after retirement to receive their NIS pension. For civil servants, however, a public service pension of up to two-thirds salary is paid to those persons with at least ten years of pensionable service.

Because of this regulation, many retired public servants are entitled to two pensions in retirement – one from the Consolidated Fund that begins at age 55 and another from NIS beginning at age 60. Because these pensions are not integrated (people are allowed to get both in full) it is possible for a retired civil servant to receive retirement income at a level higher than his/her pre-retirement income, especially in view of the favourable tax treatment of pension income.

The age at which the NIS old-age or retirement pension is first payable may be considered as the national retirement age. When NIS was first established in 1967, age 60 was felt to be an appropriate age. Since then, life expectancy has increased and people are entering the workforce at later ages. Therefore, the only change to the retirement age should be to increase it, not decrease it. Also, given the financial circumstances of the NIS, any change to the retirement age should be an effort to reduce long-term costs. Therefore, even though it has been suggested that a reduced amount be paid at age 55, such a change is not advisable as it will be a major change to the scheme's structure that could have negative labour market effects.

On the issue of public service pensions, the Government of Guyana should consider whether it is necessary to have two pension plans (Civil Service and NIS) for its employees, both which pay at least 60 per cent of highest wages. If long-term costs of the civil service pension plan have not recently been projected, it is recommended that an actuarial valuation of this unfunded plan be conducted, as well as an evaluation of the ageing of the service personnel. Both will have major long-term cost implications for the Government.

4.2 Extending Sickness Benefit Medical Care to excluded groups

The most costly short-term benefit is SBMC, which accounts for between 0.75 per cent and 1 per cent of insurable earnings over the past three years. However, several SBMC provisions have anomalies in coverage or lack coverage for many deserving and needy persons. For example, pensioners are not covered if certain illnesses did not manifest themselves prior to them becoming pensionable. Also, persons who did not work the day before incapacity commenced do not qualify for SBMC, even though they may have contributed for many years and are currently employed.

The issue of financing health care costs for the general population is beyond the scope of this review. Should the Government of Guyana desire a review of the present health care system and its financing, the ILO would be pleased to assist in this regard if asked. However, since NIS covers the health care costs of a limited number of persons, one suggestion for extending coverage will be presented here.

Instead of providing additional income to the elderly, consideration may be given to covering pensioners for SBMC. Such coverage will allow pensioners access to free medical care for certain illnesses for which they now have to pay and thus provide them with a benefit-in-kind and added security. While it is difficult to estimate the costs of extending SBMC to pensioners, it is likely to be considerably less than 7.8 per cent. If an additional 2 per cent of insurable earnings is earmarked for the extra payment of SBMC to the elderly, the overall effect on NIS finances would be the Fund being depleted in 2016 instead of 2022.

4.3 Lowering eligibility requirements for pensions (no. of weekly contributions)

The issue of persons who fall short of having 750 contributions getting a grant as opposed to an old-age pension has been raised. It was felt that those who are close to 750 should be given special consideration.

Wherever there are contribution conditions to be satisfied, there will be claimants who fall just short. Therefore, strict adherence to the minimum must be maintained. However, if 15 years of contributions is felt to be too restrictive, then the number of contributions required to qualify could be reduced. This of course would increase the number of new awards and, thus, increase costs.

In 2001, there were 1,446 new awards for old-age pensions and 616 old-age grant awards. This means that 70 per cent of old-age applicants received the pension. It is also noteworthy that 71 per cent of those awarded the old-age pension received the minimum pension. The average old-age grant paid in 2001 was GY$18,000, or around two months worth of the minimum pension. The present value of a minimum pension payable to a 60-year old is around 150 times the monthly pension contribution. Therefore, the cost difference between the grant and the pension to both the claimant and the NIS is significant.

The credit distribution of those who qualified for grants was not available. If such an analysis were undertaken, and if the results revealed that many have made between 500 and 749 weekly contributions, the number of credits required for a pension may be reduced to 500. This is the level in most other Caribbean countries. However, it is estimated that long-term costs would be 1.3 per cent higher if 500 weekly credits claimants were able to qualify for an old-age pension.

4.4 Extending the reference period of past insurable earnings used for calculating pensions

When computing the pension for old-age and invalidity pensions, insurable earnings during the three best years in the last five years prior to benefit commencement are used. In many cases, especially among civil servants who retire at age 55, their three best years of earnings may not be in the last five years.

Therefore, the benefit they receive may not be as high as it would have been had the reference period been longer.

It is therefore recommended that the definition of "relevant wage" (reference period) be amended so that the best three years in the last ten be used. Given the practice of increasing the ceiling almost annually as the minimum wage in the public sector changes, it may even be advisable to simply use the three best years of earnings.

In terms of costs, if the average new pension were higher by 10 per cent as a result of the change, the added long-term costs would be 1.4 per cent of insurable earnings.

4.5 Extending possibility for the payment of both retirement and survivors' pensions

When NIS was first established, the concept of survivors' benefits was predominantly geared towards the non-working widow of an NIS contributor. Today, women make up a significant part of the workforce and, therefore, are entitled to their own old-age pensions. Should her husband die, the widow will be in receipt of, or later qualify for, an old-age pension. However, she will only receive one pension, which will be the higher of her old-age pension or the survivors' pension. The survivors' pension is 50 per cent of the husband's original pension.

Under present rules, it is possible for household income to fall by more than half should one pensioner die. For example, if the husband's pension was GY$15,000 and the wife's pension GY$11,000, total household income would fall from GY$26,000 to GY$11,000 after the husband's death. The GY$11,000 being the higher of 50 per cent of her husband's pension of GY$15,000, (GY$7,500) and her pension of GY$11,000.

Therefore, there is a strong argument that in such a case more than just the higher benefit be paid, as household expenditure does not fall by as much 50 per cent following the death of one person.[4]

There are also instances where current rules may result in the surviving spouse of a household where only the husband worked, receiving a higher pension than the surviving spouse of a household where both spouses worked and both households had the same income.

The average survivors' pension is presently just over one-half the minimum old-age pension. One way of addressing the issue of insufficient survivors' pensions could be to apply the minimum rate that now applies to old-age and invalidity pensions. Such a change would almost double most survivors pensions, resulting in an addition of approximately 1.3 per cent insurable earnings to long-term costs.

[4] The US poverty line for an individual is only 20 per cent less than that for a couple.

4.6 Increasing level of funeral grant

In February 2002, the funeral grant was increased from GY$8,785 to GY$9,664. In 2001, total funeral grants paid were GY$13.2 million or 0.03 per cent of insurable earnings. Since the cost of the average funeral is estimated to be between GY$60,000 and GY$80,000, the NIS grant only covers a small portion of funeral expenses.

During discussions with NIS management, it was proposed that the funeral grant be increased to GY$15,000. As funeral grants make up a very small portion of NIS expenditure, such an increase will have little impact on benefit expenditure and overall NIS finances.

It is therefore recommended that the funeral grant be increased to at least GY$15,000. Consideration may be also given to making it even higher, so that the grant covers a greater portion of the cost of a basic funeral.

4.7 Increasing level of maternity grant

Unlike the funeral grant, which has been increased several times in recent years, the maternity grant has remained at GY$2,000 since November 1997. In 2001, GY$3.7 million was paid in maternity grants to 1,859 claimants. The maternity grant is very low at GY$2,000, and therefore should be increased.

The cost of a normal delivery in private facilities is approximately GY$15,000. It has been suggested that a useful benchmark for the amount of the grant be one-half of the cost of a normal delivery, which would be GY$7,500. While an increase in maternity grant from GY$2,000 to GY$7,500 will be significant for the claimant, the overall effect on NIS expenditure will not be that great. It is estimated that annual expenditure on maternity grants will increase to around GY$15 million. This amount is only 0.035 per cent of insurable earnings.

Two separate applications are required to qualify for both the maternity benefit and the maternity grant, even though the eligibility conditions for the mother are the same. The effect of this requirement to claim twice has resulted in many women not claiming for the grant and thus there are more awards for the weekly benefit than for the lump sum grant. To reduce the amount of paper work, as well as ensure that mothers receive all that they are entitled to, the payment of a grant should be made automatic once the woman qualifies for the benefit. A separate claim for maternity grant should only be required if the mother fails to qualify but the husband's contributions are being considered as the basis of qualification.

Each year maternity grants are awarded to around 10 per cent of women giving birth. While the weekly benefit replaces lost income, the grant is designed to assist the mother with expenses related to a new baby. Therefore, consideration may be given to liberalizing the eligibility conditions for a maternity grant so that more new mothers receive the one-time grant. One option for such a change is to pay the grant once a certain number of weekly contributions have been previously paid, say 50. This is similar to present provisions for a funeral grant where the payment of 50 weekly contributions, at any time prior to death, qualifies the beneficiary of the insured for a funeral benefit. While this will increase benefit costs, the increase will not have any major impact on overall NIS finances but it will allow many new mothers to better care for their newborns in the first few weeks of life.

4.8 Extending NIS coverage to self-employed persons

As is the case in most countries, even where it is mandatory, coverage among the self-employed persons in Guyana is very low. It is estimated that fewer than 5 per cent of self-employed persons in Guyana contribute to NIS. Presently, the contribution rate is 10.47 per cent for the self-employed (compared with 12 per cent for employed persons) and they are entitled to all benefits except industrial benefits.

Along with low coverage rates, the earnings declared by self-employed persons are quite often in the lowest income range. While most benefits are linked to earnings and, thus low declared earnings provide low benefits, SBMC benefits are not. Instead, SBMC involves the reimbursement of medical expense incurred by an insured person who qualifies for sickness benefit. Since many self-employed contributors, especially the young, perceive medical care as being the most valuable of the NIS benefits, they do the minimum that is required to qualify for it. Therefore, close attention should be paid to self-employed persons, so that not only those who think they need medical care contribute.

To encourage more self-employed persons to contribute, extensive public relations targeted specifically at this group should be conducted. Also, ways of simplifying the contribution process for self-employed persons should be considered so that they are more apt to pay regularly.

4.9 Adjusting regularly the NIS ceilings, pensions and grants

In recent years the minimum pension and wage ceilings have been increased in line with changes to the minimum wage in the public sector[5]. While these changes are not legislated and have not occurred at fixed intervals, the adjustments to old-age and invalidity pensions have been reasonable compared to cumulative inflation.

In setting the amounts for funeral and maternity grants, it is recommended that the amounts be directly linked to the amount of the minimum pension. This will ensure that as the minimum pension is increased to compensate for the effects of inflation, so too will the grants be increased. For example, the maternity grant may be made equal to the amount of the monthly minimum pension, and the funeral grant could be set at three times the monthly minimum pension.

Whenever old-age pensions are increased, all pensions in payment should also be increased so that the recipient is able to maintain the same standard of living. This includes disablement and survivors' pensions and the daily rate for constant care and attendance allowance. Presently, the average disablement pension is one quarter of the minimum old-age pension and the daily rate of constant care and attendance allowance is only GY$200.

[5] Although changes to the minimum wage are often arbitrary and retroactive, inflation and GDP growth are considered when deciding on the amount of the increase.

Finally, as recommended in the Fifth Actuarial Review, annual adjustments to pensions in line with changes in the Consumer Price Index should be legislated. Similar rules for adjusting the ceiling based on changes to the minimum wage in the public sector should also be enacted.

4.10 Rationalizing NIS administrative expenses

The issue of high operating costs was raised in the Fifth Actuarial Review as an area of concern. While there has been some improvement since 1997, as shown in Table 4.1, the level of operating costs remains high and continues to undermine the basis on which the contribution rate was initially set.

Table 4.1 Administrative expenses, 1996 to 2001

Administrative expenses	1996	1997	1998	1999	2000	2001
Nominal amount (millions GY$)	407.8	445.3	522.2	587.0	722.4	683.4
Annual increase over previous year	9.3%	9.2%	17.3%	12.4%	23.1%	-5.4%
As % of contribution income	14.9%	13.7%	14.6%	14.4%	14.8%	13.4%
As % of contribution income and benefits	9.9%	8.9%	9.1%	8.9%	8.5%	7.6%
As % of insurable earnings	1.64%	1.58%	1.75%	1.73%	1.78%	1.61%

The role of the NIS is to safe-keep workers' savings so that they can receive a benefit or pension at a later date. Having 13.4 per cent of each dollar saved spent on operating costs would be unacceptable to commercial bank and insurance company customers. Similarly, this expense ratio is excessive for NIS customers.

Table 4.2 shows administrative expense ratios in several other Caribbean Community (CARICOM) national insurance schemes. Although high expense ratios are a concern in several other countries, Guyana's rate is amongst the highest. Some smaller countries have lower rates, with Barbados showing a rate of less than half that of Guyana.

Table 4.2 Administrative costs in selected CARICOM schemes

Country	Insured population	Administration costs as a % of insurable earnings (2001)
Bahamas	120,000	1.6%
Barbados	115,000	0.7%
Dominica	45,000	1.6%
Grenada	29,000	1.3%
Guyana	122,000	1.6%
St. Kitts-Nevis	21,000	2.0%
St. Lucia	40,000	1.3%
St. Vincent	25,000	1.1%

The Fifth Actuarial Review for Guyana suggested a rate of 1.5 per cent of insurable earnings as an appropriate five-year target (2005) for administrative expenses. Given the decrease in administrative expenses in recent years, this seems achievable. A reasonable long-term goal for administrative expenses would be 1 per cent of insurable earnings. It is recommended to develop an administrative business plan to reach this target over the next 5 to 10 years.

4.11 Delivering individual annual contribution statements

Most NIS contributors are unaware of what their past contributions entitle them to and do not know what their pension at retirement is likely to be. Some people may even have had contributions deducted from earnings that were never paid to NIS by their employer. Also, the completeness of NIS' contribution data is suspect, resulting in possible underpayments to pensioners.

Annual contribution statements to insured persons should be introduced to tackle these issues by way of providing the following information at a minimum to each individual NIS insured member:

- Basic personal information of the insured;
- Insured's entire contribution history (number of weeks and total insurable earnings for each year since 1969);
- Benefit (invalidity or retirement) that would be payable had the insured retired or become invalid on the statement date; and
- An indication of the entitlements earned thus far and how many more, if any, contributions are still required to meet minimum eligibility conditions.

A well-designed annual statement will allow contributors to:

- Confirm that NIS records are complete and correct in showing the periods they worked and contributions made;

- Better plan for retirement, as the insured will obtain an idea of what his or her pension may be; and

- Monitor compliance by reducing the likelihood that employers withhold employee contributions, as insured persons will know whether or not employer contributions have been made on their behalf.

Contribution information for past periods is not yet available electronically, therefore, contributions on these statements may be limited. As the quality and completeness of prior years' contribution data improves, insured persons could be provided with historical information so that they can verify it prior to them turning 60.

4.12 Strengthening survivors' benefits

When NIS was established in 1969, few women worked and thus eligibility conditions for certain benefits were different for men and women. Although women now make up a larger share of the workforce and, in many cases, may be the chief income earner in the household, different qualifying conditions still exist for survivors' benefits.

For a widow to qualify for a survivors' pension, she must be:

- At least 45 or permanently incapable of work, or

- Pregnant by her late husband, or

- Have the care of young children of the marriage and either residing with the husband or entitled to receive periodical payments of maintenance.

For a widower to qualify, however, he must be:

- Over 55 and be permanently incapable of work, and

- Have no income from any source, other than Public Assistance or non-contributory pension.

As a result of these differing conditions, at the end of 2001, there were 7,906 widows receiving a pension but only nine widowers. One of the recommendations made in the Fifth Actuarial Review was to allow widowers to qualify for a survivors' pension under the same requirements now in place for widows. Such a change is once again strongly recommended so that NIS benefits adequately meet the changing socio-economic conditions of the population.

Other concerns with present survivor benefit provisions are:

- Payment for a maximum of only three children;

- Payment to children only if both parents are dead;

- Pension ceasing upon remarriage.

4.13 Raising the minimum pension to the level of minimum wage

The issue of raising the amount of minimum pension to the level of minimum wage, and the cost implications of such a move was discussed in the Fifth Actuarial Review. Presently, the minimum pension is just over 50 per cent of the minimum wage. This minimum pension is the amount 94 per cent of all old-age pensioners are now receiving. Of the newer old-age pensioners, around 70 per cent are awarded this minimum pension. Almost doubling the minimum pension would have major financial implications and would result in almost every pensioner getting the same monthly pension. The NIS would then be effectively providing a flat rate benefit.

The financial effect of increasing the minimum pension to equal the minimum wage over a five-year period has been estimated at 8.7 per cent of insurable earnings. The year that the Fund would then be depleted if the contribution rate remains at 12 per cent would be 2012 instead of 2022.

4.14 Benefits in case of unemployment to be investigated at a later stage when more favourable conditions prevail

While unemployment benefits are commonplace in industrialized countries, they are less so in the developing world. In the Caribbean, Barbados remains the only country with an unemployment benefit scheme. The main purpose of unemployment benefits is to provide partial income-replacement to persons who are involuntarily unemployed.

Following the Fifth Actuarial Review, the ILO prepared an outline of a possible unemployment scheme that included cost estimates. The Review's discussion and recommendations are still relevant and should be consulted.[6] However, given the need for NIS contribution rate increases in the near future to make current benefits sustainable over the long term, the question of which benefits should be given priority for the scarce resources should be debated prior to consideration of an unemployment benefits scheme. The economic conditions need to be more favourable and the institutional requirements in terms of the complementary aspects of unemployment insurance related to employment services for job-search assistance and re-training should be met before contemplating the introduction of unemployment insurance benefits. This does not prevent collective bargaining between employers and workers to take place to reinforce the social protection to unemployed workers.

4.15 Improving access to sickness benefits (easing qualifying conditions)

One of the qualifying conditions for sickness benefit is that the insured person must have been engaged in insurable employment immediately prior to the day on which incapacity commenced. As a result, many seasonal workers or part-time

[6] It was estimated that a contribution rate of between 1 per cent and 2 per cent could support a modest unemployment benefit.

workers who do not work every day may be denied sickness benefit although they are currently employed.

In addition to meeting the "worked yesterday" condition, the insured must also meet a contribution condition that indicates recent or current employment: they must have paid at least eight contributions in the preceding 13 weeks.

Given the changing nature of employment patterns and the intention of sickness benefit to replace lost income, requiring one to have worked the day before becoming incapacitated is too stringent and consideration should be given to removing this condition. Such a change would allow persons who are genuinely currently employed to qualify once they would have made at least eight contributions in the last quarter.

In the Fifth Actuarial Review, revised qualifying conditions were recommended that would allow even seasonal workers to qualify once they had made at least 20 contributions in the last 50 weeks. While this change is supported if there is a desire to have seasonal workers qualify in the off-season, the minimum number of contributions required in the past year could be set at 26 instead of 20.

Presently, sickness benefit accounts for 0.5 per cent of insurable earnings. While relaxing the qualifying conditions will result in more persons qualifying for sickness benefit, these changes are not expected to add more than 0.05 per cent to 0.1 per cent of insurable earnings to overall costs. There will also be a cost impact for SBMC as more persons would qualify for reimbursement of related medical expenses.

4.16 Considering other important issues

Many others issues of concern were raised by various groups that are beyond the scope of this review. However, each warrants further discussion among stakeholders before decisions and implementation measures can be further investigated. Some of these issues include:

- Guidelines for determining cohabitation for the purpose of awarding survivors' benefits;
- Sharing of information with other government departments to secure better registration and contribution collection compliance to the NIS;
- Raising public awareness on the importance of contributing regularly and enhancing contributors' knowledge of the benefits to which they are entitled.

The wide range of policy issues that have been addressed indicate the need for a formal review of present benefit provisions by local authorities. Social security administrations should be dynamic institutions that adjust their benefits and qualifying conditions to remain consistent with changes in socio-economic conditions. Therefore, it is strongly recommended that NIB quickly put in place a committee or commission to review all aspects of the NIS – policy, finance and administration. The mandate for this committee or commission should be to develop recommendations to the Government on amendments to NIS regulations so that NIS benefits meet the current needs of Guyana as well as strengthen the

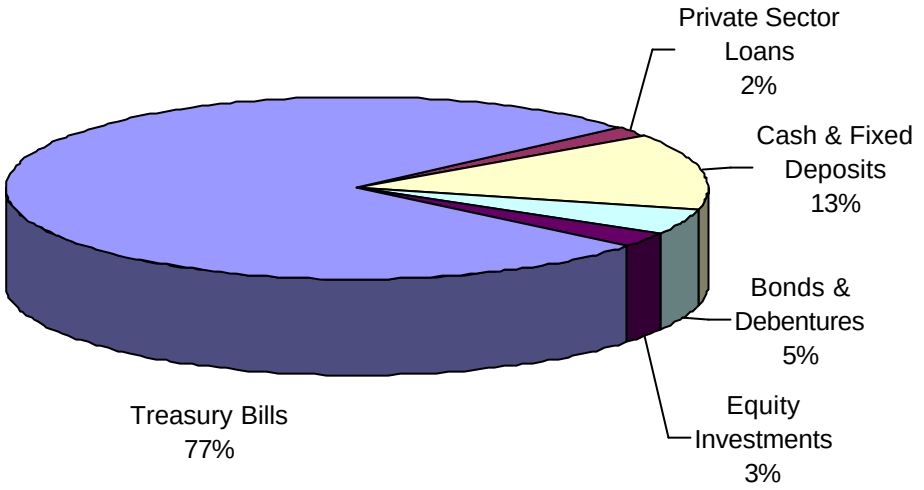
scheme's finances for the long term. The ILO will be pleased to assist with financial and policy advice in such a review.

5. Investments

5.1 Distribution of assets

At the end of 2001, NIF investments were heavily concentrated in Government of Guyana securities. As shown in Figure 5.1, treasury bills made up 77 per cent of total investments with four other asset classes making up the remainder of invested assets.

Figure 5.1 Distribution of NIF investments, December 2001



The present investment in treasury bills in the portfolio has several negative implications. First, the short-term nature of these securities (one year) exposes the Fund to changes in yields as interest rates fall or rise. During 2002, the yield on treasury bills fell to below 5 per cent, having been in excess of 13 per cent in 2000. This reduction has resulted in a significant fall in current investment income for the NIS. Should such low rates continue, the Fund would continue to realize relatively low rates of return. Had these funds been invested in longer-term securities, it is likely that interest rate reductions in the economy would take longer to impact fixed-income securities.

Second, to the extent that NIF are held in Government securities, there is technically little economic difference between raising the NIS contribution rate to meet expenditure and raising general taxes in order for Government to meet the costs of repaying NIS the face value of treasury bills. This is because the majority of government revenue comes from the same group that makes NIS contributions. Therefore, whether NIS raises its rate to meet expenditure or government raises taxes to meet the costs related to maturing treasury bills, the effect on the contributor and economy will be almost the same. Therefore, given the short timeframe in which NIS assets may have to be called to meet expenditure, future investments should be steered away from Government securities and into productive assets.

Immediate action should be taken to bring increased diversification to the NIF. Such diversification entails long-term rather than short-term investments, private sector rather than Government investments, and, possibly, a small portion in hard currency assets placed outside Guyana. A small portion of the Fund may also be allocated to social investments. Such investments, while not intended to provide market rates of return, seek to add societal value and contribute to the improvement of infrastructure in the country. Examples of how NIS funds could be used as social investments include housing and improvements to the health infrastructure.

Given the possible need for assets to be sold to meet expenditure within the next 12 years, liquidity concerns should also be accounted for prior to rebalancing the portfolio.

5.2 Investment policy statement

To help ensure that NIS assets are prudently and efficiently invested, an Investment Policy Statement (IPS) is required. An IPS sets out policies, guidelines and a general framework within which assets may be invested. In both the United States and Canada IPS's are required of all pension plans and investment funds.

A well-designed IPS is a blueprint for the effective investment of assets. It describes objectives and investment strategies, and identifies the roles of those involved in the investment process and what is expected of them. If followed, it should ensure that investments are consistent with the projected cash flows and liabilities of the Fund. The main contents of an IPS are:

- The categories of acceptable investments;
- Portfolio diversification – across asset classes and within asset classes,
- by maturity – short- , medium- and long-term,
- by location – local versus overseas;
- Risk inherent in the portfolio – risk of default and risk of price fluctuations;
- Asset mix – desired ranges for the proportion of different types of investments;
- Rate of return expectations of the entire portfolio and individual investments;
- Liquidity needs;
- How investments are valued;
- Authority granted to various parties – Director, Investment Committee, Board and Minister.

The current mix of NIS assets is inconsistent with the Fund's liabilities and purpose. Limited local opportunities and lack of guidelines have been factors in this deviation. To ensure that NIS funds achieve desired objectives, it is recommended that an IPS be adopted and its guidelines and policies adhered to.

Appendix I. Summary of contribution and benefit provisions

The NIS began operations on 29 September 1969, and as of January 2002, provided the following benefits:

(a) Short-term benefits: Sickness (including medical care) and maternity benefits.

(b) Long-term benefits: Old age, invalidity and survivors' and funeral benefits.

(c) Industrial benefits: Injury benefits (including medical care), disablement benefits and death benefits.

I.1 Insured persons

The NIS covers employed, self-employed and voluntary insured persons between the ages of 16 and 60 as follows:

(a) Employed persons in the private and public sectors are covered for all contingencies;

(b) Self-employed persons are covered for all benefits except for industrial benefits;

(c) Voluntary insured persons are covered for age and survivors' benefits only. Such persons must be ordinarily resident in Guyana and had previously paid at least 100 weekly contributions.

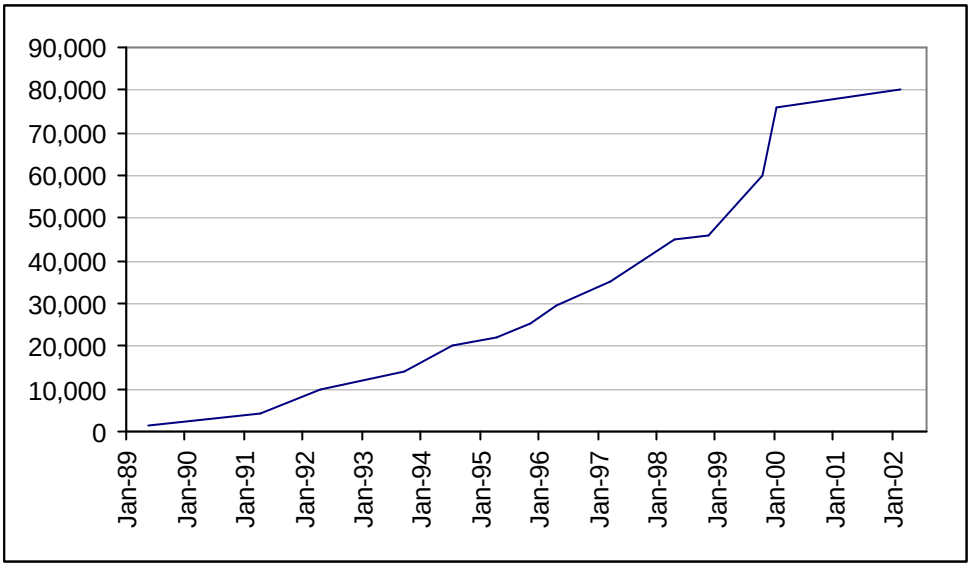
(d) Persons under age 16 or over age 60 are covered for industrial benefits only.

I.2 Insurable earnings and contributions

In addition to salary, insurable earnings include overtime pay, cost of living allowance and commissions.

As at 31 December 2001, earnings that are covered for the purpose of determining contributions and benefits include gross wages or earnings up to GY$17,538 per week or GY$76,000 per month. Effective February 2002, the ceiling was further increased to GY$18,503 per week or GY$80,180 per month and is approximately four times the minimum wage in the public sector. The following chart shows how the monthly ceiling on insurable earnings has increased from GY$1,500 in 1989 to GY$80,180 in 2002.

Figure AI.1 Monthly ceiling on insurable earnings, 1989-2002



Contributions are computed as a percentage of insurable earnings. The contribution rate is 12 per cent total, with 4.8 per cent paid by the employee and 7.2 per cent by the employer. The combined contribution rate was 11 per cent up to 1997. Self-employed persons pay a 10.47 per cent contribution rate and voluntary contributors pay at 8.17 per cent. Contributions at 1.53 per cent of insurable earnings are payable for those aged less than 16 and over 60.

I.3 Long-term benefit provisions

I.3.1 Old-age pension

Contributory requirement: 150 weekly contributions paid and 750 weekly contributions paid or credited.

Age requirement: 60.

The pension is not dependent on retirement from the workforce.

Amount of benefit: 40 per cent of average insurable earnings over the best three years in the last five, plus 1 per cent for every 50 weeks credited over 750.

- Maximum: 60 per cent of average insurable earnings.
- Minimum: GY$10,450 per month.

I.3.2 Old-age grant

Contributory requirement: 50 weekly paid contributions but at least 250 paid or credited.

Eligibility conditions: the person must be ineligible for an old-age pension.

Age requirement: 60.

Amount of benefit: one-twelfth of the average annual insurable earnings multiplied by the number of groups of 50 weekly contributions paid or credited. this amount is paid as a lump sum.

I.3.3 Invalidity pension

Contributory requirement: 150 paid weekly contributions and 250 paid or credited contributions.

Eligibility conditions: the insured is:

- less than 60,
- likely to be permanently incapable of employment, and
- not in receipt of sickness benefit, i.e. incapable of work for greater than 26 weeks.

Amount of benefit: 30 per cent of average weekly insurable earnings over the best three years of the last five years before commencement of invalidity, plus 1 per cent for every 50 weeks credited over 250.

Special credit: 25 weekly credits are awarded for each year between the commencement of invalidity and age 60.

- maximum: 60 per cent of average insurable earnings.
- minimum: guyGY$10,450 per month.

Duration of pension: payable until age 60 and then converted to an old-age pension.

I.3.4 Invalidity grant

Contributory requirement: 50 weekly paid contributions.

Eligibility conditions: same as invalidity pension, but the person must be ineligible for invalidity pension.

Amount of benefit: same as old-age grant. i.e. one twelfth of the average annual insurable earnings times the number of groups of 50 contributions for all the years of contribution.

I.3.5 Survivors' benefits

Contributory requirement: the deceased, at time of death, had made at least 250 paid contributions or was either in receipt of, or entitled to, invalidity or old-age pension.

Eligibility conditions: the survivors' benefit, normally awarded in the form of a pension is payable to or for the benefit of the dependants of a deceased insured person. The dependants of the deceased insured person who are entitled to claim survivors' benefit in the order of preference are:

(1.1) The widow of the deceased: she should be married to the deceased not less than six months before his death and at the time of his death she should:

(a) be over 45 years of age or;

(b) be incapable of work and this incapacity seems likely to be permanent or;

(c) be pregnant by her late husband; or

(d) have the care of a child/children of his or their marriage under 16 years of age, and have been either residing with her husband or receiving or be entitled to receive from him periodical payments for the maintenance of herself or the children or both of not less than GY$5.00 weekly.

(1.2) The widower of the deceased: he should at the time of death of the deceased insured person be over fifty-five (55) years of age and likely to be permanently incapable of work. he should be married to the deceased not less than six months before her death and have no income from any source other than public assistance under the poor relief ordinance or non-contributory pension under the old-age pension act.

(2) An unmarried dependant orphan: he or she should, at the time of death of the deceased insured person, be under the age of 16 years; or be an unpaid apprentice between the ages of 16 and 18 years; or, be older than the age of 16 years, be permanently incapable of work; and be wholly or partially maintained by the deceased insured person and have no step-mother or step-father with a prior claim.

Amount of benefit: the proportion of survivors' pension is shown below:

- Widow or widower: 50 per cent of weekly old-age or invalidity pension.
- Child: 16.7 per cent of weekly old-age or invalidity pension.
- Full orphan or invalid orphan: 33.3 per cent of weekly old-age or invalidity pension.
- Minimum pension:
    - widow/widower: GY$5,225.00 per month
    - child/parent: GY$1,742.00 per month
    - orphan: GY$3,483.00 per month
- Maximum amount: the total benefit payable to dependants cannot exceed 100 per cent of the old-age/invalidity pension. (i.e. the case of a widow with 3 children)

Duration of benefit for widow's/widower's pension:

- For lifetime, if at the date of the spouse's death: the widow was over 45, or the widower was over 55, or the widow/widower was an invalid. pension will cease upon remarriage or cohabitation, or if an invalid recovers.

- For one year only, if at the date of the spouse's death: the widow/widower was less than 45 and not an invalid, or not married for at least three years, or if the widower has no children and is younger than age 55.

- For dependant children and orphan(s), pension will be paid up to age 16, or 18 if in full-time education, or in the case of an invalid, recovery from invalidity.

I.3.6 Survivors' grant

Contributory requirement: The deceased, at time of death, had paid at least 50 contributions but less than 250.

Eligibility conditions: in the absence of survivors' pension claims, all other dependants who are members of the family of the deceased at the time of his or her death, and were wholly or partially maintained by the deceased, are entitled to claim the survivors' grant. Where the dependant is a man, he must be permanently incapable of self-support. If the dependent is a woman, she herself must be permanently incapable of self-support or be living with her husband who is permanently incapable of self-support. If, however, there is more than one such dependant, the grant is distributed reasonably at the discretion of the NIS General Manager.

Amount of grant:

a) Widow/widower/orphan = old-age/invalidity grant

b) Other dependants:

   - old-age/invalidity grant (if deceased would have been entitled to a grant)

   - weekly old-age/invalidity pension times 52 (if deceased was in receipt of or would have received a pension)

   Provided that grant is not less than average weekly insurable earnings of deceased x 52.

I.3.7 Funeral grant

Eligibility conditions: The funeral grant is a single sum payable on the death of an insured person, or that person's spouse. It is paid to the person who meets or who intends to meet the cost of the funeral, or is paid into the estate of the deceased.

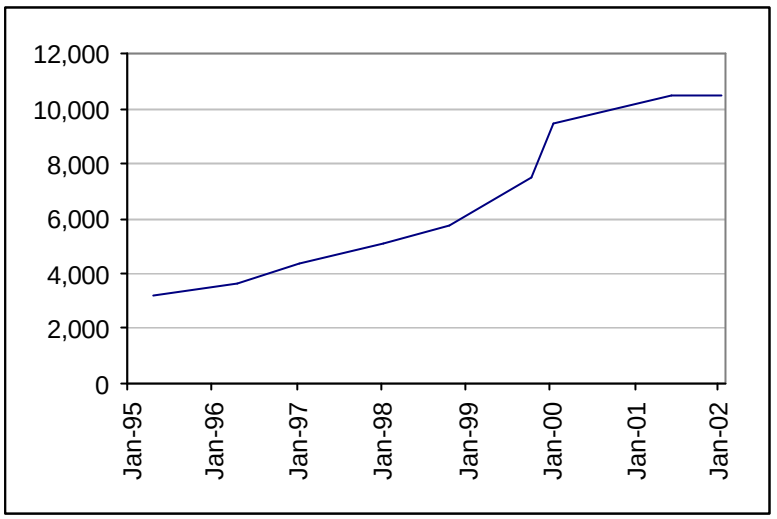
The deceased person or that person's spouse must:

- Be registered with the NIS and;

- Have paid at least 50 contributions since entry into the NIS.

Amount of grant: As of 31 December 2001, the funeral grant was GY$8,785. It was increased in February 2002 to GY$9,664.

Figure AI.2 Monthly minimum pension, 1994 to 2002



I.4 Short-term benefit provisions

I.4.1 Sickness benefits

Contributory requirement: 50 paid contribution weeks with at least eight weeks in the last 13 weeks. The insured must have been employed immediately prior to the day the illness commenced.

Waiting period: Three days. Two periods of illness not separated by less than eight weeks are treated as one.

Amount of benefit: 70 per cent of average weekly insurable earnings during the last eight weeks of the 13-week period immediately prior to incapacity when contributions were paid.

Duration of benefit: Maximum of 26 weeks.

I.4.2 Sickness benefit medical care

Qualifying conditions: Eligible for sickness benefit except where:

- The claim is for the reimbursement of costs related to orthopaedic or prosthetic appliances, the insured need not be incapable of work, or

- The person is in receipt of invalidity or old-age benefits, provided they can show that they have a history of the particular medical condition before receiving invalidity or old-age benefits.

Amount of benefit: Reimbursement is subject to specific rates for the various aspects of medical care. The maximum per incident is ten times the monthly insurable earnings ceiling (GY$760,000). Recipients of invalidity and old-age benefits are provided with drugs free of cost (once a valid prescription is provided) and free dental and spectacle care (subject to specific limits).

Duration of benefit: As long as the need for such care continues.

I.4.3 Maternity benefits

Contributory requirement: 15 paid contribution weeks with at least seven weeks in the last 26 weeks.

Amount of benefit: 70 per cent of average weekly insurable earnings during the best seven weeks out of the 26 weeks preceding the week in which benefits commence when contributions were paid.

Duration of benefit: 13 weeks, starting no earlier than six weeks before the expected date of confinement. The claimant may have an extra 13 weeks if there are complications with the pregnancy.

I.4.4 Maternity grant

Contributory requirement: Same as for maternity benefit. If a wife fails to qualify for maternity benefit but her husband's contributions satisfy these conditions, the maternity grant is payable.

Amount of grant: The maternity grant is GY$2,000 per live birth.

I.5 Industrial benefits

I.5.1 Work injury benefits

Eligibility conditions: Incapable of work because of an injury sustained in or during the course of employment, or because he or she has developed an illness as a result of his or her job. There are no qualifying contributory requirements for employment injury benefits.

Amount of benefit: 70 per cent of average insurable earnings in the last eight weeks before the accident occurred (or less if the person was in employment for a shorter period).

Duration of benefit: Maximum of 26 weeks.

Waiting period: 3 days. Benefit payable from the first day if the period of incapacity exceeds three days.

I.5.2 Disablement benefits

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

Waiting period: The payment period of injury benefit.

Amount of benefit: Percentage of average insurable earnings by reference to percentage loss of faculty suffered. If the degree of disablement is 15 per cent or more, a weekly benefit of the injury benefit times the degree of disablement is paid.

If the degree of disablement is less than 15 per cent, a grant equal to 260 times the weekly injury benefit rate times the degree of disablement is paid. If period of disablement is expected to be less than seven years, the grant is the number of weeks of disablement expected times the weekly injury benefit.

In the case of temporary disablement, the benefit is payable for as long as the disablement lasts up to a maximum of 365 weeks.

I.5.3 Death benefits

Eligibility conditions: The industrial death benefit is payable to or for the benefit of the dependants of an insured person who dies as a result of an industrial accident or a disease directly connected to that person's employment.

The dependants entitled to this benefit are the same as for survivors' benefits.

Amount of benefit: Proportion of disablement pension, the same percentage as for long-term benefits. In the case of remarriage, a lump sum of one year's payment is provided.

Weekly pension:

- Widow/widower/parent: 35 per cent of average weekly insurable earnings
- Children: 11.7 per cent of average weekly insurable earnings
- Orphan: 23.3 per cent of average weekly insurable earnings

Lump sum: Other dependants: Lump sum must be at least GY$2,700 but not more than 100 times the average weekly insurable earnings.

I.5.4 Injury benefit medical care

Qualifying conditions: Same as for injury benefit.

Amount of benefit: Reimbursement of medical expenses incurred both locally and overseas, is subject to specific rates for the various aspects of medical care.

Duration of benefit: As long as the need for such care continues.

Appendix II. Methodology, data and assumptions

This actuarial review makes use of the new 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. This review has been undertaken by modifying the generic version of the ILO modelling tools to fit the specific case of Guyana and its National Insurance Scheme. 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 Guyana's 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.

II.1 Modelling the demographic and economic developments

Guyana's population has been projected beginning with results of the 1991 national census and applying appropriate mortality, fertility and migration assumptions. Reported births and deaths and estimated migration between 1991 and 2001 were used to produce a 2002 projected population of 735,000, the initial estimate of the Statistical Bureau.

For the *Intermediate* scenario the total fertility rate is assumed to decrease from 2.8 in 2002 to 2.0 in 2025, and remain constant thereafter. Table AII.1 shows age-specific and total fertility rates for sample years, including the year the ultimate level is reached. For the *Pessimistic* and *Optimistic* scenarios, the ultimate total fertility rates are assumed to be 1.9 and 2.1, respectively.

Table AII.1 Age-specific and total fertility rates, 2002, 2012 and 2025

Age	2002	2012	2025+
15 - 19	0.082	0.056	0.028
20 - 24	0.158	0.131	0.098
25 - 29	0.143	0.132	0.114
30 - 34	0.098	0.096	0.089
35 - 39	0.059	0.054	0.047
40 - 44	0.024	0.022	0.019
45 - 49	0.007	0.007	0.007
TFR	**2.82**	**2.47**	**2.00**

Mortality rates have been determined with the methodology used for the development of the United Nations model. This methodology uses as a base the life expectancy at birth in 2001 of 64 and 69 for males and females, respectively.

Improvements in life expectancy have been assumed to follow the "medium" rate as established by the United Nations. Sample mortality rates and the life expectancies at birth and at age 60 for sample years are provided in Table AII.2.

Table AII.2 Mortality rates and life expectancy, males and females, 2002, 2032 and 2062

Age	Males			Females		
	2002	2032	2062	2002	2032	2062
0	0.0189	0.0091	0.0049	0.0190	0.0050	0.0047
5	0.0008	0.0002	0.0003	0.0009	0.0002	0.0002
15	0.0005	0.0002	0.0003	0.0005	0.0002	0.0002
25	0.0037	0.0010	0.0010	0.0021	0.0004	0.0004
35	0.0053	0.0016	0.0010	0.0030	0.0008	0.0006
45	0.0070	0.0031	0.0023	0.0037	0.0018	0.0014
55	0.0127	0.0077	0.0062	0.0065	0.0037	0.0032
65	0.0256	0.0184	0.0155	0.0145	0.0088	0.0077
75	0.0494	0.0402	0.0438	0.0356	0.0274	0.0249
85	0.1030	0.0936	0.1243	0.0864	0.0888	0.0905
95	0.2714	0.2675	0.2817	0.1963	0.2240	0.2440
Life Exp at:						
Birth	**63.9**	**72.1**	**76.5**	**69.9**	**77.6**	**81.7**
Age 60	**17.5**	**19.8**	**20.5**	**19.8**	**21.4**	**24.3**

Net migration (people coming into the country minus people leaving the country) for the *Intermediate* scenario is assumed to decline from 10,000 in 2003 to 5,000 in 2020, and then 1 per cent of the working age population thereafter. Migration levels for sample years are provided in Table AII.3. For the other scenarios the same age distribution as shown below is used.

Table AII.3 Net immigration, males and females, 2003, 2032 and 2062

Age	Males			Females		
	2003	2032	2062	2003	2032	2062
0 - 9	(706)	(331)	(273)	(788)	(369)	(305)
10 - 19	(1,088)	(510)	(421)	(1,177)	(552)	(456)
20 - 29	(2,109)	(989)	(817)	(2,228)	(1,044)	(862)
30 - 39	(620)	(291)	(240)	(449)	(210)	(174)
40 - 49	(206)	(96)	(80)	(162)	(76)	(63)
50 - 59	(95)	(44)	(37)	(150)	(70)	(58)
60 - 69	(53)	(25)	(20)	(100)	(47)	(39)
70+	(24)	(19)	(12)	(47)	(37)	(23)
All Ages	**(4,900)**	**(2,305)**	**(1,900)**	**(5,100)**	**(2,405)**	**(1,979)**

The projection of the labour force, which is 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. Labour force participation rates have been estimated using the results of the recent Labour Force Surveys conducted by the Department of Statistics.

Between 2001 and 2062, age-specific labour force participation rates are assumed to increase at advanced ages for males and all ages for females.

Table AII.4 shows the assumed age-specific labour force participation rates in 2001 and 2062. Between these two years, rates are assumed to change linearly.

Table AII.4 Labour force participation rates, males and females, 2002 and 2062

Age	Males		Females	
	2002	2062	2002	2062
17	55%	55%	28%	41%
22	90%	90%	43%	66%
27	94%	94%	44%	69%
32	95%	95%	48%	71%
37	96%	96%	50%	73%
42	97%	97%	51%	74%
47	96%	96%	44%	70%
52	91%	91%	39%	65%
57	89%	89%	40%	64%

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

Estimates of increases in the total wages as well as the average wage earned are required. Annual average real wage increases are assumed equal to the increase in labour productivity, as it is expected that wages will adjust to efficiency levels over time. The inflation assumption affects nominal average wage increases.

II.2 NIS projections of income and expenditure

This actuarial review addresses all National Insurance revenue and expenditure items. For short-term and employment injury benefits, income and expenditure are projected as a percentage of insurable earnings.

For the Pensions Branch, projections of pensions are performed following a year-by-year cohort methodology. For each year up to 2062, 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, contribution density and the collection rate. 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. The administrative expenses of the NIS are modelled as a decreasing 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.

II.3 NIS population data and assumptions

The data required for the valuation of the NIS is extensive. As of 31 December 2001, required data includes the insured population by active and inactive status, the distribution of insurable earnings 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, and the 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 NIB specific input data and the key assumptions used are provided in Tables AII.5 through AII.9.

Table AII.5 Active insured population, earnings and past credits, 2001

Age	# of Active Insureds		Average Monthly Insurable Earnings		Average # of Years of Past Credits	
	Male	Female	Male	Female	Male	Female
15 - 19	8,657	4,929	19,438	11,604	0.8	0.6
20 - 24	10,837	9,543	29,536	17,632	2.7	2.2
25 - 29	11,328	9,053	38,054	22,717	5.4	4.3
30 - 34	9,224	8,439	44,334	26,466	8.3	6.7
35 - 39	8,484	7,821	47,900	28,594	11.4	9.1
40 - 44	8,520	6,426	49,538	29,572	14.4	11.5
45 - 49	8,133	5,453	52,238	31,184	15.9	12.8
50 - 54	6,182	3,329	54,250	32,385	16.7	13.3
55 - 59	6,079	3,432	50,758	30,301	17.1	13.6
All Ages	**77,445**	**58,424**	**41,650**	**24,818**	**9.4**	**7.3**

Table AII.6 Contributory pensions in payment, December 2001

Age	Old-Age Benefit		Invalidity Benefit		Survivors Benefits		Disablement Benefit	
	Male	Female	Male	Female	Male	Female	Male	Female
0 - 4								
5 - 9	-	-	-	-	9	-	-	-
10 - 14	-	-	-	-	14	-	-	-
15 - 19	-	-	-	-	5	2	5	-
20 - 24	-	-	3	-	-	14	20	1
25 - 29	-	-	18	7	-	67	47	3
30 - 34	-	-	45	28	2	211	76	8
35 - 39	-	-	90	22	1	257	153	19
40 - 44	-	-	152	59	2	265	208	13
45 - 49	-	-	337	78	-	781	208	21
50 - 54	-	-	556	149	-	813	180	14
55 - 59	-	-	350	125	-	701	167	14
60 - 64	4,492	1,285	-	-	1	814	414	83
65 - 69	3,063	915	-	-	1	1,220	-	-
70 - 74	3,257	1,069	-	-	1	986	-	-
75 - 79	3,202	910	-	-	4	1,004	-	-
80 +	3,370	794	-	-	2	771	-	-
# of Pensioners	**17,384**	**4,973**	**1,551**	**468**	**42**	**7,906**	**1,478**	**176**
Avg Monthly Pension		**10,849**		**11,581**	**1,336**	**6,053**	**2,574**	**2,267**

Table AII.7 shows assumed long-term density factors, or the average portion of the year for which contributions are made for non-civil servants. For 2002 to 2005, density factors are assumed to be 97 per cent, 98 per cent, 99 per cent and 100 per cent of the rates shown. A contribution density of 100 per cent is assumed for all civil servants.

Table AII.7 Density of contributions

Age	Males	Females
17	41%	36%
22	66%	64%
27	75%	77%
32	81%	83%
37	82%	86%
42	84%	88%
47	85%	90%
52	86%	90%
57	87%	89%

Table AII.8 shows the expected incidence rates of insured persons qualifying for invalidity benefit.

Table AII.8 Rates of entry into invalidity

Age	Males	Females
17	-	-
22	-	0.032
27	0.271	0.034
32	0.500	0.219
37	0.689	0.197
42	1.480	0.718
47	3.592	1.297
52	8.256	3.788
57	11.280	4.839

Table AII.9 shows the assumed probability of survivor benefit claims and the average number of eligible children, grouped by the age of the deceased.

Table AII.9 Probability of a deceased having eligible survivors' and the average number of eligible children

Age	Males		Females	
	Probability of Eligible Spouse	Avg # of Eligible Children	Probability of Eligible Spouse	Avg # of Eligible Children
17	0%	-	0%	-
22	6%	-	0%	-
27	14%	-	0%	-
32	18%	-	0%	-
37	23%	-	0%	-
42	24%	-	0%	-
47	25%	-	0%	-
52	27%	-	0%	-
57	32%	-	0%	-
62	35%	-	0%	-
67	20%	-	0%	-
72	19%	-	0%	-
77	14%	-	0%	-
82	8%	-	0%	-
87	6%	-	0%	-

Appendix III. Projection results under the *Pessimistic* and *Optimistic* scenarios

Table AIII.1 Projected population of Guyana – *Pessimistic* scenario, 2002-2062

Year	Total	Age 0 - 15	Age 16 - 59	Age 60 & over	Ratio of Persons 16-59 To 60 & Over
2002 Est	735,009	254,390	422,911	57,708	7.3
2003	736,688	253,195	424,108	59,384	7.1
2004	737,852	251,218	425,413	61,220	6.9
2005	738,506	248,646	426,598	63,262	6.7
2006	738,685	245,787	427,351	65,547	6.5
2007	738,428	243,018	427,337	68,073	6.3
2008	737,763	243,634	423,282	70,848	6.0
2012	732,389	226,350	422,530	83,509	5.1
2022	716,472	171,371	418,355	126,746	3.3
2032	692,996	145,916	379,741	167,340	2.3
2042	646,785	123,039	350,424	173,322	2.0
2052	577,414	96,541	315,017	165,857	1.9
2062	504,286	76,850	243,494	183,941	1.3

Table AIII.2 Projected population of Guyana – *Optimistic* scenario, 2002-2062

Year	Total	Age 0 - 15	Age 16 - 59	Age 60 & over	Ratio of Persons 16-59 To 60 & Over
2002 Est	735,009	254,390	422,911	57,708	7.3
2003	736,736	253,244	424,108	59,384	7.1
2004	738,223	251,415	425,583	61,225	7.0
2005	739,481	249,093	427,110	63,277	6.7
2006	740,554	246,592	428,383	65,579	6.5
2007	741,486	244,295	429,064	68,126	6.3
2008	742,312	245,502	425,882	70,929	6.0
2012	746,058	231,892	430,392	83,774	5.1
2022	774,488	195,426	451,046	128,017	3.5
2032	800,874	188,593	442,193	170,088	2.6
2042	804,638	176,585	448,850	179,204	2.5
2052	785,686	159,930	444,323	181,433	2.4
2062	760,585	148,763	396,778	215,044	1.8

Table AIII.3 Projected cash flows and reserves – *Pessimistic* scenario (billions of GY$'s), **2002-2062**

Year	Cash Inflow			Cash Outflow			Surplus/ (Deficit)	Reserves	
	Contribution Income	Investment Income	Total	Benefits	Admin.& Other Expenses	Total		End of Year	# of times current year's expenditure
2002	5.5	1.0	**6.4**	4.4	0.7	**5.1**	**1.3**	**21**	4.0
2003	5.9	1.0	**6.9**	4.9	0.8	**5.6**	**1.3**	**22**	3.9
2004	6.2	0.9	**7.1**	5.3	0.8	**6.1**	**1.0**	**23**	3.7
2005	6.6	0.9	**7.5**	5.8	0.9	**6.6**	**0.8**	**24**	3.6
2006	6.9	0.9	**7.8**	6.3	0.9	**7.2**	**0.7**	**24**	3.4
2007	7.2	1.0	**8.2**	6.8	1.0	**7.8**	**0.5**	**25**	3.2
2008	7.6	1.0	**8.6**	7.4	1.0	**8.3**	**0.2**	**25**	3.0
2012	9.3	0.9	**10.3**	10.1	1.2	**11.3**	**-1.0**	**23**	2.0
2022	14.3	-0.8	**13.5**	20.9	1.8	**22.7**	**-9.2**	**-26**	-1.1
2032	18.6	-7.4	**11.3**	34.1	2.3	**36.4**	**-25.1**	**-200**	-5.5
2042	24.1	-21.3	**2.8**	47.4	3.0	**50.4**	**-47.6**	**-568**	-11.3
2052	30.9	-47.1	**-16.3**	68.4	3.9	**72.2**	**-88.5**	**-1,246**	-17.3
2062	35.6	-94.7	**-59.1**	95.4	4.4	**99.9**	**-159.0**	**-2,495**	-25.0

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

Table AIII.4 Projected benefit expenditure – *Pessimistic* scenario (billions of GY$'s), 2002-2062

Year	Pensions & Benefits					Benefits as a % of:	
	Old-Age	Invalidity	Survivors	Short-term	Industrial	Insurable Wages	GDP
2002	2.7	0.2	0.6	0.7	0.2	10.2%	3.0%
2003	2.9	0.2	0.6	0.7	0.2	10.3%	3.0%
2004	3.2	0.3	0.7	0.8	0.2	10.5%	3.1%
2005	3.5	0.3	0.7	0.8	0.2	10.8%	3.1%
2006	3.9	0.3	0.8	0.9	0.3	11.0%	3.2%
2007	4.3	0.3	0.8	0.9	0.3	11.3%	3.2%
2008	4.7	0.4	0.8	1.0	0.3	11.6%	3.2%
2012	6.7	0.5	1.1	1.2	0.4	13.0%	3.4%
2022	15.3	0.7	1.7	2.0	0.6	17.5%	3.8%
2032	25.9	0.8	2.4	2.7	0.8	21.9%	4.1%
2042	36.2	1.1	3.3	3.7	1.0	23.6%	4.0%
2052	52.5	2.0	4.2	5.0	1.6	26.6%	4.0%
2062	74.6	2.7	5.2	6.0	2.0	32.2%	3.8%

Table AIII.5 Projected contributors and pensioners at year-end – *Pessimistic* scenario, 2002-2062

Year	# of Contributors	# of Pensioners				Total # of Pensioners	Ratio of Contributors to Pensioners
		Old-Age	Invalidity	Survivors	Death & Disablement		
2002	133,177	20,423	1,370	8,105	483	**30,380**	**4.4**
2003	134,221	20,727	1,465	8,236	510	**30,938**	**4.3**
2004	135,530	21,307	1,520	8,346	526	**31,700**	**4.3**
2005	137,039	21,871	1,553	8,444	537	**32,406**	**4.2**
2006	138,666	22,434	1,572	8,530	544	**33,081**	**4.2**
2007	140,993	23,003	1,581	8,607	549	**33,740**	**4.2**
2008	141,265	23,569	1,585	8,675	552	**34,381**	**4.1**
2012	147,437	26,345	1,590	8,893	560	**37,387**	**3.9**
2022	165,570	37,001	1,527	9,409	566	**48,504**	**3.4**
2032	152,143	44,165	1,309	9,776	536	**55,786**	**2.7**
2042	141,913	44,560	1,354	9,709	539	**56,162**	**2.5**
2052	132,964	46,439	1,773	9,167	598	**57,978**	**2.3**
2062	105,843	47,823	1,608	8,572	557	**58,560**	**1.8**

Table AIII.6 Projected cash flows and reserve – *Optimistic* scenario (billions of GY$'s), 2002-2062

Year	Cash Inflow			Cash Outflow			Surplus/ (Deficit)	Reserves	
	Contribution Income	Investment Income	Total	Benefits	Admin.& Other Expenses	Total		End of Year	# of times current year's expenditure
2002	5.5	1.0	**6.4**	4.4	0.7	**5.1**	**1.3**	**21**	4.0
2003	6.0	1.0	**7.0**	4.9	0.8	**5.6**	**1.4**	**22**	3.9
2004	6.5	0.9	**7.4**	5.3	0.9	**6.2**	**1.2**	**23**	3.7
2005	7.0	0.9	**8.0**	5.9	0.9	**6.8**	**1.2**	**24**	3.6
2006	7.6	1.0	**8.6**	6.4	1.0	**7.4**	**1.2**	**25**	3.4
2007	8.3	1.0	**9.3**	7.0	1.1	**8.1**	**1.2**	**27**	3.3
2008	8.9	1.1	**10.0**	7.6	1.2	**8.8**	**1.2**	**28**	3.2
2012	12.2	1.2	**13.5**	10.9	1.5	**12.5**	**1.0**	**32**	2.6
2022	24.2	0.9	**25.1**	26.3	3.0	**29.3**	**-4.2**	**21**	0.7
2032	38.7	-3.2	**35.5**	48.3	4.8	**53.1**	**-17.7**	**-91**	-1.7
2042	61.7	-13.5	**48.2**	76.6	7.7	**84.4**	**-36.1**	**-362**	-4.3
2052	93.7	-35.0	**58.7**	127.4	11.7	**139.1**	**-80.4**	**-932**	-6.7
2062	125.8	-82.7	**43.1**	195.0	15.7	**210.7**	**-167.6**	**-2,194**	-10.4

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

Table AIII.7 Projected benefit expenditure – *Optimistic* scenario (billions of GY$'s), 2002-2062

Year	Pensions & Benefits					Benefits as a % of:	
	Old-Age	Invalidity	Survivors	Short-term	Industrial	Insurable Wages	GDP
2002	2.7	0.2	0.6	0.7	0.2	10.2%	3.0%
2003	2.9	0.2	0.6	0.7	0.2	10.2%	2.9%
2004	3.2	0.3	0.7	0.8	0.2	10.2%	2.9%
2005	3.6	0.3	0.7	0.9	0.2	10.2%	2.9%
2006	3.9	0.3	0.8	1.0	0.3	10.2%	2.9%
2007	4.3	0.3	0.8	1.1	0.3	10.2%	2.8%
2008	4.7	0.4	0.8	1.2	0.3	10.3%	2.8%
2012	7.0	0.5	1.1	1.6	0.4	10.7%	2.8%
2022	18.0	1.1	1.9	3.4	0.9	13.0%	2.9%
2032	33.3	2.1	3.2	5.7	1.6	15.0%	3.0%
2042	50.5	3.9	5.2	9.5	2.9	14.9%	2.6%
2052	82.0	8.3	8.3	15.0	5.3	16.3%	2.5%
2062	129.6	11.6	13.4	21.1	7.5	18.6%	2.3%

Table AIII.8 Projected contributors and pensioners at year-end – *Optimistic* scenario, 2002-2062

Year	# of Contributors	# of Pensioners				Total # of Pensioners	Ratio of Contributors to Pensioners
		Old-Age	Invalidity	Survivors	Death & Disablement		
2002	133,177	20,423	1,370	8,105	483	**30,380**	**4.4**
2003	135,929	20,727	1,465	8,236	510	**30,937**	**4.4**
2004	138,999	21,305	1,521	8,346	526	**31,698**	**4.4**
2005	142,323	21,871	1,555	8,444	537	**32,407**	**4.4**
2006	145,817	22,435	1,576	8,531	545	**33,086**	**4.4**
2007	150,065	23,005	1,591	8,607	550	**33,754**	**4.4**
2008	152,311	23,572	1,603	8,676	555	**34,406**	**4.4**
2012	160,485	26,354	1,674	8,908	574	**37,510**	**4.3**
2022	179,638	37,073	2,102	9,599	672	**49,446**	**3.6**
2032	178,269	44,575	2,476	10,388	764	**58,203**	**3.1**
2042	184,545	45,703	3,135	10,904	896	**60,639**	**3.0**
2052	190,340	50,150	4,317	11,029	1,115	**66,611**	**2.9**
2062	174,734	54,022	3,869	11,490	1,065	**70,446**	**2.5**

Appendix IV – Details on benefit experience by branch

The projections presented in Chapter 3 combined all types of benefit expenditure. However, the NIS internal accounting procedures separate them into three branches – pensions, short-term, and industrial or employment injury benefits. This allows for better monitoring as each benefit type has different characteristics and funding objectives. Each branch is also expected to meet its expenditure from its income and accumulated reserves.

IV.1 Pensions Branch

The Pensions Branch presently receives the largest share of contribution income, 69.2 per cent, equivalent to 8.3 per cent of insurable earnings. Benefits payable from this branch are old-age, invalidity and survivors' pensions, and funeral grants. Over 80 per cent of benefit expenditure relates to this branch, since most of the pensions are payable for life. As a result, the Pensions Branch expenditure will continue to increase for many decades as more pensioners with larger pensions are added.

At 31 December 2001, the Pensions Branch reserves stood at GY$15.0 billion or 4.2 times their expenditure in 2001. (The amount of reserves relative to annual expenditure is a useful measure of how well benefits are funded. While a ratio of just over four for pensions indicates that reserves are insufficient to cover total accrued liabilities, it is consistent with the partial funding method adopted by NIS.)

Expenditure for each benefit type for 1999 to 2001, expressed as a percentage of insurable earnings, is shown in Table AIV.1. (Actual amounts paid by benefit type are provided in Appendix V.)

Table AIV.1 Pensions Branch expenditure as a per cent of insurable earnings, 1999-2001

	1999	2000	2001
Benefits			
– Old-age	4.3%	5.4%	5.7%
– Invalidity	0.3%	0.4%	0.4%
– Survivors	0.8%	1.0%	1.2%
– Funeral	0.03%	0.03%	0.03%
Administrative expenses	1.2%	1.2%	1.1%
Total	**6.6%**	**8.1%**	**8.4%**
Total benefits (billions of GY$'s)	**1.83**	**2.78**	**3.09**

Table AIV.2 Pensions in payment, awarded and terminated, 1999-2001

	Paid in December 1998	Awards, 1999-2001	Terminated 1999-2001	Paid in December 2001	Average monthly pension December 1998	Average monthly pension December 2001
Benefits						
Old-age	20,897	3,713	2,253	22,357	GY$5,798	GY$10,849
Invalidity	1,726	654	361	2,019	GY$6,720	GY$11,581
Survivors	6,761	2,117	930	7,948	GY$4,372	GY$6,045

Figures for survivors represent the number of claims, not the number of pensioners

Table AIV.3 highlights pension activity between year-ends 1998 and 2001. As expected the number of pensions in payment has increased for all benefits, as has the average monthly pension amount. The following table shows the number of grants paid and the average amount of each lump sum for during each of the three years under review.

Table AIV.3 Grants awarded, 1999-2001

Year	Old-age		Invalidity		Survivors	
	Number of awards	Average amount	Number of awards	Average amount	Number of awards	Average amount
1999	547	13,404	15	17,118	117	GY$47,048
2000	666	18,069	19	18,257	108	GY$49,561
2001	616	17,995	15	17,249	85	GY$70,616

Table AIV.4 below shows the number of funeral benefits awarded compared with the actual number of deaths in Guyana between 1999 and 2001.

Table AIV.4 Funeral benefit experience, 1999-2001

Year	Number of claims awarded	Cost as % of insurable earnings
1999	1,363	0.032%
2000	1,322	0.029%
2001	1,453	0.031%

Details of long-term projections of both the number of pensioners and expenditure are presented in Chapter 3. Given the long-term nature of pension benefits, expenditure will continue to increase, eventually surpassing income. Since it is expected that the other benefit branches will hold only small reserves, if the Pensions Branch ever exhausts, depletion of the entire National Insurance Fund would follow shortly thereafter. Therefore,

future contribution rate increases will be required, with most of the increased revenue allocated to the Pensions Branch.

IV.2 Short-term benefits branch

Unlike the Pensions Branch, the Short-term Benefits (STB) Branch is financed on a pay-as-you-go basis. That is, current income is expected to meet current expenditure, with only a small reserve required to cover fluctuations in income and/or expenditure. Over time, the cost of benefits in this branch is not expected to increase significantly, and if it does, small adjustments to the allocation of contribution income between branches may be made.

Analysis of the STB Branch is limited to determining whether or not the present portion of contribution income allocated is sufficient to meet projected payouts until the next actuarial review. By comparing total branch expenditure in recent years as a percentage of insurable earnings to the proportion of insurable earnings allocated to that branch, the adequacy of the present allocation is assessed. If the percentage of contribution and investment income allocated is expected to meet the projected cost of benefits for the next five years, the allocation rate is considered adequate.

The benefits covered under the STB Branch are sickness, maternity benefit and SBMC. Each year, 18.3 per cent of contribution income (equivalent to 2.2 per cent of insurable earnings) and investment income on reserves are allocated to this branch. Costs for the benefits listed above and a proportion of administrative expenditure are charged to the STB Branch. On 31 December 2001, Branch reserves stood at GY$958 million, an acceptable 1.24 times annual branch expenditure.

A summary of STB Branch experience for 1999 to 2001 is provided in Tables AIV.5 through AIV.8.

Table AIV.5 Sickness benefit experience, 1999-2001

Year ended	Number of Claims Awarded per 1,000 insured persons	Average benefit duration (days)	Average weekly benefit	Cost as % of insurable earnings
1999	97	10.8	6,390	0.43%
2000	104	10.2	8,554	0.49%
2001	103	10.5	8,855	0.50%

Table AIV.6 Maternity benefit experience, 1999-2001

Year ended	Number of claims awarded per 1,000 insured persons	Average benefit duration (weeks)	Average weekly benefit	Cost as % of insurable earnings
1999	18	8.1	4,311	0.23%
2000	17	8.8	4,935	0.23%
2001	18	8.5	5,415	0.25%

Table AIV.7 Maternity grant and SBMC experience, 1999-2001

	Maternity grant		Sickness Benefit Medical Care	
Year	Number of claims awarded	Cost as a percentage of insurable wages	Number of claims awarded	Cost as % of insurable earnings
1999	1,859	0.011%	51,823	0.98%
2000	1,662	0.008%	27,799	0.87%
2001	1,878	0.009%	16,136	0.73%

Table AIV.8 STB Branch administrative and total expenditure, 1999-2001

Year	As % of insurable earnings	
	Administration and other expenditure	Total STB Branch expenditure
1999	0.35%	2.00%
2000	0.36%	1.97%
2001	0.32%	1.81%

With 2.2 per cent of insurable earnings allocated from contribution income plus investment returns, the STB Branch incurred surpluses each year.

Estimates of STB Branch annual expenditure for the next few years are shown in Table AIV.9:

Table AIV.9 Annual projected STB Branch costs as a percentage of insurable earnings

Benefit/Expense	As % of insurable earnings
Sickness benefit	0.55%
Maternity benefit	0.25%
Maternity grant	0.01%
Sickness medical care	0.90%
Administration expenses	0.35%
Total	2.06%

The total estimated cost of 2.06 per cent of insurable earnings is less than the 2.2 per cent of insurable earnings now allocated to the STB Branch. Therefore, with reserves of 1.2 times annual expenditure and a contribution rate that is expected to produce sufficient income, the present allocation of contribution income can be maintained.

IV.3 Industrial Benefits Branch

Similar to the approach used for the Short-term Benefits Branch, the analysis of the Industrial Benefits (IB) Branch adopts a short-term perspective. Industrial benefits are those payable following on-the-job accidents and illnesses that arise due to employment. Benefits include injury benefits, medical care, industrial funeral grants, disablement grants, and death and disablement pensions.

Each year this branch receives 8.5 per cent of contribution income, or 0.72 per cent of insurable earnings, plus investment income on its reserves, less benefit costs and a portion of NIS administrative expenditure. Tables AIV.10 to AIV.13 highlight IB Branch experience for 1999 to 2001.

Table AIV.10 Injury benefit experience, 1999-2001

Year ended	Cost as % of insurable earnings
1999	0.14%
2000	0.13%
2001	0.14%

Table AIV.11 Medical care experience, 1999-2001

	Medical care	
Year	Number of claims awarded	Cost as % of insurable earnings
1999	3,537	0.07%
2000	5,185	0.08%
2001	3,917	0.05%

Table AIV.12 Disablement and death benefit awards and pensions in payment, 1999-2001

	Disablement Benefit			Death Benefit		
Year	# Pensions Awarded	Pensioners In Payment (December)	Payments as % of ins. earnings	# Pensions Awarded	Pensioners In Payment (December)	Payments as % of ins. earnings
1999	84		0.12%	15		0.05%
2000	54		0.12%	8		0.06%
2001	68	1,654	0.13%	12	400	0.06%

Table AIV.13 IB Branch administrative and total expenditure, 1999-2001

Year	As % of insurable earnings	
	Administrative and other expenditure	Total IB Branch expenditure
1999	0.17%	0.55%
2000	0.18%	0.56%
2001	0.16%	0.54%

Estimates of IB Branch annual expenditure as a percentage of insurable earnings for the next four years are shown in Table AIV.14:

Table AIV.14 Projected IB Branch costs as a percentage of insurable earnings

Benefit /Expense	As % of insurable earnings
Injury benefit	0.14%
Medical care	0.08%
Disablement benefit and grant	0.13%
Death benefit	0.07%
Administrative expenses	0.18%
Total	0.60%

Appendix V. NIS income and expenditure, 1999-2001

	1999	2000	2001
Income			
Contribution Income	4,069,469,000	4,868,345,000	5,099,375,000
Investment Income	1,520,133,000	1,837,018,000	1,693,947,000
Other Income	15,894,000	17,726,000	17,071,000
Total Income	**5,605,496,000**	**6,723,089,000**	**6,810,393,000**
Expenditure			
Benefits			
Sickness Benefit	146,785,000	200,469,000	210,751,000
Maternity Benefit	80,993,000	98,258,000	111,488,000
Maternity Grant	-	-	-
Medical Care Benefit	333,735,000	354,729,000	311,620,000
Old-age Benefit	1,448,664,000	2,191,311,000	2,409,240,000
Invalidity Benefit	103,520,000	155,453,000	180,639,000
Survivor's Benefit	268,915,000	424,294,000	489,035,000
Funeral Benefit	10,741,000	11,961,000	13,198,000
Medical Care	22,250,000	33,450,000	22,302,000
Injury Benefit	47,230,000	51,267,000	60,265,000
Disablement Benefit	40,089,000	46,836,000	54,334,000
Death Benefit	17,522,000	22,821,000	25,071,000
Total Benefit Expenditure	**2,520,444,000**	**3,590,849,000**	**3,887,943,000**
Administrative Expenditure	**586,960,000**	**722,409,000**	**683,437,000**
Total Expenditure	**3,107,404,000**	**4,313,258,000**	**4,571,380,000**
Excess of Income over Expenditure	**2,498,092,000**	**2,409,831,000**	**2,239,013,000**
Revaluation Surplus	**-**	**488,056,000**	**-**
Reserves at End of Year	**14,120,544,000**	**17,018,431,000**	**19,257,444,000**
Short-term Benefits Branch	346,322,914	623,575,229	957,916,853
Pensions Branch	12,326,565,058	13,780,874,431	15,004,936,278
Industrial Benefits Branch	1,372,144,027	2,050,413,340	2,731,022,869
Capital Reserve	75,512,000	563,568,000	563,568,000

Appendix VI. Investment guidelines

In October 2001, the ILO hosted a two-day tripartite meeting in Barbados on Social Security Financing and Investment Policies for Pension Funds that was attended by representatives of Caribbean governments, social security boards, employers and workers. During the meeting, participants were divided into groups and asked to discuss several topics. After these discussions, each group's ideas and recommendations were presented. One topic was the investment of social security funds. The recommendations emerging from the working groups on this topic were summarized and reviewed by the ILO. These findings were used to form the basis of the "Guidelines on Social Security Financing and Investments in the Caribbean". Following is a summary of these guidelines.

VI.1 General guidelines relating to investments

- Social Security Boards should, in consultation with government, establish an Investment Policy Statement. The Investment Policy Statement should be revised at least once every three years.

- A target rate of return for the entire investment portfolio should be established. Depending on the level of risk accepted, the real rate of return objective should be in the order of 3 per cent to 5 per cent.

- The Investment Policy Statement should also include an asset allocation, selected in order to achieve the target rate of return of the National Insurance Fund, with maximum and minimum limits for each major category.

- Asset allocation rebalancing must be done in relation to the investment portfolio at the time of determining the Investment Policy. A transition period before reaching the desired target asset allocation is desirable.

- Funds should be invested with consideration of the liquidity needs to meet cash flow requirements.

VI.2 Guidelines concerning specific types of investments

Government or government-backed securities should not exceed 50% of the investment portfolio. The ability of the scheme to redeem government bonds must be measured against liquidity needs. Governments should pay interest and face amounts of maturing bonds in cash instead of rolling over the principal and interest. Where applicable, governments should also pay market rates for the rental of properties owned by the social security scheme.

Overseas investments represent a measure of diversification and a way to reduce currency risk. For these particular types of investments, there is need for training of in-house investment managers and/or the hiring of international fund managers.

Social investments, or those considered to enhance economic and social utility, could make up a small portion of the Social Security asset portfolio. Such investments include participation in private sector initiatives, state enterprises, student loans, low cost housing, old-age facility, culture, health infrastructure, tourism, recreation, sport, and human resource enhancement. Before each investment is made, however, a study must be done

showing the potential profitability and social benefits of the project. Once made, there should be regular monitoring of experience.

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