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Dominica

Report to the Government

Eighth Actuarial Review of the Social Security Fund as of 31 December 2002

Financial, Actuarial and Statistical Services Branch
Social Protection Sector
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Foreword

Section 18 of the Social Security Act requires that an actuarial review of the Dominica Social Security (DSS) Fund be conducted at least every three years. This is the eighth review of the DSS Fund and it has been performed as at 31 December 2002; it comes three years after the previous review.

In 1999, the International Labour Organization (ILO) and six Caribbean countries, including Dominica, 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 DSS Fund and to review contribution and benefit provisions, making recommendations where appropriate.

This report is divided into two sections – the main report and the appendices. The main report contains an analysis of recent experience and results of population, economic and DSS Fund projections to 2062. A brief discussion of several policy and operational issues completes this section.

The appendices that follow contain a summary of key social security contribution and benefit provisions, a description of the methodology used for the valuation and detailed tables of the key data, assumptions and projection results. They also provide an analysis of the experience of each benefit branch during the inter-valuation period from 2000 to 2002.

Contents

Acknowledgements

The programme's Project Actuary, Mr. Derek Osborne, was appointed by the ILO to undertake this assignment. Mr. Osborne visited Dominica in March 2003 to gather the necessary data. He also had discussions with the Minister of Finance (the Prime Minister), the Minister for Health and Social Security, members of the Board, DSS senior management, and representatives of workers' and employers' organizations. The International Financial and Actuarial Service of the ILO assumed overall technical responsibility.

This actuarial review is the product of contributions by Mrs. Johanna John-Bertrand, Dominica's national counterpart under the ILO Umbrella Programme for Actuarial Reviews to Selected Countries of the Caribbean. Her tasks included gathering the data and assisting the Actuary during his visit to Dominica.

The ILO Director-General wishes to express his sincere thanks to the Director of the Social Security Board, Mr. Steven Mayers, the national counterpart and other staff of the Social Security Board for their collaboration and assistance provided throughout this project.

Abbreviations and acronyms

BVI	British Virgin Islands
CARICOM	Caribbean Community
DSS	Dominica Social Security
EC$	Eastern Caribbean dollar
EIB	Employment injury benefits
GAP	General average premium
GDP	Gross domestic product
ILO	International Labour Organization
IMF	International Monetary Fund
IPS	Investment Policy Statement
LTB	Long-term benefits
OECD	Organisation for Economic Co-operation and Development
PAYG	Pay-as-you-go cost rate
RBF	Redundancy Benefits Fund
RER	Reserve-expenditure ratio
STB	Short-term benefits
TFR	Total fertility rate
US$	United States dollar

Currency and exchange rate

As at December 2002:
1 United States dollar (US$) = 2.7 East Caribbean dollars (EC$)

Executive summary

Some of the benefits that current DSS contributors anticipate receiving will be paid more than fifty years from today. Therefore, to determine whether or not their social security system is sustainable over the long-term, periodic actuarial reviews are conducted. In these reviews an examination of the DSS 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.

Dominica is presently in the midst of an economic and financial crisis following a period of economic decline, reductions in employment, high levels of outward migration and deteriorating public finances. For DSS, the main impact thus far has been the Government's inability to meet its contribution and debt servicing obligations and the decline in the number of contributors. Also, while benefit growth continues as expected, income from contributions has been flat. As a result, DSS expenditure in 2002 matched contribution income for the first time and will exceed contributions in 2003.

When combined, income and expenditure in the years 2000 to 2002, was slightly better than projections in the 7th Actuarial Review. The 2002 year-end reserves[1] were $10 million higher than projected and stood at $237 million or 8.6 times total expenditure in 2002. While this is an acceptable level of funding, assets are significantly less than the present value of total benefits already earned by past and present contributors. Also, together with future contributions at 9.75 per cent of insurable earnings, these funds are insufficient to meet expenditure for the long-term.

Along with a review of the Fund's position as of 31 December 2002, this report includes projections of DSS 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 likely outcomes. These scenarios have been dubbed *Pessimistic*, *Intermediate* and *Optimistic*, and differ with respect to future population and economic experience.

Figures 0.1 and 0.2 show the projected trend for DSS reserves under the *Intermediate* scenario, assuming that the contribution rate and benefit provisions remain unchanged and the past and projected trend of expenditure, expressed as a percentage of insurable earnings. The key results of the *Intermediate* scenario projections are listed below and are based on the contribution and benefit provisions in place on 1 January 2003.

[1] Redundancy Benefits Fund not included.

Figure 0.1 Projected reserves, status quo provisions

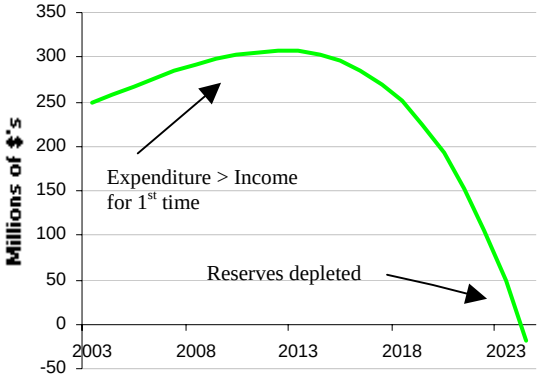
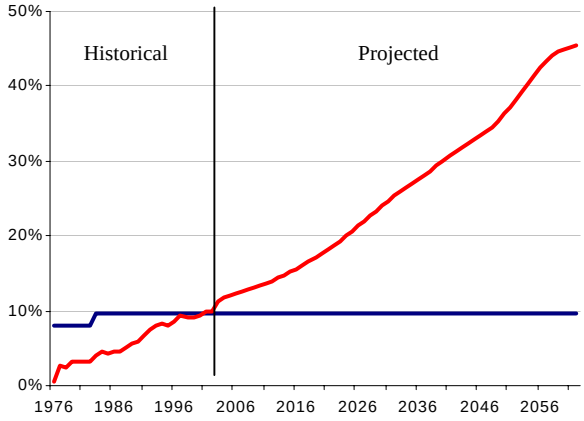


Figure 0.2 Contribution and expenditure rates, status quo provisions



- The population will remain around its present level of 71,500 for the next 15 years, then increase slightly through 2045, before gradually declining.

- 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 DSS contributors for each pensioner will fall from 4.7 in 2002 to only 1.0 in 2062.[2]

- Annual expenditure is projected to exceed each year's contribution income throughout the projection period.

- Reserves are expected to begin decreasing in 2013, when total expenditure will exceed total income for the first time. Eleven years later in 2024, reserves are projected to become exhausted.

- The pay-as-you-go cost rate (PAYG cost rate), or the rate required to produce just enough contribution income to meet expenditure if there is no Fund, will increase from 9.75 per cent in 2002 to 20 per cent in 2024. This rate will increase gradually to just over 45 per cent in 2062.

[2] This low level is largely due to high levels of migration by persons who may have earned the right to a pension prior to leaving Dominica.

- 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 22.3 per cent.

For the *Pessimistic* scenario, the first cash flow deficit is expected in 2010 with Fund depletion in 2022, while under *Optimistic* assumptions, expenditure is projected to exceed income beginning in 2017 with Fund depletion in 2027.

Other projection results presented in this report suggest the following:

- If the Government fails to meet its contribution and interest obligations, DSS will soon have to call or sell some of its investments to help meet cash shortfalls.

- Increasing the retirement age, changing the way pensions are calculated and earning higher rates of return on investments are some of the things that may be done to reduce long-term costs.

- To secure a reserve level of at least five times expenditure in 2036 and two times in 2062, rate increases of 1 per cent each year from 2005 to 2018 will be required. This would bring the total contribution rate to 23 per cent. Alternatively, the rate may be increased 3 per cent every 5 years reaching 24.5 per cent in 2025.

These results, while more pessimistic than those presented in the 7th Actuarial Review, show similar trends for DSS income, expenditure and reserves. The differences in result are due mainly to the much smaller number of projected DSS contributors this time as a result of lower total population projections. However, these projections once again 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 much higher than the current rate that has been in place since 1983. Therefore, if DSS is to meet its commitments to future generations of pensioners, higher contribution rates and/or reduced benefit promises will be required.

Recommendations

The recommendations made throughout this report are summarised below:

1. Adjust the scale of pension accrual rates awarded for different periods of service. Presently, a pensioner gets 30 per cent of average insurable wages after only ten years and 60 per cent after 35 years. A schedule of more linear accruals should be put in place. Also, the maximum benefit percentage should be reduced from 70 per cent to no higher than 60 per cent. (Section 4.1)

2. Calculate old-age pensions using earnings over one's career (at least 25 years) instead of only the best three years in the last ten. Under an indexed career average approach the pension amount will be consistent with actual insured earnings and contributions paid, resulting in greater equity among pensioners. (Section 4.2)

3. Adjust the ceiling on insurable earnings, pensions in payment and lump sum grants annually in line with increases in wage and/or price indexes, with the rules governing such adjustments placed in Regulations. Regular and predictable adjustments will ensure that insurance coverage and pensions keep pace with increases in wages and the cost of living, and are free of political

influence. Since no national wage index presently exists, one should be created, either by the Central Statistics Office or by DSS. (Sections 4.3 and 4.4)

4. For widow(er)s, consider paying a portion of the survivors' pension together with an old-age pension instead of only the higher of the two. Under present rules where only the greater of the two is paid, household income could fall by more than 50 per cent upon the death of one spouse where both were in receipt of DSS pensions, resulting in an immediate fall in the pensioner's standard of living. (Section 4.5)

5. Increase the rate of the minimum pension. For old-age and invalidity pensioners, the minimum pension is now $25 per week or 7 per cent of average insurable earnings. For survivors' pensions payable to widow(er)s the rate is even lower at 50 per cent of the old-age minimum pension. A more suitable level for the minimum pension for old-age, invalidity and survivors' pensions to widow(er)s would be twice the current rate. (Sections 1.2.1 and 4.5)

6. Review the contribution and benefit structure now in place for self-employed persons with a goal of offering a system that is more consistent with the nature of self-employment so that a larger percentage of them make regular DSS contributors. This group represents about one-third of the workforce and fewer than 5 per cent of them are presently regular contributors. Therefore, extensive education on the benefits of contributing is required, as a reliable and adequate DSS pension in old age will substantially reduce poverty levels among elderly formerly self-employed persons, and thereby reduce poverty levels throughout Dominica. (Section 4.7)

7. Find suitable and productive ways of using the excess reserves that have accumulated in the Redundancy Benefits Fund. In the wake of increased unemployment and the definite need for enhancing the skills of the labour force, much of the $4.9 million[3] now available could be used to either increase the 10 per cent rebate provided to employers, thus relieving them of financial hardship, implement training programmes for unemployed workers in preparation for re-employment, especially in new industries, or possibly as initial funding for an unemployment insurance scheme. (Section 4.8)

8. Review the Investment Policy for DSS investments and gradually improve portfolio diversification by reducing present concentrations in securities issued by the Dominica Government and various Statutory Bodies, as well as moving more assets into longer-term securities whenever possible. Consideration should also be given to increasing the amount held outside Dominica, both within the CARICOM region and internationally. (Section 5)

9. Transfer $24 million from the Short-term benefits branch and $40 million from the Employment injury benefits branches to the Long-term benefits branch. Also, the allocations of DSS contribution income[4] to the three benefit branches should be amended as follows: 28.2 per cent to the STB branch, 66.7 per cent to the LTB branch and 5.1 per cent to the Employment injury benefits branch. These transfers and allocation changes do not affect the long-term sustainability

[3] Of this $4.9 million, $0.9 million is due from employers and recoverability of the entire amount is uncertain.

[4] Not including the amount collected for the Redundancy Benefits Fund

of the Fund but would bring consistency to the manner in which DSS has chosen to finance the various benefit types. (Appendix IV.3)

10. The Government should implement all outstanding requirements under the September 2002 Memorandum of Understanding signed with DSS relating to the Government's indebtedness. Once complete, the Government should strive to remain current with its contributions and debt servicing obligations so that DSS could readily meet its cash-flow obligations without having to sell assets in the near term. (Section 4.9) The Government is also encouraged to enact the proposed amendments emanating from the 7th Actuarial Review.

Given the current recession in Dominica and the structural adjustments that are taking place, no contribution rate increase is being recommended now. However, as the projections indicate, increases to the contribution rate are inevitable if DSS is going to fulfil the promises it now makes to contributors.

A significant amount of uncertainty exists regarding the extent, pace and sustainability of an economic turnaround. Also, population declines in the last two decades that reversed an 80-year trend of consistent growth, increase the range of reasonable possibilities for future population levels. As a result, the projections of Dominica's population and economy are less optimistic in this Actuarial Review than they were in the previous one. There is little doubt, however, that over the next 60 years Dominica's pension-age population will grow at a faster rate than the working-age population. For DSS, this will mean that fewer contributors will be asked to support each pensioner. And with a contribution rate that is below the average cost of future benefits, such demographic pressures will result in reserves becoming exhausted if contribution rate increases and benefits reductions are not made.

Within the next three years, the initiation of an extensive effort in pension reform is strongly recommended. Such an exercise should involve the review of not only DSS pensions, but also all forms of income protection for the elderly. These include state-provided assistance to those who do not qualify for a DSS pension but are poor, as well as private sector individual and employer-sponsored pension arrangements. Since the DSS pension was not designed to meet the entire income needs of elderly persons, other methods of encouraging long-term savings by workers and employers should be created.

For DSS, pension reform should focus on both reducing long-term costs and improving equity, both within and between generations. Presently, DSS pensions may be categorised as generous and inequitable between those with short versus long contribution periods. The amounts paid are also often not consistent with actual insured earnings over one's career and given the method of financing adopted, transfer much of the pension cost for current workers to future contributors. Therefore, reforms should also ensure that DSS provides adequate, equitable and affordable pensions both today and well into the future.

The longer reforms and rate increases are postponed the more drastic eventual changes will have to be. The first step, therefore, should be to reduce DSS long-term costs by making parametric reforms to pension provisions. Once these are made and the economy is back on a sound growth path, a schedule of contribution rate increases should be adopted to achieve prudent funding objectives. Failure to make either of these reforms in the short to medium-term will result in a gradual deterioration of DSS finances, a reduction in pensions to then existing pensioners and extremely high contribution rates for future contributors.

1. Review of financial experience and other activities

1.1 Financial experience, 1976-2002

Dominica Social Security began operations in February 1976, introducing a defined benefit system of social security that replaced a Provident Fund system that had existed since 1971. Initially, only long-term and short-term benefits were offered; employment injury benefits were added in 1983.

Figure 1.1 illustrates various aspects of DSS financial experience between 1976 and 2002. Together these charts highlight the gradual maturing of Dominica's social security system by comparing annual contribution and expenditure rates, noting the change in DSS relative funded level over time, and the changes in the relative size of each benefit type as a proportion of total benefit expenditure. The trends noted in each chart are consistent with the type of social security scheme and the financing method adopted at inception.

1.2 Activities since the *Seventh Actuarial Review of the DSS*

1.2.1 Amendments to Acts and Regulations

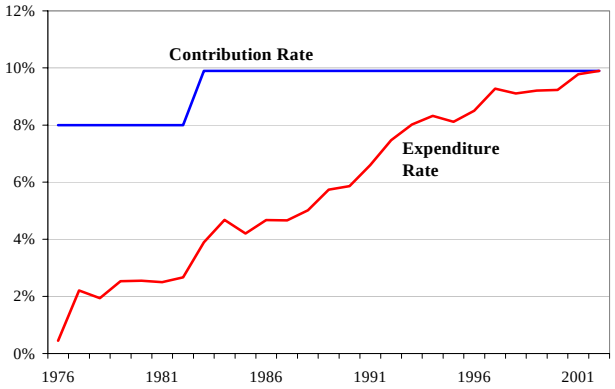
No amendments were made to DSS Regulations between 2000 and 2002. However, at the time of preparing this report, several changes had been submitted to Cabinet for approval, many of which were recommendations of the 7th Actuarial Review. The proposed change with greatest financial impact calls for an increase in the number of weekly contributions required for qualification for an old-age pension from 300 to 500. Other proposed amendments include:

- Payment of maternity grants for each live birth in the event of multiple births;
- Removal of the earnings test for widow(er)s pensions;
- Provisions for the exchange of information with the Inland Revenue Department re earnings of insured persons, especially the self-employed;
- Permit survivor children who are between 16 and 18 but still in school to qualify for a pension and allow invalid children over 16 of a deceased insured to qualify for survivors' pension;
- Redefine the term "self-employed" to specifically include medical practitioners, architects and other professionals;
- Various measures aimed at increasing the power of the Director to assess and collect outstanding contributions;

The ILO supports these amendments and encourages the Government to enact them as soon as possible. A detailed summary of current DSS key coverage, contribution and benefit provisions is provided in Appendix I.

Figure 1.1 DSS financial experience, 1976-2002

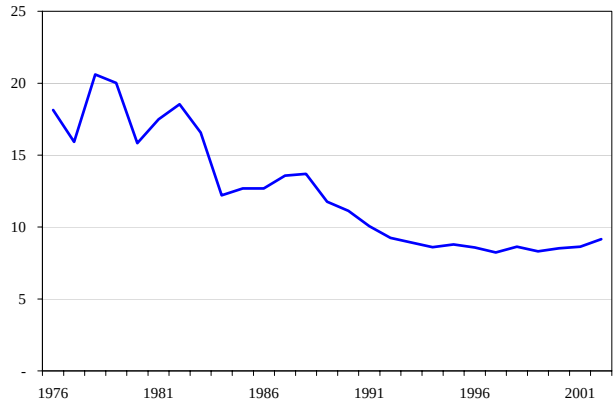
Contributions and expenditure as a percentage of insurable wages



When expenditure is expressed as a percentage of insurable earnings, it can be readily compared with the contribution rate. While the contribution rate has remained constant since 1983, expenditure has trended upwards, equalling the average contribution rate of 9.9 per cent in 2002. If expenditure exceeds contributions, investment income is required to meet expenditure.

Since a large portion of contributions over the last few years has not been collected in cash, some investment income is already being used to meet expenditure.

Reserve-expenditure ratio

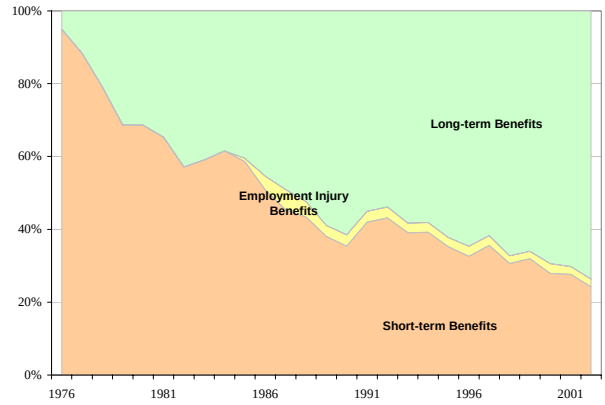


The reserve-expenditure ratio (RER) reflects the size of the year-end reserve relative to that year's expenditure and is a useful measure of how well a social security scheme is funded at any time.

As seen from the chart, funding levels have declined gradually, rebounding slightly in recent years. At the end of 2002, the RER stood at 8.7.

While a ratio of almost 9 does not mean that the Fund can only meet nine more years of expenditure, a ratio this low for a scheme that is not yet mature confirms its partially-funded status and the need for future strengthening.

Distribution of benefit expenditure



As DSS has matured, the proportion of benefit expenditure related to long-term benefits or pensions has increased gradually. In 2002, long-term benefits represented 74 per cent of benefit expenditure, short-term benefits 24 per cent, and employment injury benefits only 2 per cent.

As more persons qualify for larger pensions, long-term benefits will make up an even higher percentage of expenditure, confirming DSS main objective of providing income security in old age.

1.2.2 Financial experience

During the past few years, output, economic growth and employment in Dominica have been on the decline while outward migration increased. For DSS, the greatest impact has been on the number of active insured persons, which has declined from around 20,000 in 1999 to 16,500 in 2002, and on the Government's failure to pay contributions and some of its interest payments. Table 1.1 summarizes income, expenditure and year-end reserves for 2000 to 2002. Additional details may be

found in Appendix V. Most noteworthy from the figures shown in Table 1.1 is that DSS has been able to maintain growth in contribution and investment income even with the downturn in the economy.

Table 1.1 Summary of DSS finances, 2000-2002 (millions of $'s)

	2000	2001	2002
Income			
Contributions	26.6	26.5	27.8
Investment	11.7	12.1	13.9
Other	0.2	1.2	1.2
Total	38.5	39.8	42.9
Expenditure			
Benefits	19.9	21.3	22.4
Administrative	4.9	4.1	4.2
Other		0.8	1.2
Total	24.8	26.2	27.8
Excess of income over expenditure	13.7	13.6	15.1
End-of-year reserves	211.8	225.4	242.4 (240.5)

Note: Redundancy Benefits Fund included.

It should be noted that over the past few years the Dominica Government has not paid any contributions and only a portion of its interest on outstanding debt securities. DSS finances are compiled using accrual based accounting and thus not all of the income shown above was received in cash. In 2002, for example, approximately 55 per cent of contribution income, 64 per cent of investment income and 20 per cent of other income was received in cash.

Compared with the projections of the 7th Actuarial Review, contribution income was less than projected due to economic conditions and the reduction in the number of contributors. However, investment earnings were higher than projected while benefit expenditure was lower than projected – also partly impacted by fewer contributors. Due to a 30 per cent reduction in staff in 2001, achieved through a Voluntary Separation Package, administrative expenses were lower than projected. In total, the combined 2002 year-end reserve of the three benefit branches (Redundancy Benefits Fund excluded) was $236.6 million, slightly higher than projected in the last actuarial review.

1.2.3 Design and performance indicators

Given the broad range of objectives of a social security scheme, evaluating its performance could be rather difficult. Such an assessment should consider the achievement of the scheme's overall goals as they pertain to the level of coverage and the provision of adequate and reasonable benefits and pensions, as well as how efficiently it is administered and how prepared it may be to meet rising costs over time. Table 1.2 provides a summary of several key indicators of coverage and benefit levels provided by DSS and its operational performance, highlighting changes between 1999 and 2002.

Table 1.2 Current DSS design parameters and performance indicators, 1999 and 2002

Indicators	1999	2002
1. Ratio of ceiling to average insurable wage	3.2	3.1
2. Minimum pension as a percentage of average insurable wages	7%	7%
3. Average old-age pension as a percentage of average insurable wages	22%	27%
4. Active insured persons as a percentage of employed population	76%	(1)
5. Percentage of self-employed persons making DSS contributions	5%	(1)
6. Number of contributors per pensioner	7.1	4.7
7. Percentage of over-60 population receiving a DSS pension	28%	34%
8. DSS benefits and pensions as a percentage of GDP	3.0%	3.7%
9. Reserve as a percentage of GDP	32%	40%
10. Contribution rate (excluding redundancy benefits)	9.75%	9.75%
11. Expenditure rate (excluding redundancy benefits)	9.1%	9.75%
12. Investment income expressed as a percentage of insurable earnings	4.4%	5.0%
13. Yield on reserves	6.1%	6.1%
14. Administrative expenses as a percentage of contributions	20.3%	15.0%
15. Administrative expenses as a percentage of contributions and Benefits	11.8%	8.3%
16. Administrative expenses as a percentage of insurable wages	2.0%	1.5%
17. Reserve-expenditure ratio	8.3	8.7

(1) No estimate of employed population.

The first nine indicators provide an indication of the level of social protection coverage presently being offered by DSS and its significance relative to the population and economic factors. Most noteworthy among these indicators are the relatively high ceiling and low minimum pension relative to average insurable earnings, the very low level of coverage among the self-employed and the dramatic decrease in the contributor/pensioner ratio over the past three years.

Items 10 through 17 provide an indication of DSS financial and administrative performance. The main issues that stand out here are that in 2002 expenditure was equal to contribution income and the significant decline in administrative costs between 1999 and 2002.

1.3 Investment portfolio

At the end of 2002, DSS investments stood at $167 million, slightly down from the $169 million at the end of 1999. While total assets increased from $203 million to $244 million during the same period, the fall in invested assets is due to the increase in accounts receivable from $29 million to $72 million. While a small portion of the amounts due was accrued interest that was not yet payable, outstanding contributions made up $47.7 million, $41.4 million of which was due from the Dominica Government, and $11.6 million in unpaid interest on government debentures. (See Section 4.9 for further details on amounts owed by the Government.)

Table 1.3 provides a summary of the investment mix at year-end 2002 and 1999. During the review period local equities were added to the portfolio with the other significant change being the decrease in the portion of cash and fixed deposits from 25 per cent to 16 per cent. The average annual rate of return on reserves over the three years was 5.9 per cent.[5]

Table 1.3 Summary of investment portfolio, year-end 1999 and 2002 (millions of $'s)

Investment category	2002		1999	
	$'s	%	$'s	%
Government securities and loans	78.219	47.0%	80.982	47.9%
Cash and fixed deposits	26.943	16.2%	39.491	23.4%
Loans	44.884	26.9%	34.614	20.5%
Equities - local	7.539	4.5%	8.089	4.8%
Overseas bonds and equities	0.375	0.2%	0.325	0.2%
Real estate	8.606	5.2%	5.328	3.2%
Total	**166.566**	**100.0%**	**168.829**	**100.1%**

An analysis of Social Security Fund investments at the end of December 2002 reveals the following:

- Almost half of the portfolio was held in Government of Dominica securities.
- Since some of the loans to Statutory Bodies have government guarantees, the proportion of the Fund for which the Government is ultimately responsible is even higher than 50 per cent.
- Total loans, fixed deposits and equities held in Statutory Bodies account for 32 per cent of the portfolio. Therefore, 79 per cent of the total DSS investments are held in Government and Statutory Bodies.
- Equities make up just over 5 per cent of the portfolio.
- Of the funds total investments, 99.8 per cent were domiciled in Dominica.

A more detailed analysis and discussion of DSS investments, along with guidelines and recommendations for enhancing the portfolio's yield, diversification, asset-liability match and overall management may be found in Section 5.

[5] The rate of return on investments would be higher since a significant portion of reserves is not invested.

2. Population and economic projections

Future DSS income and expenditure will be closely linked to future changes in the size and age structure of the population, employment levels, economic and wage growth, inflation, and rates of return on investments. Therefore, to best estimate future DSS finances, projections of Dominica's total population and economic activity are required. Population projections provide estimates of the size and composition of the labour force, while projections of GDP and worker productivity growth indicate how many workers are needed in the economy and what their likely incomes will be. Since these factors are both directly and indirectly interrelated – for example, changes in population directly affect the economy and economic performance impacts personal behaviour such as migration – population and economic projections are performed together to ensure that the assumptions made produce consistent results.

For this review 60-year projections of the population, economy and DSS finances have been performed. Given the significant uncertainty inherent in forecasting such a long period, projections have been performed using three sets of assumptions. These assumptions have been developed following analysis of historical trends and on plausible future experience. Since the population and economic projections are only an intermediary step to DSS projections, only a summary of the assumptions and projection results are discussed in this section. Further details may be found in Appendices II and III.

2.1 Demographic assumptions

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 Dominica. As recent experience indicates, the most volatile of these three assumptions is migration.

The last official population census took place in 2001. At the time of writing this report only preliminary results were available.[6] Between 1991 and 2001 there was a very slight decrease in population of 69 persons to 71,727, a direct result of net outward migration of approximately 900 persons per annum. After 80 years of growth at the start of the 20th century, the population has since declined from its highest official count in 1981 of almost 74,000. (See Chart 4)

The total fertility rate 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. In 2001, Dominica's TFR was estimated at 2.0, having fallen from 4.2 in 1981 and 3.0 in 1991.

Life expectancy at birth in 2002 has been estimated at 71 for males and 74 for females. While further improvements in life expectancy are expected, the increasing prevalence of HIV and AIDS in Dominica may retard the rate of previously expected improvements. For these projections improvements in mortality are

[6] Totals by male/female but no details by age.

assumed to occur in accordance with UN estimates. While deaths due to HIV and AIDS have not been explicitly accounted for, the rate of mortality improvements chosen considers the effects of the HIV/AIDS pandemic. With the above assumptions, life expectancy at birth in 2062 for the *Intermediate* scenario is estimated to be 78 for males and 82 for females. At age 60, life expectancy is projected to increase from 19 to 22 years and from 21 to 25 years for males and females, respectively.

Dominica has historically seen more people permanently leaving than entering, with wide fluctuations closely tied to prevailing economic circumstances. For example, while estimated net outward migration averaged 890 in the 1990s, it averaged 1,640 during the 5-year period 1996 to 2001. For each of the three scenarios, gradual reductions in the level of outward migration have been assumed.

2.2 Economic assumptions

After growing at an average rate of around 2.5 per cent between 1996 and 1999, IMF estimates place real GDP growth at less than 1 per cent in 2000, -4.6 per cent in 2001 and around -0.5 per cent in 2002.[7] Public finances deteriorated during this period and the IMF is presently assisting the Dominican Government in restoring order to the public finances, putting the economy on a path consistent with public debt sustainability, a recovery of private investment, and sustainable output and employment growth. While a rebound in the short-term is projected, various local, regional and international shocks could alter anticipated improvements.

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

Table 2.1 indicates the principal demographic and economic assumptions of the three projection scenarios. Further details may be found in Appendix II.

2.3 Projection results

Figure 2.1 shows how Dominica's population changed during the twentieth century along with projected populations for each of the three assumption sets. While a return to population growth is forecast in the *Optimistic* scenario, the *Pessimistic* scenario forecasts further declines. For the *Intermediate* scenario, the population is projected to remain at present levels for around 15 years, increase slightly during the medium-term, before decreasing after 2045.

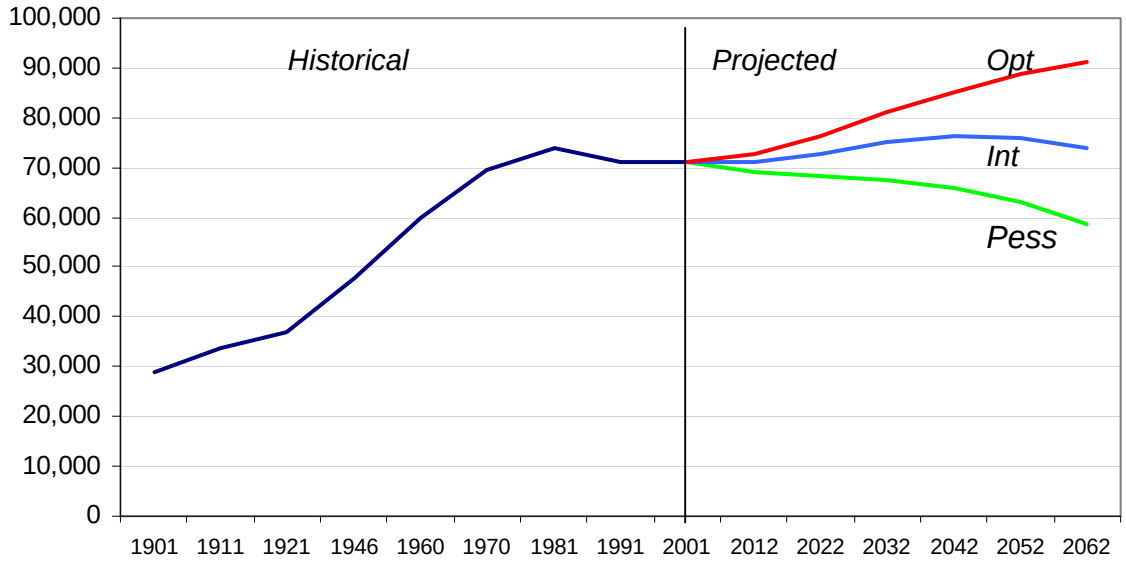
[7] Source: *IMF Staff Report for the 2002 Article IV Consultation & Request For Stand-by Arrangement*

Table 2.1 Principal assumptions for population and economic projections

		Pessimistic	*Intermediate*	*Optimistic*
Ultimate fertility (from 2.0)		1.70 in 2022	1.85 in 2012	Constant at 2.00
Mortality improvements*		Slow	Medium	Medium
Net outward migration		Decrease from 1,000 in 2002 to 700 in 2012, 500 in 2022, 200 in 2042, constant thereafter	Decrease from 800 in 2002 to 600 in 2012, 300 in 2022, 150 in 2042, constant thereafter	Decrease from 700 in 2002 to 500 in 2012, 250 in 2022, 0 in 2042, constant thereafter
Real GDP growth	Short-term	2.50%	3.00%	3.50%
	Medium-term	2.00%	2.50%	3.00%
	Long-term	0.75%	1.50%	2.25%
Inflation		3.50%	3.00%	2.50%

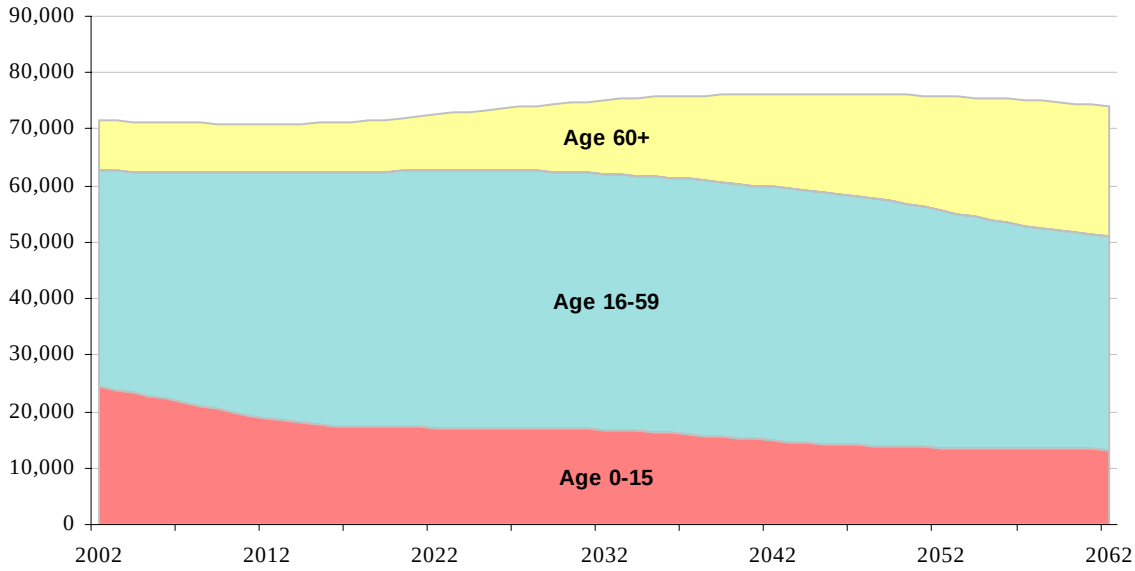
* UN mortality improvement rates

Figure 2.1 Historical Dominica population and projections under the three scenarios



For the projections under the *Intermediate* scenario, the age distribution of the total population is shown in Figure 2.2. The changes in the relative size of each age group – fewer children and many more pension-age persons – illustrate the forecasted ageing of Dominica's population. Such ageing is a direct result of reducing birth rates, improvements in longevity and the migration of mainly working age persons.

Figure 2.2 Projected Dominica population (*Intermediate* scenario) by age group, 2002-2062



Highlights of *Intermediate* scenario population projections are:

- The total population will remain around its present level for another 15 years and then increase slightly thereafter through 2045, before gradually declining.
- A decrease of almost 50 per cent in the number of children and a two-and-a-half times increase in the number of pension-age persons.
- Within the next 40 years, Dominica will have more pension-age residents than children.
- The number of working-age persons for each pension-age resident will fall from 4.4 to 1.7.

For DSS, where pension payments to the elderly already represent around two-thirds of benefit payments, and contributions from workers are needed to meet expenditure, the projected change in the population's age structure has significant long-term consequences. Population ageing will also create major challenges for the Dominica Government, as a larger and older society will place increased and different demands on physical infrastructure, health and other social programmes. Therefore, proactive measures by both the Government and DSS are required to ensure that the needs of future generations will be sufficiently met.

Table 2.2 Projected Dominica population (*Intermediate* scenario), by age group, 2003-2062

Year	Total	Age 0 - 15	Age 16 - 59	Age 60 and over	Ratio of persons 16-59 to 60 and over
2003	71,464	23,903	38,698	8,863	4.4
2004	71,355	23,373	39,129	8,853	4.4
2005	71,264	22,820	39,608	8,836	4.5
2006	71,188	22,249	40,124	8,815	4.6
2007	71,123	21,665	40,667	8,791	4.6
2008	71,071	21,069	41,235	8,767	4.7
2012	70,954	18,787	43,438	8,729	5.0
2022	72,541	17,170	45,616	9,755	4.7
2032	75,138	16,831	45,282	13,025	3.5
2042	76,233	14,883	44,860	16,490	2.7
2052	75,881	13,641	42,028	20,212	2.1
2062	73,993	13,224	37,889	22,880	1.7

3. Social security financial and demographic projections

This section presents and analyses projections of DSS 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 Social Security Fund may be assessed. Secondly, 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.

Consistent with the population and economic projections presented in the previous section, three sets of financial projections have been modelled. Also, 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 Section 2, several DSS-specific assumptions and the contribution and benefit provisions in place on 1 January 2003. 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 wage ceiling will increase annually by the increase in average wages beginning in 2005.
- Short-term benefits branch expenditure, including the Medical Expenses payable to the Government will increase from 2.4 per cent to 2.6 per cent of insurable wages between 2003 and 2062.
- Employment injury benefits branch expenditure, excluding Disablement & Death benefits, increases from 0.04 per cent to 0.1 per cent of insurable wages between 2002 and 2062.
- Finances of the Redundancy Benefits Fund have been excluded, thus the applicable contribution rate is 9.75 per cent.
- In 2003, Other Income will be $1 million due to late fees charged on outstanding government contributions. Assuming that these amounts are converted to debt in 2003, Other Income thereafter is assumed to be 1 per cent of contribution income.
- The proposed amendment to increase the number of contributions required to qualify for an old-age pension from 300 to 500 will be effective January 2004.

Other assumptions that vary for the three scenarios are shown in Table 3.1.

Table 3.1 Scenario assumptions

	Pessimistic	Intermediate	Optimistic
Annual pension increases	3.00	2.50	2.00
Long-term yield on reserves	5.00	6.00	7.00
Administrative expenses as a percentage of insurable wages	Decreasing linearly over 60 years from 1.70% to:		
	1.00	0.75%	0.50

3.1 Projection results

For accounting purposes, DSS finances are separated into the Short-term, employment injury and Long-term benefit branches, representing the three major benefit types that DSS offers. However, provisions exist for transferring reserves between branches and changing income allocations. Therefore, shortfalls in one branch may be met from another. For this report, the projections for the three benefit branches have been consolidated so that the complete financial picture may be seen in a single result.

Projected total DSS reserves under the three scenarios are illustrated in Figure 3.1 and Table 3.2 summarizes the years in which key financial events are expected to occur.

Figure 3.1 Projected reserves, 2003-2028 (millions of $'s)

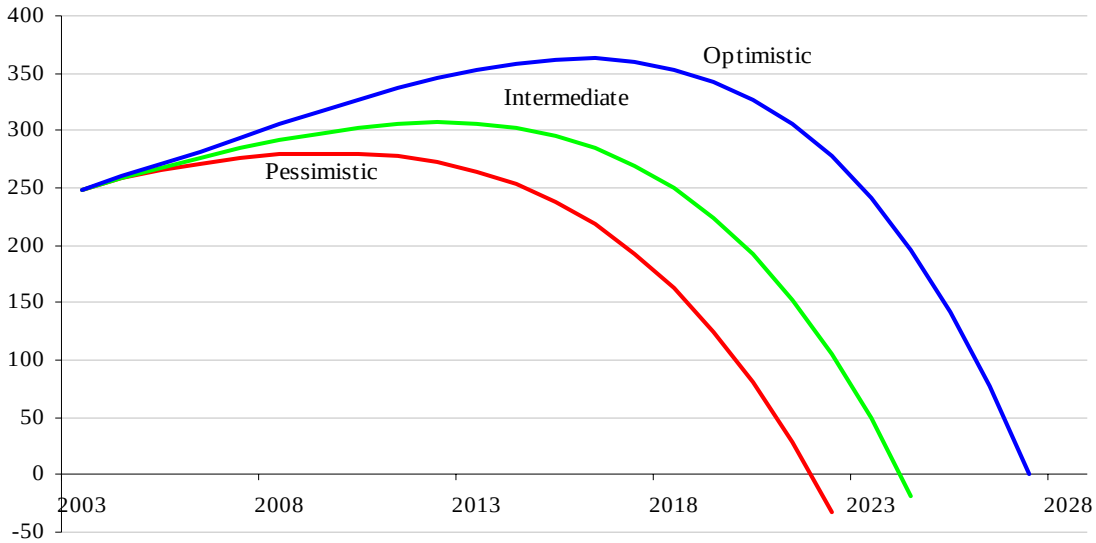


Table 3.2 Summary of key projection results

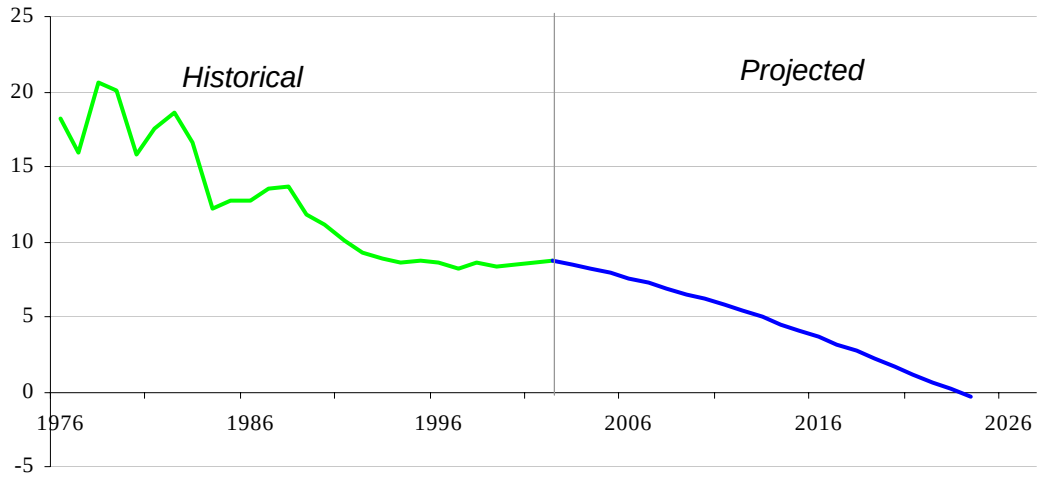
	Pessimistic	Intermediate	Optimistic
Year expenditure first exceeds total income	2010	2013	2017
Year reserves depleted	2022	2024	2027

Beginning in 2002, total DSS expenditure exceeded contribution income. This means that portions of investment income are now required to meet payments. As expenditure is increasing at a faster rate than contribution income, unless the contribution rate is increased soon, it is unlikely that contributions will ever again exceed expenditure. From a cash-flow perspective this contribution shortfall has occurred for several years, as part of the amounts reported as contributions has not been received in cash, but accounted for as a receivable.

When DSS 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, annual deficits will grow eventually leading to depletion of reserves. In partially funded defined benefit social security schemes the trend for reserves illustrated in Chart 7 is normal if the contribution rate remains below the true cost of benefits while the number of contributors per pensioner falls.

While total reserves are projected to continue increasing for several years, DSS relative level of funding will gradually deteriorate. As Figure 3.2 illustrates, the reserve-expenditure ratio has generally declined over the past 26 years but stabilised between 8 and 9 during the past ten years. As the scheme matures and expenditure growth outpaces the growth of reserves, DSS relative funding level will once again decline if the contribution rate is not increased or benefit reforms made.

Figure 3.2 Historical and projected reserve-expenditure ratios (*Intermediate* scenario)



Numerical details of the financial and demographic projections for the *Intermediate* scenario are provided in Tables 3.3, 3.4 and 3.5. Similar tables for the *Pessimistic* and *Optimistic* scenarios may be found in Appendix III. For selected years between 2002 and 2062 these tables show:

1. Projected income and expenditure, year-end reserves and the reserve-expenditure ratio;

2. Projected benefit expenditure by major benefit type in dollars and as a percentage of insurable wages and GDP;

3. Projected number of contributors and pensioners by major benefit type.

Table 3.3 Projected income, expenditure and reserves, *Intermediate* scenario, 2003-2062 (millions of $'s)

Year	Income				Expenditure				Reserves	
	Contribution income	Investment income	Other income	Total	Benefits	Admin. and other expenses	Total	Surplus/ (Deficit)	Year-end	# of times current year's expenditure
2002	27.3	13.9	1.2	**42.4**	22.4	5.4	27.6	**14.7**	**237.4**	8.5
2003	25.2	14.6	1.0	**40.8**	24.8	4.4	**29.2**	**11.6**	**249.0**	8.5
2004	26.1	14.8	0.3	**41.2**	27.0	4.5	**31.5**	**9.7**	**258.7**	8.2
2005	27.4	15.3	0.3	**43.0**	29.2	4.7	**33.9**	**9.1**	**267.8**	7.9
2006	28.9	15.9	0.3	**45.1**	31.6	4.9	**36.5**	**8.6**	**276.4**	7.6
2007	30.4	16.3	0.3	**47.0**	34.1	5.1	**39.2**	**7.8**	**284.2**	7.3
2008	32.0	16.8	0.3	**49.1**	36.7	5.3	**42.0**	**7.1**	**291.3**	6.9
2012	39.2	17.9	0.4	**57.5**	49.7	6.2	**55.9**	**1.6**	**307.2**	5.5
2022	60.2	7.6	0.6	**68.4**	107.2	8.6	**115.8**	**(47.4)**	**105.4**	0.9
2032	86.9	(56.5)	0.9	**31.3**	215.0	11.0	**226.0**	**(194.7)**	**(1,069.3)**	(4.7)
2042	120.0	(251.6)	1.2	**(130.4)**	371.9	13.2	**385.1**	**(515.5)**	**(4,578.5)**	(11.9)
2052	155.4	(717.6)	1.6	**(560.6)**	595.0	14.5	**609.5**	**(1,170.1)**	**(12,907.0)**	(21.2)
2062	203.1	(1,748.4)	2.0	**(1,543.3)**	930.6	15.6	**946.2**	**(2,489.5)**	**(31,263.3)**	(33.0)

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

Table 3.4 Projected benefit expenditure, Intermediate scenario, 2003-2062 (millions of $'s)

Year	Pensions & Benefits						Benefits as a % of:	
	Age	Invalidity	Survivors	Short-term	Emp. Injury	Grants	Insurable Wages	GDP
2002	13.3	1.6	1.2	5.4	0.5	0.3	8.0%	3.7%
2003	14.8	1.7	1.3	6.2	0.5	0.3	9.6%	3.9%
2004	16.3	1.9	1.4	6.4	0.6	0.5	10.1%	4.1%
2005	17.7	2.1	1.5	6.8	0.6	0.5	10.4%	4.2%
2006	19.3	2.3	1.7	7.1	0.7	0.5	10.7%	4.3%
2007	21.0	2.5	1.8	7.5	0.7	0.6	10.9%	4.5%
2008	22.8	2.7	1.9	7.9	0.8	0.6	11.2%	4.6%
2012	31.8	3.9	2.4	9.8	1.1	0.7	12.4%	5.1%
2022	75.2	8.4	4.6	15.2	2.3	1.4	17.4%	7.2%
2032	163.6	14.9	8.2	22.3	4.1	2.0	24.1%	9.9%
2042	295.8	22.7	13.7	31.2	6.4	2.2	30.2%	12.0%
2052	485.3	34.8	21.2	40.9	9.7	3.0	37.3%	13.9%
2062	779.7	48.3	30.6	54.2	13.7	4.1	44.7%	16.1%

Grants includes Funeral Grant

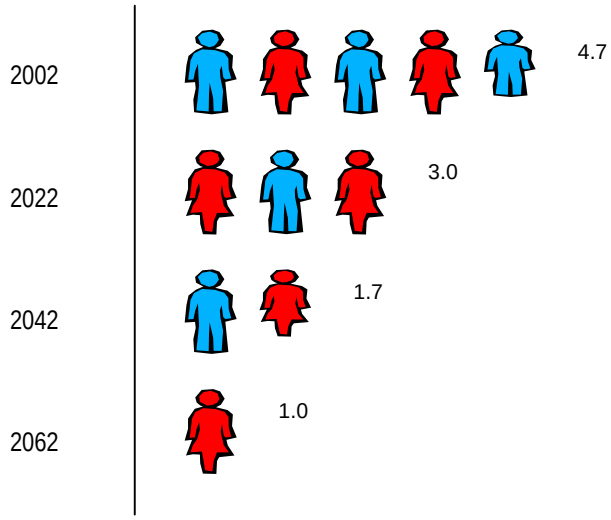
Table 3.5 Projected contributors and pensioners at year-end, Intermediate scenario, 2002-2062

Year	No. of contributors	No. of pensioners					Total no. of pensioners	Ratio of contributors to pensioners
		Age	Invalidity	Widow(er)s	Orphans	Death and disablement		
2002	16,506	2,653	322	303	208	55	**3,541**	**4.7**
2003	16,535	2,804	334	324	210	60	**3,732**	**4.4**
2004	16,686	2,926	346	339	229	62	**3,902**	**4.3**
2005	16,999	3,026	359	354	248	65	**4,052**	**4.2**
2006	17,395	3,131	373	369	263	68	**4,204**	**4.1**
2007	17,793	3,237	389	385	272	71	**4,354**	**4.1**
2008	18,189	3,345	405	401	276	74	**4,501**	**4.0**
2012	19,790	3,858	483	468	257	85	**5,151**	**3.8**
2022	22,527	5,802	739	648	239	120	**7,548**	**3.0**
2032	24,237	8,773	959	833	238	153	**10,956**	**2.2**
2042	24,339	11,615	1,063	1,005	253	173	**14,109**	**1.7**
2052	22,791	14,416	1,160	1,142	250	189	**17,157**	**1.3**
2062	20,849	17,247	1,164	1,215	229	192	**20,047**	**1.0**

The projected ageing of the general population is also noticeable in DSS demographic projections. As shown above, the number of contributors is only expected to increase from 16,500 to over 24,000 and then decrease, while the number of pensioners is projected to increase nearly six times, to 20,000. One of the reasons why there will be so many pensioners compared to contributors is that some pensioners will not be residing in Dominica, having migrated before pension age.

As DSS 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 (see Figure 3.3), 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.

Figure 3.3 Projected number of contributors per pensioner; 2002, 2022, 2042 and 2062

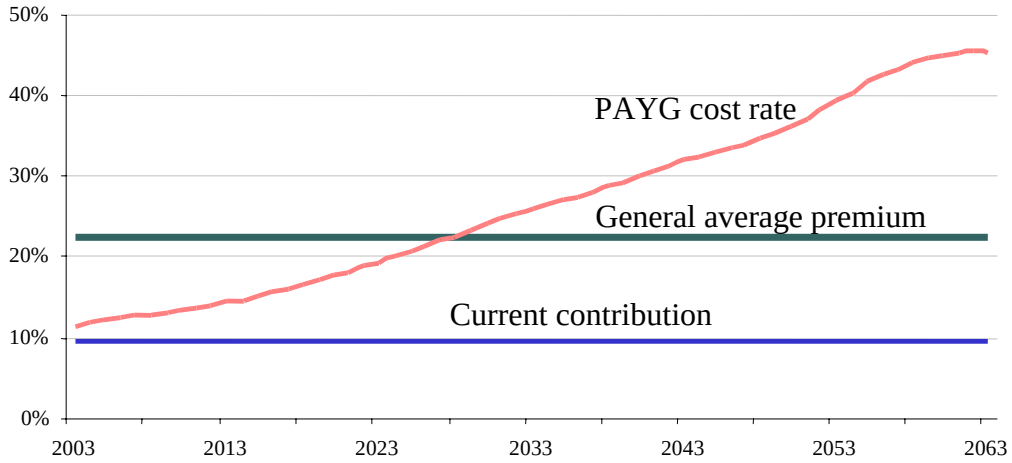


3.2 Projected benefit costs

The cost of DSS benefits and administrative expenditure may be viewed from several perspectives. Firstly, each year's total expenditure can be expressed as a percentage of that year's insurable wages. This is often referred to as the PAYG cost rate and is the answer to 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. This rate may be looked at as the long-term cost of the complete DSS benefits package. In Figure 3.4 the relationships between the PAYG cost rate and the general average premium for the *Intermediate* scenario, and the present contribution rate, can be readily noted.

Figure 3.4 Projected contribution rates, *Intermediate* scenario, 2003-2063



As shown in Figure 3.4, the current contribution rate of 9.75 per cent is 12.5 percentage points below the general average premium of 22.3 per cent. The increasing trend of the PAYG cost rate, which always remains above the level of the current contribution rate, indicates that 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 depleted, there would be no investment income, and thus contribution rates of 45 per cent in 2062 would be required to meet current expenditure.

The general average premium and PAYG cost rates for each scenario are shown in Table 3.6. As expected, the *Optimistic* scenario indicates the lowest contribution rates that would be required to meet expenditure while the *Pessimistic* scenario produces the highest rates.

Table 3.6 Projected financing requirements rates (% of insurable earnings)

	Legal contribution rate	GAP	PAYG cost rate when reserves depleted	PAYG cost rate in 2062
Pessimistic	9.75	26.0	20.4	55.9
Intermediate	9.75	22.3	20.0	45.4
Optimistic	9.75	19.4	19.4	35.3

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

- 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,

divided by the present value of future insurable earnings.

This formula produces a rate that indicates the adequacy or insufficiency of the present contribution rate for a given period. This deficiency can also be expressed in dollars as shown in Table 3.7 below for three separate periods.

Table 3.7 Actuarial balance, 2002-2022, 2003-2042 and 2003-2062 (millions of $'s)

		2003-2022	2003-2042	2003-2062
2002 year-end reserves		237.5	237.5	237.5
Plus	Present value of future contributions	441.2	749.7	923.6
Minus	Present value of future expenditure	651.0	1,439.8	2,117.0
Equals	Present value of surplus (shortfall)	27.7	(452.6)	(955.9)
Actuarial balance: (as % of insurable earnings)		0.6%	(5.9%)	(10.1%)
	(as % of GDP)	4%	72%	152%

Note: Totals may be off due to rounding.

A positive actuarial balance, as projected for the next 20 years, indicates that amounts available to meet expenditure (assets and contributions) will be sufficient for that period. This excess could be expressed either in dollars or in terms of a contribution rate, or percentage of insurable wages. The 0.6 per cent positive actuarial balance for this period indicates that up to 2022, the present contribution rate is 0.6 per cent higher than it needs to be if the funding objective were to ensure reserves last until 2022.

Conversely, a negative actuarial balance indicates that together with assets, the contribution rate is insufficient to meet future expenditure for that period. From the previous table, the negative 10.1 per cent actuarial balance for the 60-year period indicates that in order for reserves to last up to 2062, the contribution rate would have to be 10.1 per cent higher – 19.85 per cent up from 9.75 per cent. In terms of current dollars, that shortfall is close to $1.0 billion, or 1.5 times the GDP.

3.3 Sensitivity tests – *Intermediate* scenario

This section analyses several additional projections of DSS 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. Any change in the general average premium may be considered the change in the long-term cost of DSS benefits.

3.3.1 Smaller pension adjustments

One of the main assumptions of these projections is the frequency and amount of pension increases. While such adjustments are not legislated it is envisaged that from time to time pensions will be adjusted to offset reduced purchasing power. For the *Intermediate* scenario projections, annual pension increases have been assumed to be equal to inflation of 2.5 per cent. If instead, inflation is lower and/or pension increases average only 2 per cent per annum, long-term costs will be lower, with the general average premium being 21.6 per cent instead of 22.3 per cent.

3.3.2. Higher return on investments

Increasing investment earnings is one aspect over which government policy and management's initiatives could directly serve to extend the life of DSS reserves. Such higher returns may be achieved by introducing new types of investments to the

portfolio and adopting new approaches to investing. The *Intermediate* scenario long-term yield on reserves assumption is 6 per cent per annum, or 3.5 per cent above inflation. If a real rate of return of 4.5 per cent could be achieved, long-term DSS costs would be reduced by 1.3 per cent.

3.3.3. Doubling the minimum pension

It was noted in Section 2.3 that the current minimum pension applicable to old-age and invalidity pensions is $25 per week, or approximately 7 per cent of the average insurable wage. Compared to other social security schemes, this level is rather low. If instead of $25 per week the minimum were raised to $50 per week and all other pensions increased by 5 per cent[8] in 2004, the general average premium would increase by 0.3 per cent. Such a small increase is estimated as it is unlikely than many people will qualify for the minimum pension once the 500 weekly contributions minimum required to qualify for an old-age pension is introduced. In dollars, the immediate financial impact would be to increase expenditure by about $1.4 million.

The results of these three sensitivity tests show that, although each individual change would not have a major overall impact, small positive variances in areas over which management and policy-makers have control can result in meaningful reductions to long-term costs. While Table 3.8 summarizes the results of each sensitivity test described above, additional sensitivity test results are presented in Section 4.

Table 3.8 Sensitivity tests results

Variations from *Intermediate* scenario	General average premium
Intermediate scenario	22.3%
Annual pension increases of 2 per cent instead of 2.5 per cent	21.6%
7 per cent per annum return on reserves instead of 6 per cent per annum	21.0%
Double minimum pension	22.6%

3.4 Short-term cash flow projections

In the projections thus far discussed it has been assumed that all amounts are received and paid in cash and that where assets need to be sold, that they can be converted to cash at face or market value. In recent years, this has not been the case. In 2002, for example, DSS incurred a cash flow deficit as a large portion of income was not actually received in cash. Given the current financial position of the Government and its recent history of not paying contributions and all interest on debt securities, cash-flow projections of DSS finances for the next 11 years have been performed. These projections account for the possibility of the Government not being able to meet all or part of its commitments. In addition to the projections presented earlier, three other scenarios have been modelled and the assumptions and results are shown in Table 3.9 below.

[8] Pensions have not been increased since 1999 so the increase for other than minimum pensions is to make up for cumulative inflation between 1999 and 2003.

Table 3.9 DSS cash-flow projections, 2003-2013

Year	Annual balance, surplus/(deficit) if:			
	Government pays all amounts due	Government pays all contributions and 40% of interest	Government pays all contributions but no interest	Goverment pays no contributions and 40% of interest
2003	11,591	6,593	3,262	(3,728)
2004	9,673	4,612	1,239	(5,324)
2005	9,125	3,878	379	(6,548)
2006	8,563	3,139	(477)	(7,845)
2007	7,897	2,309	(1,416)	(9,259)
2008	7,099	1,361	(2,464)	(10,814)
2009	6,106	236	(3,677)	(12,570)
2010	4,868	(1,111)	(5,097)	(14,577)
2011	3,340	(2,722)	(6,763)	(16,880)
2012	1,480	(4,630)	(8,703)	(19,515)
2013	(862)	(6,979)	(11,056)	(22,560)

As indicated in Table 3.9, if the Government does not meet a large portion of its obligations, DSS could incur cash flow deficits again this year, indicating the need to call or sell some investments. However, if all amounts due, both current and outstanding debts from previous years, are paid, cash flow surpluses will be realised until 2012.

3.5 Preserving social security for future generations

The projection results thus far discussed suggest that, unless the contribution rate is increased or benefit reforms made, DSS will not be able to meet its obligations beyond 2023 (*Intermediate* scenario). The main reasons why Dominica's 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 present contribution rate is below the average cost of the DSS benefits package.
- The number of persons contributing per DSS pensioner will continue to decrease.

Strengthening DSS financially will require the adoption of measures that increase income or decrease expenditure. The following lists summarise the means by which each can be achieved.

Increasing income	Containing expenditure
Contributions:	**Benefits:**
1. Increase the contribution rate	1. Stricter eligibility conditions • Contribution requirements
2. Increase the earnings base • Increase compliance • Increase the ceiling on wages	2. Change pension formula • Reduce accrual rates • Re-define reference earnings • Career-average formula
	3. Increase retirement age
Investment earnings:	**Administrative expenses:**
1. Enforce payment of interest	1. Reducing administrative costs • Staff levels • Other operating costs
2. Reduce management costs	
3. Review investment policy • Longer duration • Investments in equity • Overseas investments	

For contributions, there is much room to increase compliance, especially among the self-employed. However, there will be little impact on increasing the ceiling as very few insured persons now have earnings at or above the current $5,000 per month ceiling. It should be noted too that if more people contribute and the ceiling is raised, additional benefits will be payable in the future, and thus the net financial effect may be neutral. A rate increase, therefore, is the only meaningful way of increasing income through contributions. By broadening the scope of investment opportunities, including investing more outside Dominica, DSS should be able to realise higher rates of return over the long run.

On the expenditure side, recent reductions in administrative costs were achieved mainly from reductions in staff strength. The Board is to be complimented for taking this difficult step. While additional savings may be realised from further reductions to operating costs, changing the manner in which pension amounts are calculated will be the most effective way of containing long-term costs. Such changes should target the accrual rates that are heavily skewed to short service and the number of years over which wages are averaged. It is recommended that these changes be given priority over all others so that the general average premium of 22.3 per cent may be reduced to a more affordable rate. Once pensions are made equitable, reasonable and affordable, DSS should then consider raising the contribution rate so that future generations will not be forced to pay much more than the current generation of contributors for the same or smaller pension promise.

As indicated in Section 3.2, if the Fund is allowed to deplete, the scheme will enter what is called a “PAYG” financing state where expenditure will have to be met by current income. This would call for rates of 20 per cent in 2024. Instead of having the rate increase significantly at that time and then gradually each year as current expenditure increases, a schedule of contribution rate increases that begins within the next five years should be enacted. This will ensure that an appropriate level of reserves always exists and that drastic measures aimed at preserving the Fund can be avoided in the future.

If no deliberate changes are made to reduce expenditure, one way of securing the Fund for the next 60 years would be to increase the contribution rate immediately to 22.3 per cent so that the present funding level may be preserved. A more prudent approach, however, would be gradual, step-like increases, bringing the contribution rate to a level slightly higher than 22.3 per cent. The ultimate rate would be established based on a desired long-term funding objective. If, for example, the funding objective was a reserve of at least 5 times annual expenditure in 2036 when DSS reaches 60 years old, and then 2 times expenditure 60 years from now, two possible schedules of rate increases that could achieve this are:

- One per cent increases in the contribution rate each year from 2005 to 2018, reaching a high of 23 per cent, or
- Three per cent increases every 5 years, beginning 2005 and ending with a 1 per cent increase in 2025, leaving a contribution rate of 24.5 per cent.

These extremely high contribution rates are a result of a combination of factors – DSS defined benefit structure, the manner in which pensions are financed, the relatively generous pension promise and an ageing population. Therefore, while DSS reforms may help reduce costs, solid and sustained economic growth that drives population growth could make DSS much more affordable in the long run, as indicated in the *Optimistic* Scenario projections.

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 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. A few others 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.

While there is no need for Dominica to change DSS defined benefit structure at this time, no option for reform should be excluded without appropriate research and extensive consultation. Given that the Fund may be exhausted within the next 20 years, immediate discussions leading to specific reforms should begin. Thoughtful consideration, discussions with Dominicans and learning from the experiences of other countries should precede fundamental changes.

4. Policy and administrative issues

4.1 Old-age and invalidity benefit accrual rates

For someone who works and contributes to DSS for 44 years, the old-age pension could be as high as 70 per cent of average wages in the three years with highest insurable wages. For another who works only ten years, their pension would be 30 per cent of best three years' average wages. This indicates that pension replacement rates are highly skewed to those with shorter service – 3 per cent per year for the first ten years, and only slightly more than 1 per cent per year thereafter. This approach may have been appropriate when the scheme was first established to ensure early retirees received adequate pensions. However, after 27 years, a more gradual accrual of benefits should be considered as a way of decreasing long-term costs, as well as providing pensions that are more closely related to contributions.

Compared with other regional schemes, benefit accrual rates are similar to those of other regional schemes but the maximum rate of 70 per cent [9] is higher than all others. In fact, with the exception of Antigua whose maximum rate is 50 per cent, all other Caribbean schemes have a maximum of 60 per cent. The following table provides a summary of the common patterns of accrual rates in the Caribbean.

Table 15. Pension accrual rates in Caribbean social security schemes

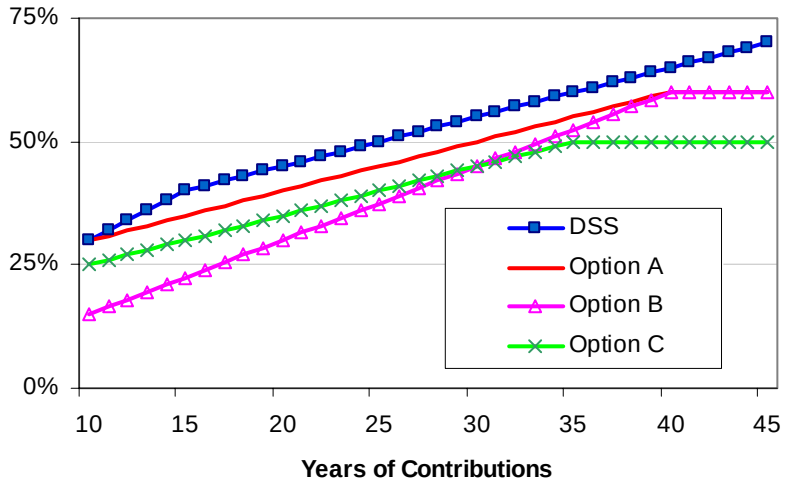
Country	After 10 years service	After 20 years service	After 30 years service	Maximum percentage earned after
Antigua	25%	35%	45%	50% - 35 yrs
Anguilla, BVI, Grenada, St. Vincent	30%	40%	50%	60% - 40 yrs
Bahamas, Belize, St. Kitts-Nevis	30%	45%	55%	60% - 35 yrs
Dominica	30%	45%	55%	70% - 44 yrs

While very few people may ever contribute for 44 years given the current retirement age of 60, it is quite possible that the retirement age will be increased in the future, thus making 44 years of contributions more likely.

As highlighted in Section 3, DSS in its present form is financially unsustainable for the long-term and so some reforms are necessary. Given that the most costly benefit is the old-age pension, changes to how pension amounts are determined will be the most effective way of reducing long-term costs. Therefore, both the rate at which benefits increase for each additional year of contributions, as well as the maximum benefit rate should be reviewed. Such changes were recently made in Barbados where the current benefit rate of 40 per cent after ten years plus 1 per cent thereafter will be changed over the next 20 years to 20 per cent after ten years plus 1.25 per cent per year thereafter. Figure 4.1 illustrates the current DSS schedule of accrual rates along with three other schedules that may be considered as replacements.

[9] Prior to 1995 the maximum rate was 60 per cent.

Figure 4.1 Current DSS and sample pension accrual rates



Option A represents the rates of accrual that exist in many CARICOM countries while Option C is found only in Antigua, which has the least generous pension of all the schemes in the region. Option B, meantime, provides the same 1.5 per cent rate of benefit for each year of contributions. Table 4.1 below shows the general average premiums or average long-term costs for the current DSS rate structure and each of the three accrual sets had they been in effect in Dominica. Since each of the options produces pensions that are reasonable and adequate but at a lower cost, DSS could reduce long-term costs by reducing its pension promise while maintaining adequate pensions for the elderly. If such a change is made, an appropriate transition from the old to new formulae would be required so that persons retiring shortly after the change are not disenfranchised.

Table 4.1 Average long-term costs under various pension accrual rates

	Description	Maximum benefit	General average premium
Current	3% per year for 1st 10 years, 2% for each of next 5 years and 1% for each year above 15	70%	22.3%
Option A	3% per year for 1st 10 years, 1% for each year above 10	60%	21.0%
Option B	1.5% for each year of contributions	60%	19.1%
Option C	2.5% for each of the first 10 years, plus 1% per year thereafter	50%	19.5%

Although the cost savings would not be significant if the retirement age of 60 is maintained, it is recommended that the maximum pension rate be reduced to no higher than its original level of 60 per cent. Also, if average long-term costs of 22.3 per cent are considered too high, then consideration should also be given to having benefits accrue more slowly over one's career.

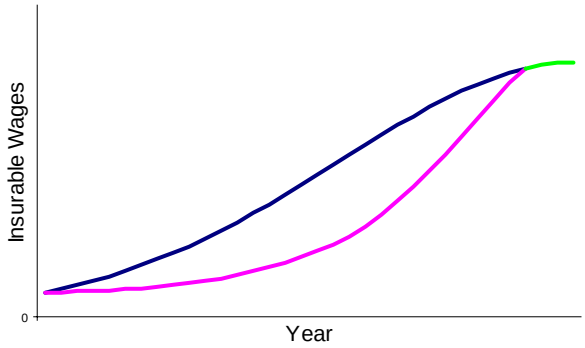
In the next section a career average earnings formula is recommended over the current approach of just using the best three years of earnings. If this approach is adopted, benefit accrual rates as they are defined today and discussed above will no longer be relevant.

4.2 Wages used for calculating pensions

Although contributions are based on earnings over one's career, only wages in the best three years in the last ten years are used to calculate old-age pensions. Therefore, two persons with different career earnings who happen to have three years of similar high earnings, and the same number of contributions, will receive the same pension. However, they would have received different short-term benefits during their working years.

Figure 4.2 shows the career earnings pattern of two workers. For all but the last three years their insurable wages were different. However, under present rules, they will both receive the same pension amount.

Figure 4.2 Earning patterns of two insured persons with the same pension



As only three years of wages are used, the amount of the pension often bears little relationship to actual contributions. Also, since the highest wages are used, the pension could be significantly higher than an amount that actual contributions accumulated with interest could purchase from a private insurance company. Therefore, using only the three highest years' wages produces inequities among generations (different contribution history but same pension) and between generations (passing on part of the cost of one's pension to future contributors). Reference to only three years wages also produces inflated benefits for those retiring shortly after a step-like ceiling increase.

The method of calculating social security pensions in almost all OECD countries uses indexed career earnings. In some cases, there are provisions to drop a certain number of years of no earnings or ignore years in which earnings were low – for example when a parent stayed home with young children.

For Dominica, a best 25-year indexed earnings formula is now being recommended. Indexing older wages to their current value will ensure that these wages are appropriately weighted. Also, a 25-year period is long enough to ensure that the pension is closely related to actual contributions but short enough to have years of low earnings dropped from those with long careers. For people who do not have at least 25 years of contributions, years of no earnings would be included but the presence of the minimum pension would ensure that their benefit does not fall below a certain amount. To determine the weekly pension, a fixed rate, for example 60 per cent, would be applied to the career average weekly earnings. Alternatively, the DSS pension could be made explicitly progressive, by applying a higher percentage to lower levels of income and a lower rate to higher levels of income. An example

of such a formula is: 75 per cent of average career wage up to $500 per week plus 50 per cent of insurable wages above $500 per week.

Applying the career average approach with a replacement rate of 60 per cent to a random sample of recently awarded old-age pensioners indicates that the current formula produces:

- excessive pensions to higher paid insured persons who, for all or part of their career, had earnings at the ceiling and/or had larger than average salary increases;
- lower pensions to persons who stopped working several years before retiring or who had only small wage increases during their career;
- reasonable pensions to those with long careers but only moderate annual wage increases.

Therefore, the current pension formula appears to provide regressive benefits when pension amounts for high- and low-paid insured persons are compared with lifetime earnings and contributions. In terms of its effect on DSS long-term costs, if a new indexed career average pension formula produces overall average pensions that are 15 per cent below what the current formula produces, the general average premium would fall from 22.3 per cent to 20.2 per cent.

4.3 Ceiling increases

Since 1995, the ceiling on insurable earnings has been fixed at $5,000. This is approximately three times the average insurable earnings of DSS contributors. To the few who earn more than $5,000 per month, DSS insurance coverage has become less relevant as their earnings have increased over the past eight years. While no major increase in the ceiling is being recommended, a new approach to adjusting the ceiling is. The suggested approach calls for annual adjustments (as practiced in most industrialised countries) based on the increase in average wages in Dominica, with both the timing and method of determining the adjustment placed in Social Security Regulations. Since there is presently no official Dominican wage index, changes in the Consumer Price Index or a DSS wage index (that measures changes in average insurable earnings) may be used. However, the creation of a national wage index is encouraged.

Frequent ceiling increases will ensure that Dominica's social security programme remains relevant to higher paid contributors. Also, by placing the timing and method of determining ceiling increases in DSS regulations, future adjustments will be predictable, appropriate and free of political pressures.

4.4 Pension increases

Along with frequent and legislated ceiling increases, there should also be automatic increases to pensions in payment. Such adjustments will ensure that pensioners will be able to enjoy the same standard of living that they did when the pension was first awarded.

During the last 15 years, DSS pensions have been increased five times – 3 per cent in 1989, 12 per cent in 1990, 10 per cent in 1992, 5 per cent in 1995 and 8 per cent in 1999. For someone awarded a $100 pension in 1986, these five adjustments have resulted in a pension that is slightly less than what annual inflation adjustments would have provided – $144 versus $149. While the smaller pension means lower

costs to DSS, it also means a decrease in the relative value of the pension if the price inflation index is an appropriate measure for cost increases borne by seniors.

The system of ad hoc pension incomes that DSS has used since inception appears to have worked well. However, with the need for the government of the day to agree on when to adjust pensions and decide by how much they should be adjusted, the current method is open to political manipulation. It also is not predictable and thus reduces the level of assurance that pensioners have of their pension keeping pace with cost of living increases. Therefore, it is recommended that annual adjustments take place. The amount of each increase could be the inflation rate over a recent 12-month period or the average inflation rate over the most recent 3 years. This latter approach will result in less volatile increases. To avoid large increases in pensions that may negatively impact DSS future finances, a maximum such as 5 per cent may be placed on any single adjustment. The Government can then decide whether or not to grant a larger increase based on actuarial advice. Such provisions for annual increases to pensions and grants were recently enacted in Barbados.

4.5 Payment of both old-age and survivors' pensions

When DSS was first established, the concept of survivors' benefit was predominantly geared towards the non-working widow of a contributor. Today, women make up a significant part of the workforce and thus are often entitled to their own old-age pension. Should her husband die and the widow be in receipt of, or later qualify for, an old-age pension, she will only receive the larger of her old-age pension and the survivors' pension.

As a consequence of present rules, it is possible for household income to fall by more than 50 per cent should one pensioner die. For example, if the husband's weekly pension is $400 and the wife's $250, total household income would fall from $650 to $250 after the husband's death. ($250 is the greater of 50 per cent of $400 and $250) Therefore, there would be a strong argument that in such a case more than just the greater benefit be paid as household income does not fall by as much 50 per cent following the death of one person.[10]

Also, if both spouses are receiving old-age pensions, the pension to the surviving spouse upon death of one party may be different depending on who dies first. Using the above example, if the wife dies first, the husband's pension would have been $400. ($400 is the larger of $400 and 50 per cent of $250) Therefore, if both spouses are considered to equally share household income, regardless of whose pension is bigger, the current survivors' pension discriminates against the spouse with a lower pension.

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

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

To eliminate such anomalies and possible financial hardship that present survivors' pension provisions may create, it is recommended that one of the following options for paying survivors' pensions be adopted:

- payment of both old-age and survivors' up to a maximum combined weekly pension, or
- payment of full age pension plus a portion (say half) of the survivors' pension, or
- payment of the higher of the two age pensions.[11]

If any of the above options are adopted, persons who have already claimed survivors' pensions and who are now receiving only the greater of two benefits would have their pensions reworked under the new laws. It is not possible to determine how many persons fall into this category or how many additional pensions will be paid. Therefore, an estimate of the financial impact of these changes has been made assuming that there are 50 per cent more survivor pension awards each year and that 50 per cent of the current survivor pensioners will have their pensions revised. Under these assumptions, the increase in general average premium is 0.4 per cent. Prior to selecting one of the above or any other options, internal calculations could be made to see how current pensioners will be affected and thus the impact on long-term costs.

While reviewing survivor pension provisions, a change in the way the minimum pension is defined should be considered. Presently, the minimum pension to a widow(er) is 50 per cent of the minimum pension to an old-age pensioner – $12.50 per week. This rate is rather low. Also, if the minimum pension for old age is designed to provide income to support a basic standard of living, then a similar objective should exist for survivors, especially where the pension is the only reliable source of income for an elderly person.

4.6 Increasing the pension age

When DSS was established in 1976, age 60 was considered an appropriate age at which national pensions should be first payable. Today, Dominicans are living longer, they are entering the workforce later and are generally in good health at age 60. Therefore, consideration should be given to gradually increasing the pension age to 65. If this change is made, age 60 could remain the age at which pensions are first payable, but at a reduced rate. Changes to the normal pension age are presently occurring in Barbados – increasing from 65 to 67, and in St. Lucia where it is moving from 60 to 65 over 15 years. In the region, normal pension ages above 60 already exist in Anguilla, the Bahamas, Belize, the British Virgin Islands, Jamaica and St. Kitts-Nevis.

Increasing the DSS pension age should not be done in isolation. Presently, government employees retire at 55 and practice varies in the private sector, where in many cases there is no mandatory retirement age. For DSS, increasing the age at which full pensions are payable would result in a significant reduction in long-term costs as people will contribute for a few additional years and possibly receive a slightly bigger benefit but for a shorter period. Projections of the financial effect of increasing the pension age from 60 to 65 over a 15-year period indicate that the

[11] Payment of two pensions should also be allowed for invalidity and survivors pensions.

long-term savings would be 3.9 per cent of insurable wages. That is, the general average premium would fall from 22.3 per cent to 18.4 per cent. Also, if all else remained the same, depletion of reserves would take place in 2030, instead of 2024, and the PAYG cost rate in 2062 will be 37 per cent instead of 45 per cent.

4.7 Self-employed coverage

The 1999 Labour Force Survey conducted by the Central Statistics Office classified 9,768 as "Own Account Worker" or self-employed. This group represented 35 per cent of the total employed persons, a very high percentage. In that year, only 471 self-employed persons made DSS contributions and since then, the number of contributing self-employed persons has decreased to only 373 in 2002.

In Dominica, social security coverage for the self-employed is mandatory. However, like most countries in the region, and indeed the world, the compliance rate among this group is very low – currently less than 5 per cent. While the attitudes of self-employed persons vary and the reasons for not contributing many, the consequence of not securing higher participation by the self-employed will manifest itself in the future when a large percentage of the elderly population is left without a reliable source of income in old age. Therefore, to avoid high levels of poverty among the elderly and/or expensive government assistance programmes in the future, special initiatives are required to raise the level of coverage among both high and low-income self-employed persons.

For the self-employed category, DSS should not only view compliance simply from the perspective of collecting contributions but instead from that of people and pensions. This implies that the focus of inspectors and public relations campaigns should be on the benefits that being covered will bring and the long-term consequences of not providing for old age in a changing society where there will be fewer children to personally support their parents. Additionally, a review of the contribution and benefit structure that presently exists for all workers – employed and self-employed – should be made. The income patterns of self-employment are different from those of regular employment. Also, the record keeping and support that an employer provides is non-existent for many self-employed. Therefore, a structure that is more attractive and consistent with their types of employment is required.

In the 7th Actuarial Review several recommendations pertaining to self-employed persons were made and support is given to them in this Review. Some of these issues also relate to other insured persons and are mentioned in earlier sections but are repeated here for emphasis:

- Increase from 300 to 500 the number of weekly contributions required to qualify for an old-age pension.
- Increase the number of years used to compute average earnings for the calculation of the old-age pension from "best-3" to "best-10" or even indexed earnings over 25 years.
- Restrict self-employed persons from increasing their declared earnings just prior to retirement.
- Increase the minimum amount of earnings subject to contributions from $600 per annum to a level that reflects the minimum wage. (With a minimum pension of $1,300 per annum, payment of contributions for six years at $600 per annum, or $252 in total, barely covers pension costs for ten weeks.)

- Exchange information between DSS and Inland Revenue so as to ensure that more self-employed persons contribute and that the earnings declared to both institutions is consistent.

4.8 Redundancy Benefits Fund

The Protection of Employment Act provides for the payment of redundancy benefits to employees who have worked for the employer for at least 3 years and whose employment is terminated on account of redundancy. The Act also provides for a Redundancy Benefits Fund into which contributions of 0.25 per cent of insurable wages goes and from which redundancy benefits are paid. This Fund is managed by Social Security who also administers the collections of contributions and payment of benefits.

Payments out of the Redundancy Benefits Fund are made as follows:

- ten per cent of the amount that a liable employer has paid in redundancy benefits in accordance with the Protection of Employment Act, and
- where an employer who is liable to pay fails to do so, the entire amount is paid by the Fund, with the Fund being entitled thereafter to recover the full amount of that payment from the employer concerned.

Finances of the Redundancy Benefits Fund for the last five years are shown in Table 4.2. As noted, benefit expenditure has been extremely low, averaging 0.03 per cent of insurable wages per annum compared with collections at a rate of 0.25 per cent. As a result, the Fund has grown to almost $5 million at the end of 2002.[12]

Table 4.2 Summary of Redundancy Benefits Fund, 2000-2002 (thousands of $'s)

	1998	1999	2000	2001	2002
Income					
Contributions	375.6	404.7	421.3	411.9	438.6
Investment	20.7	22.3	23.2	22.7	24.1
Total	396.3	427.0	444.5	434.6	462.7
Expenditure					
Benefits	84.5	42.5	12.5	38.8	9.0
Administrative	9.4	10.1	10.5	10.3	11.0
Other	-	-	-	-	11.0
Total	93.9	52.6	23.0	49.1	31.0
Excess of income over expenditure	302.4	374.4	421.5	385.5	431.7
End of year reserves	3,331.5	3,705.9	4,127.4	4,512.9	4,944.6

Note: Of the $4.9 million reserve at the end of 2002, $0.9 million is due from employers who failed to make the required payments to redundant employees. The recoverability of most of this amount is uncertain.

[12] Included in DSS Accounts Receivables is $908,869 representing redundancy benefit amounts paid in full because the employer failed to pay but for which recovery is anticipated. This amount has been excluded in the amounts shown as benefits paid.

Without a change in the definition of what benefits are paid, the Fund will continue to grow. Since this money is not available to meet Social Security Benefit expenditure, the Government should examine suitable ways of using these funds in a manner consistent with their initial purpose. Given the recent downturn in the economy that led to layoffs and job redundancies, as well as a likely shift in employment into new productive areas, part of the Fund may be used for formal training and retraining programs aimed at equipping Dominicans with the skills necessary to return the economy to a path of sustainable growth. Other options include:

- Initial financing for a newly established Unemployment Benefits Fund from which future involuntarily unemployed workers may receive a weekly benefit for a limited period once unemployment continues. (If such a benefit is introduced, an additional contribution would be required from both the employer and employee.)
- Increase the percentage rebate from 10 per cent to possibly 50 per cent, thus reducing the burden on the employer to meet redundancy benefits at the time when the business may be in financial trouble.

4.9 Outstanding amounts owed DSS by the Government

Between April 1999 and December 2002, the Dominica Government did not pay contributions to DSS. At the end of 2002, total amounts due in unpaid contributions and late fees totalled $41.4 million. Also, outstanding from the Government at the end of 2002 was $11.6 million in unpaid interest on its debentures. These amounts are in addition to the $78.2 million in government securities that DSS holds.

In a Memorandum of Understanding between the Government of Dominica and Dominica Social Security executed in September 2002, it was agreed that several measures would be taken to eliminate the Government's indebtedness to DSS. These steps included rolling over past due debentures, the issuance to DSS of zero-coupon bonds, transfer of government lands to DSS and the transfer of shares in a local bank. The Government also agreed to begin making current contribution payments beginning January 2003. At the time of writing this report the Government was current with 2003 contributions, debentures were rolled over, zero-coupon bonds issued and lands transferred, but the sale of shares was not yet complete.

As was presented earlier, although DSS has sufficient assets to support expenditure for many more years, its cash-flow position is quite weak. This is due to the uncertainty of being able to receive cash from the Government if it became necessary to call some of its government securities.

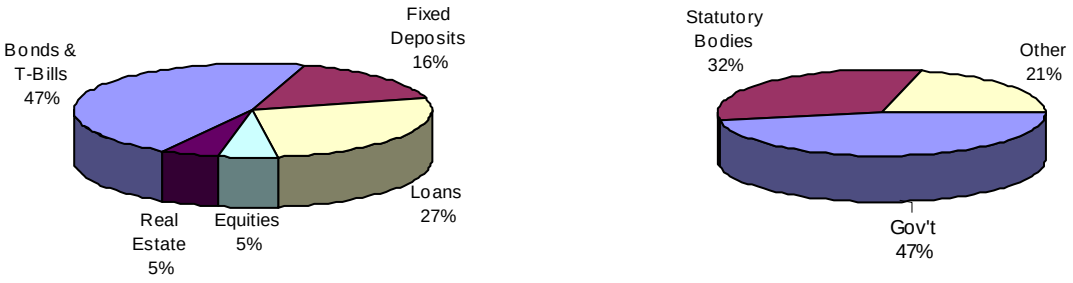
While the non-payment of contributions and interest has current cash-flow consequences and if not regularised will impact the future solvency of DSS, it also makes collecting arrears difficult as Dominica's largest employer is failing to remain current with its contributions. Therefore, the Government is encouraged to quickly eliminate its total indebtedness to DSS. For the DSS part, it should ensure that all transfers of land and shares occur at market prices so that DSS receives appropriate compensation for the amounts owed.

5. Investments

5.1 Asset mix

At the end of 2002, DSS invested assets stood at $166 million. The following figures highlight portfolio diversification by asset type and by who issued the securities that DSS holds. As seen, fixed income securities – bonds, loans, cash and fixed deposits – make up almost 90 per cent of the portfolio. Most of these investments represent some form of lending to the Dominica Government or Statutory Bodies. Another measure of diversification not shown in the figures is that indicated by location. For DSS, 99.7 per cent of the portfolio is domiciled in Dominica.

Figure 5.1 Distribution of DSS investments, December 2002



On the surface, a portfolio of majority fixed-income government securities and other assets backed by government guarantees may suggest a relatively low risk profile for the DSS portfolio. Given the Government's recent inability to meet its interest and contribution obligations, its present poor fiscal position and the current state of the overall economy, however, such a high concentration in government debt raises concerns for the future ability of DSS to meet its commitments.

Another concern that the large portion of DSS investments in government debt poses to the economy of Dominica is that when DSS reaches the point where it has to call some of its government securities, the Government will have to raise the funds necessary to repay DSS. To a large extent, the group of taxpayers is almost the same as the group that makes Social Security contributions. Therefore, there will be little economic difference as to whether DSS raises its rate or the Government raises taxes to meet its commitments. For the long-term though, unless government finances improve and it is able to repay its borrowings, the transfer of both social security and tax liabilities to future generations will be perpetuated. Therefore, it is strongly recommended that the majority of future DSS investments be made outside of the public sector. A portion of the Fund should also be designated for regional and international holdings.

5.2 Guidelines for investing Social Security Funds

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 schemes, employers and workers. During the meeting, participants were placed in groups and asked to discuss several topics from which ideas and recommendations were presented. One such topic related to the investment of social security funds. The recommendations emerging from these working groups have been summarized and reviewed by the ILO and formed the basis for a paper entitled "ILO Guidelines for the Investment of Social Security Funds in the Caribbean." Following is a summary of these guidelines.

5.2.1 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 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 determination of 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.

5.2.2 Guidelines concerning specific types of investments

Government or government-backed securities should not exceed 50 per cent 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 facilities, 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.

5.3 Investment policy statement

One of the guidelines mentioned above that will help ensure that DSS assets are prudently and efficiently invested is the adoption of an Investment Policy Statement (IPS). An IPS sets out policies, guidelines and a general framework within which assets may be invested. In both the U.S. and Canada IPS's are required of all pension plans and investment funds.

A well-designed IPS communicates the investment philosophy of the Fund, describes its objectives and investment strategy, and identifies the roles of those involved in the investment process, and what is expected of them. If followed, it also will 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.

DSS presently has an Investment Management and Administration Policy that includes most of the items listed above. However, the current asset mix is not consistent with the policy as stated in this document; the portion of equities is below the 10 per cent minimum prescribed and the proportion of fixed income securities is well above the 50 per cent maximum. Therefore, the Board is encouraged to gradually shift its investments so that the overall mix is consistent with the prescribed ranges found in the Investment Policy.

Appendix I. Summary of contribution and benefit provisions

I.1 Benefits, insured persons and contribution rates

The Dominica Social Security Scheme began operations in February 1976 and as of December 2002, provided for the following benefits:

- Short-term benefits:
  Sickness and maternity benefits.
- Long-term benefits:
  Retirement, invalidity and survivors' benefits and funeral grants.
- Employment injury benefits:
  Injury benefits, disablement benefits, medical expenses, death benefits and funeral grants.

I.1.1 Insured persons

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

- Employed persons in the private and public sectors are covered for all contingencies;
- Self-employed persons, if their annual earnings exceed $600, and voluntary insured persons are covered for long-term benefits and Medicare only.

I.1.2 Insurable earnings and contributions

In addition to salary, insurable earnings include overtime pay, cost of living allowance, commissions and service charge payments. Earnings that are covered for the purpose of determining contributions and benefits are limited to $1,155 per week or $5,000 per month. The ceiling on insurable earnings has increased as follows:

1976-1983	$1,000.00
1983-1989	2,000.00
1989-1991	2,500.00
1991-1994	3,500.00
1994-1995	4,000.00
1995-present	5,000.00

Contributions are computed as a percentage of insurable earnings. The contribution rate is 9.75 per cent, 3 per cent paid by the employee and 6.75 per cent by the employer. Self-employed persons contribute at 7 per cent and voluntary insured at 6.81 per cent. In addition, employers other than the Government and self-employed persons, pay 0.25 per cent of insurable earnings that is explicitly earmarked for redundancy benefits.

I.2 Qualifying conditions and benefit rates

I.2.1. Long-term benefits

Old-age pension

Contribution requirement:
Minimum of 500 paid or credited weekly contributions of which at least 150 must be paid.

Age requirement:
60. The pension is not dependent on retirement from the workforce.

Amount of benefit:
30 per cent of average insurable earnings over the best three years out of the last ten years, plus 2 per cent for every 50 weeks credited between 500 and 750, and 1 per cent for every 50 weeks credited over 750.

If between 300 and 500 credits have been credited, the insured can opt for a grant or pension. The amount is the proportionate part of the pension that the actual contributions paid and credited, bear to the required 500 contributions.

If retirement occurs after age 60, the benefit is increased by 6 per cent for each full year that the age at start of benefit exceeds 60.

- Maximum pension: 70 per cent of average insurable earnings. (60 per cent before 1991)
- Minimum pension: $25.00 per week. The minimum pension also applies to invalidity and disability benefits.

Old-age grant

Contribution requirement:
50 weekly contributions, paid or credited, but less than 300.

Eligibility:
The person must be ineligible for old-age benefit.

Age requirement:
60.

Amount of benefit:
Three times average weekly insurable earnings for each 50 weekly contributions paid or credited. This amount is paid as a lump sum.

Invalidity pension

Contribution requirement:
150 weekly contributions paid or credited.

Eligibility:
The insured is:

- less than 60,
- invalid, other than as a result of an employment injury, and
- not in receipt of sickness benefit.

Amount of benefit:
Calculated in same manner as for old-age benefit.

Duration of pension:
Payable for life or until invalidity ceases.

Invalidity grant

Contribution requirement:
50 contribution weeks.

Eligibility:
The person must be ineligible for invalidity benefit.

Amount of benefit:
Calculated in same manner as for old-age grant.

Survivors' benefits

Contribution requirement:
The deceased, at time of death, was receiving or satisfied the requirements to receive an invalidity or old-age pension, or grant had he or she been deemed an invalid.

Eligibility:
Spouse must be married to the deceased for at least three years, be 50 years or over, and not gainfully employed; or, an invalid spouse who was wholly maintained by the deceased and has no income from any source; or a spouse under 50, married for at least three years, and caring for young children.

Common law unions, where both parties lived together for at least three years and at the time of death, are recognised.

Amount of benefit:
The proportion of retirement pension shown below:

- Widow or widower: 50 per cent;
- Orphan: 25 per cent
- Full orphan or invalid orphan: 33 1/3 per cent;
- Parents/grandparents: 25 per cent
- Minimum widow/widower/orphan benefit: $50 per month, per person
- Maximum family benefit: None

Duration of benefit:
Widow(er)s' pension:

- For life, if at the date of death the widow(er) was 50 or older, married for at least 3 years and not earning more than EC$2,000 per month
- For as long as invalidity continues if at the date of the spouse's death the widow(er) was married for at least three years and is an invalid entitled to pension
- For 1 year only, if at the date of the spouse's death the widow(er) was less than 50 and not an invalid, or the widow(er) was at least 50 but married for less than three years.
- For as along as the widow(er) continues to wholly or partly maintain children of the deceased, if not being remarried

For dependant children, pension will be paid up to age 16, or 18 if in full-time education at an approved institution, or recovers from invalidity.

For dependant parents or grandparents, the benefit will be a lifelong pension if they are 60 or older and no other survivor exists.

Survivors' grant

Contributiion requirement:
50 to 149 paid or credited contribution weeks.

Amount of benefit:
Same proportion of the old-age grant as survivors pension bears to the old-age pension.

Funeral grant

Eligibility:
An insured person who was in receipt of or had title to a benefit or who was insured for at least 8 weeks during the last 13 weeks. A grant is also payable in respect of the death of the spouse or a dependant child if the insured was in receipt or had title to a sickness, maternity, invalidity or old-age benefit. Note that when death results from employment injury, no prior contributions are required and only one grant may be paid.

Amount of grant:
$1,800 for the insured, $1,500 for an uninsured spouse, and $750 for a dependent child. The funeral grant has been increased on an ad-hoc basis as follows:

1979-1984	$100.00
1984-1990	200.00
1990-1992	800.00
1992-1998	1,200.00
1998-present	1,500.00

I.2.2 Short-term benefits

Sickness benefit

Contribution requirement:
13 paid contribution weeks with at least eight weeks in the last 13. The insured must have been engaged in insurable employment immediately at the onset of the illness and subsequently unable to work.

Waiting period:
Four days. If incapacity lasts for more than four days, benefit is payable from the first day. Two periods of illness not separated by less than eight weeks are treated as one.

Amount of benefit:
60 per cent of average weekly insurable earnings during the last 13 weeks prior to the illness.

Duration of benefit:
Maximum of 26 weeks.

Maternity allowance

Contribution requirement:
30 contribution weeks with at least 20 weeks paid in the last 30 weeks. The insured must have been engaged in insurable employment immediately at the onset of the confinement and subsequently unable to work.

Amount of benefit:
60 per cent of average weekly insurable earnings during the last 30 weeks.

Duration of benefit:
12 weeks, starting within three to six weeks before the expected date of confinement.

Maternity grant

Contribution requirement:
26 paid contribution weeks in last 52 preceding the date of confinement. The combined contributions of the mother and an insured spouse will qualify the mother. Spouse includes a common law spouse where both parties lived together for at least three years.

Amount of grant: $250.
The maternity grant has increased on an ad-hoc basis as follows:

1976-1983	$ 25.00
1983-1988	50.00
1989-1995	200.00
1995-present	250.00

I.2.3 Employment injury benefit

Injury benefit

Eligibility:
Incapable of work as a result of a work-related accident or a prescribed disease. There are no qualifying contribution requirements for employment injury benefits.

Amount of benefit:
60 per cent of average insurable earnings in the last 13 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:
4 days. If incapacity lasts for more than four days, benefit is payable from the first day.

Disablement benefit

Eligibility:
Disablement resulting from an accident at work or a prescribed disease.

Waiting period:
The period of payment 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 30 per cent or more, a weekly benefit of the injury benefit amount times the degree of disablement is paid.

If the degree of disablement is less than 30 per cent, a grant equal to 365 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.

Death benefit

Eligibility:
Dependants are defined as for survivors' benefit.

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 paid.

Medical expenses

Expenses covered:
Medical, surgical, dental, hospital and nursing services, medicines, prosthetic devices and transportation costs incurred as a result of an employment injury or prescribed disease. The amount reimbursed will not exceed the annual ceiling on insurable wages.

I.3 Redundancy benefits

Under the Protection of Employment Act, employers are liable to pay employees whom they make redundant a lump sum benefit based on years of service and final pay, as defined in the Act. When an employer makes such a payment, he is entitled to a rebate of 10 per cent of the amount payable under the Act. This amount is payable out of the Redundancy Benefits Fund (RBF) that is administered by the Social Security Board but is separate from the Dominica Social Security Fund. Payment out of the Fund may also be made where an employer fails to make the appropriate payment to former employees.

Contributions allocated to the RBF are collected by the DSS as part of its social security contributions and are equal to 0.25 per cent of insurable wages for all but self-employed and employees of the Dominica Government.

Appendix II. Methodology, data and assumptions

This actuarial review makes use of the comprehensive methodology developed at the Financial and Actuarial Service of the ILO for reviewing the long-term actuarial and financial status of a national pension scheme. The review has been undertaken by modifying the generic version of the ILO modelling tools to fit the specific case of Dominica and the DSS. 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 Dominica's future demographic and economic environment. Next, projection factors specifically related to Social Security are determined and used in combination with the demographic/economic framework to estimate future cash flows and reserves. Assumption selection takes into account both recent experience and future expectations, with emphasis placed on long-term trends rather than giving undue weight to recent experience.

II.1 Modelling the demographic and economic developments

Dominica's population has been projected beginning with preliminary results of the 2001 national census and applying appropriate mortality, fertility and migration assumptions. For the *Intermediate* scenario the total fertility rate is assumed to decrease from 2.0 in 2002 to 1.85 in 2012, and remain constant thereafter. Table AII.1 shows ultimate age-specific and total fertility rates. For the *Pessimistic* and *Optimistic* scenarios, the ultimate total fertility rates are assumed reached in 2022 and 2012, respectively.

Table AII.1 Age-specific and total fertility rates

Age Group	2002	Ultimate Rates		
		Optimistic	Intermediate	Pessimistic
15 - 19	0.042	0.027	0.025	0.023
20 - 24	0.064	0.068	0.063	0.058
25 - 29	0.111	0.108	0.100	0.092
30 - 34	0.089	0.099	0.092	0.084
35 - 39	0.072	0.085	0.079	0.072
40 - 44	0.022	0.017	0.016	0.015
45 - 49	-	-	-	-
TFR	**2.00**	**2.00**	**1.85**	**1.70**

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 71 and 74 for males and females, respectively.

Improvements in life expectancy for the *Intermediate* and *Optimistic* scenarios have been assumed to follow the "medium" rate as established by the United Nations with the "slow" rate assumed for the *Pessimistic* scenario. Sample mortality rates and the life expectancies at birth and at age 60 for sample years under the "medium" rate of improvements are provided in Table AII.2.

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

Age	Males			Females		
	2002	2032	2062	2002	2032	2062
0	0.0142	0.0058	0.0037	0.0127	0.0056	0.0036
5	0.0009	0.0003	0.0001	0.0007	0.0003	0.0002
15	0.0005	0.0004	0.0002	0.0003	0.0002	0.0001
25	0.0011	0.0010	0.0009	0.0006	0.0004	0.0003
35	0.0017	0.0010	0.0008	0.0011	0.0006	0.0005
45	0.0033	0.0023	0.0017	0.0023	0.0015	0.0011
55	0.0079	0.0063	0.0049	0.0056	0.0037	0.0026
65	0.0198	0.0157	0.0113	0.0146	0.0090	0.0060
75	0.0493	0.0443	0.0333	0.0389	0.0288	0.0198
85	0.1176	0.1244	0.1091	0.1009	0.0986	0.0800
95	0.2550	0.2809	0.2683	0.2335	0.2541	0.2319
Life expectancy at:						
Birth	71.1	76.0	78.1	74.1	78.9	82.5
Age 60	18.9	20.7	21.7	20.7	22.2	24.9

Table AII.3 Net immigration, initial year and 2042 and beyond

Age	Initial year		Ultimate rates - 2042					
			Optimistic		Intermediate		Pessimistic	
	Male	Female	Male	Female	Male	Female	Male	Female
0 - 9	(30)	(29)	-	-	(7)	(6)	(9)	(8)
10 - 19	(28)	(37)	-	-	(6)	(8)	(8)	(11)
20 - 29	(181)	(194)	-	-	(39)	(42)	(52)	(55)
30 - 39	(95)	(82)	-	-	(20)	(17)	(27)	(23)
40 - 49	(17)	(14)	-	-	(4)	(3)	(5)	(4)
50 - 59	2	(1)	-	-	0	0	1	0
60 - 69	4	0	-	-	1	0	1	0
70+	3	0	-	-	1	0	1	0
All ages	**(342)**	**(357)**	**-**	**-**	**(74)**	**(76)**	**(98)**	**(102)**

Net migration (in minus out) for each scenario is assumed to decline over the projection period at varying rates and reaching different ultimate levels. Table AII.3 shows the age distribution of net migrants for the first projection year and the ultimate levels (2042 and beyond) for each of the three scenarios.

The projection of the labour force, i.e. the number of people available for work, is obtained by applying assumed labour force participation rates to the projected number of persons in the total population. Labour force participation rates have been estimated using the results of the 1999 Labour Force Survey conducted by the Central Statistical Office. Between 2001 and 2062, age-specific labour force participation rates are assumed to increase at advanced ages for males and females. Table AII.4 below shows the assumed age-specific labour force participation rates in 2002 and 2062. Between these two years, rates are assumed to change linearly.

Table AII.4 Age-specific and total labour force participation rates

Age	Males		Females	
	2002	2062	2002	2062
17	49%	49%	27%	28%
22	82%	82%	70%	72%
27	87%	87%	72%	74%
32	90%	90%	76%	78%
37	90%	90%	77%	80%
42	90%	90%	80%	82%
47	91%	91%	79%	81%
52	89%	91%	70%	81%
57	85%	89%	60%	72%

Year	Males	Females
2002	76%	61%
2012	78%	63%
2022	80%	65%
2032	81%	65%
2042	81%	65%
2052	82%	66%
2062	82%	66%

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, 1 per cent per annum, as it is expected that wages will adjust to efficiency levels over time. The inflation assumption affects nominal average wage increases.

II.2 Projection of DSS income and expenditure

This actuarial review addresses all Dominica Social Security revenue and expenditure items. For Short-term and Employment injury benefit branches, income and expenditure are projected as a percentage of insurable earnings.

For the Long-term and Employment injury benefit branches, 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. DSS administrative expenses 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 DSS population data and assumptions

The data required for the valuation of the DSS is extensive. As of 31 December 2002, required data includes the insured population by active and inactive status, the distribution of insurable wages among contributors, the distribution of paid and credited contributions and pensions in payment, all segregated by age and sex.

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

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

Details of DSS specific input data and the key assumptions used in this report are provided in Tables AII.5 through AII.9.

Table AII.5 Active insured population, earnings and past credits, 2002

Age	No. of Active Insured persons		Average monthly Insurable Earnings		Average no. of years of Past Credits	
	Male	Female	Male	Female	Male	Female
15-19	600	450	827	838	0.4	0.4
20-24	1,450	1,076	1,136	1,147	2.3	2.2
25-29	1,400	1,257	1,529	1,285	5.0	4.6
30-34	1,321	1,316	1,870	1,480	7.9	7.3
35-39	1,256	1,154	2,018	1,551	10.9	10.1
40-44	1,005	940	2,032	1,583	13.9	12.9
45-49	851	687	2,197	1,841	16.1	14.9
50-54	606	513	2,266	1,608	17.0	15.7
55-59	406	324	2,035	1,223	17.3	16.1
All ages	8,895	7,717	1,730	1,416	9.0	8.5

Table AII.6 Pensions in payment, December 2002

Age	Old-Age Benefit		Invalidity Benefit		Survivors Benefits		Disablement Benefit	
	Male	Female	Male	Female	Male	Female	Male	Female
0 - 4					7	4		
5 - 9					15	16		
10 - 14					37	51		
15 - 19					29	38		
20 - 24					-	1	-	-
25 - 29			1	1	1	4	1	-
30 - 34			1	-	1	7	3	1
35 - 39			6	4	2	9	4	1
40 - 44			6	10	2	18	5	-
45 - 49			22	14	1	13	3	1
50 - 54			16	21	1	25	4	-
55 - 59			47	26	2	30	6	2
60 - 64	514	430	33	31	1	23	1	-
65 - 69	403	360	24	31	1	44	1	1
70 - 74	279	258	7	21	2	51	1	1
75 - 79	166	141	-	-	2	34		
80 - 84	39	50			3	18		
85+	5	8			7	8		
# of Pensioners	**1,406**	**1,247**	**163**	**159**	**114**	**394**	**29**	**7**
Avg Weekly Pension	**$ 119**	**76**	**$ 110**	**$ 80**	**$ 36**	**$ 48**	**$ 152**	**$ 175**

Table AII.7 shows assumed density factors, or the average portion of the year for which contributions are made for non-civil servants.

Table AII.7 Density of contributions

Age	Males	Females
17	31%	33%
22	65%	69%
27	75%	80%
32	79%	84%
37	79%	85%
42	84%	90%
47	86%	92%
52	85%	91%
57	84%	90%

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	0.193	0.108
27	0.537	0.177
32	0.338	0.341
37	0.535	0.383
42	0.433	1.647
47	2.882	1.896
52	2.880	3.876
57	6.143	7.681

Table AII.9, below, shows the assumed probability of survivor benefit claims and the average ages of new claimants, groups by the age of the deceased.

Table AII.9 Probability of a deceased having eligible survivors and their average ages

Age	Males		Females	
	Probability of Eligible Spouse	**Avg # of Eligible Children**	**Probability of Eligible Spouse**	**Avg # of Eligible Children**
17	0%	-	0%	-
22	8%	0.0	0%	0.0
27	5%	0.1	0%	0.1
32	25%	0.2	8%	0.3
37	23%	0.4	15%	0.7
42	26%	0.7	13%	0.7
47	31%	0.6	10%	0.6
52	29%	0.4	8%	0.4
57	32%	0.3	10%	0.1
62	31%	0.3	10%	0.1
67	26%	0.1	7%	-
72	10%	0.1	4%	-
77	9%	0.1	3%	-
82	8%	0.0	2%	-
87	6%	0.0	1%	-

Appendix III. Projection results – *Pessimistic* and *Optimistic* scenarios

Table AIII.1 Projected Dominica population, *Pessimistic* scenario, 2003-2062

Year	Total	Age 0 - 15	Age 16 - 59	Age 60 and over	Ratio of persons 16-64 to 65 and over
2003	71,080	23,854	38,360	8,866	4.3
2004	70,785	23,293	38,635	8,857	4.4
2005	70,512	22,707	38,965	8,840	4.4
2006	70,262	22,102	39,342	8,818	4.5
2007	70,031	21,485	39,754	8,792	4.5
2008	69,824	20,857	40,201	8,766	4.6
2012	69,176	18,482	41,982	8,712	4.8
2022	68,255	16,021	42,512	9,722	4.4
2032	67,421	14,151	40,644	12,626	3.2
2042	65,929	11,922	38,853	15,154	2.6
2052	63,182	10,448	35,041	17,693	2.0
2062	58,682	9,489	30,005	19,188	1.6

Table AIII.2 Projected income, expenditure and reserves, *Pessimistic* scenario, 2002-2062 (millions of $'s)

Year	Income				Expenditure				Reserves	
	Contribution income	Investment income	Other income	Total	Benefits	Admin.and other expenses	Total	Surplus/ (Deficit)	Year-end	# of times current year's expenditure
2002	27.3	13.9	1.2	**42.4**	22.4	5.4	27.7	**14.7**	**237.4**	8.5
2003	25.2	14.6	1.0	**40.8**	24.8	4.4	**29.2**	**11.6**	**249.0**	8.5
2004	26.1	14.8	0.3	**41.2**	27.1	4.5	**31.6**	**9.6**	**258.6**	8.2
2005	27.4	14.1	0.3	**41.8**	29.4	4.7	**34.1**	**7.7**	**266.3**	7.8
2006	28.7	13.1	0.3	**42.1**	31.9	4.9	**36.8**	**5.3**	**271.6**	7.4
2007	30.1	13.4	0.3	**43.8**	34.4	5.1	**39.5**	**4.3**	**275.9**	7.0
2008	31.5	13.5	0.3	**45.3**	37.1	5.3	**42.4**	**2.9**	**278.8**	6.6
2012	37.7	13.4	0.4	**51.5**	50.4	6.2	**56.6**	**(5.1)**	**272.2**	4.8
2022	56.4	(0.1)	0.6	**56.9**	109.6	8.5	**118.1**	**(61.2)**	**(32.6)**	(0.3)
2032	76.9	(62.0)	0.8	**15.7**	217.7	10.7	**228.4**	**(212.7)**	**(1,378.4)**	(6.0)
2042	100.1	(229.3)	1.0	**(128.2)**	363.2	12.7	**375.9**	**(504.1)**	**(4,954.5)**	(13.2)
2052	119.2	(588.6)	1.2	**(468.2)**	546.9	13.7	**560.6**	**(1,028.8)**	**(12,584.5)**	(22.4)
2062	139.6	(1,303.0)	1.4	**(1,162.0)**	785.9	14.3	**800.2**	**(1,962.2)**	**(27,695.5)**	(34.6)

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

Table AIII.3 Projected benefit expenditure, *Pessimistic* scenario, 2002-2062 (millions of $'s)

Year	Pensions and benefits						Benefits as a % of:	
	Age	Invalidity	Survivors'	Short-term	Emp. injury	Grants	Insurable wages	GDP
2002	13.3	1.6	1.2	5.4	0.5	0.3	8.0%	3.7%
2003	14.8	1.7	1.3	6.2	0.5	0.3	9.6%	3.9%
2004	16.3	1.9	1.4	6.4	0.6	0.5	10.1%	4.1%
2005	17.9	2.1	1.5	6.8	0.6	0.5	10.5%	4.3%
2006	19.6	2.3	1.7	7.1	0.7	0.5	10.8%	4.4%
2007	21.3	2.5	1.8	7.5	0.7	0.6	11.1%	4.6%
2008	23.2	111.0	2.0	7.8	0.8	0.6	11.5%	4.7%
2012	32.7	3.9	2.6	9.4	1.1	0.7	13.0%	5.4%
2022	78.0	8.6	5.0	14.3	2.4	1.4	18.9%	7.9%
2032	167.9	14.9	9.0	19.7	4.1	2.1	27.6%	11.3%
2042	292.6	21.6	14.7	26.0	6.1	2.3	35.4%	14.2%
2052	451.3	30.9	21.6	31.4	8.7	3.1	44.7%	16.9%
2062	664.1	38.8	30.4	37.2	11.2	4.1	54.9%	19.9%

Grants includes Funeral grant

Table AIII.4 Projected contributors and pensioners, *Pessimistic* scenario, 2002-2062

Year	No. of contributors	No. of pensioners					Total no. of pensioners	Ratio of contributors to pensioners
		Age	Invalidity	Widow(er)s	Orphans	Death and disablement		
2002	16,506	2,653	322	303	208	55	**3,541**	**4.7**
2003	16,534	2,804	334	324	210	60	**3,732**	**4.4**
2004	16,681	2,925	346	339	229	62	**3,901**	**4.3**
2005	16,989	3,025	359	354	248	65	**4,051**	**4.2**
2006	17,298	3,129	373	370	264	68	**4,204**	**4.1**
2007	17,603	3,234	388	386	274	71	**4,353**	**4.0**
2008	17,903	3,341	404	402	278	74	**4,499**	**4.0**
2012	19,076	3,848	480	470	262	85	**5,145**	**3.7**
2022	21,136	5,781	726	659	247	120	**7,533**	**2.8**
2032	21,477	8,597	915	850	246	149	**10,757**	**2.0**
2042	20,886	10,899	966	999	246	161	**13,271**	**1.6**
2052	18,738	12,841	1,007	1,086	234	169	**15,337**	**1.2**
2062	16,504	14,623	944	1,138	226	163	**17,094**	**1.0**

Table AIII.5 Projected Dominica population, *Optimistic* scenario, 2003-2062

Year	Total	Age 0 - 15	Age 16 - 59	Age 60 and over	Ratio of persons 16-64 to 65 and over
2003	71,673	23,931	38,881	8,861	4.4
2004	71,675	23,423	39,403	8,849	4.5
2005	71,705	22,900	39,973	8,832	4.5
2006	71,758	22,368	40,581	8,809	4.6
2007	71,836	21,835	41,217	8,784	4.7
2008	71,937	21,301	41,877	8,759	4.8
2012	72,575	19,412	44,446	8,717	5.1
2022	76,192	19,077	47,358	9,757	4.9
2032	81,000	19,185	48,658	13,157	3.7
2042	85,240	17,841	50,321	17,078	2.9
2052	88,871	17,796	49,748	21,327	2.3
2062	91,151	18,242	48,547	24,362	2.0

Table AIII.6 Projected income, expenditure and reserves, *Optimistic* scenario, 2002-2062 (millions of $'s)

Year	Income				Expenditure				Reserves	
	Contribution income	Investment income	Other income	Total	Benefits	Admin. and Other expenses	Total	Surplus/ (Deficit)	Year-end	# of times current year's expenditure
2002	27.3	13.9	1.2	**42.4**	22.4	5.4	27.8	**14.6**	**237.4**	8.5
2003	25.2	14.6	1.0	**40.8**	24.8	4.4	**29.2**	**11.6**	**249.0**	8.5
2004	26.2	15.8	0.3	**42.3**	26.9	4.5	**31.4**	**10.9**	**259.9**	8.3
2005	27.5	17.0	0.3	**44.8**	29.0	4.7	**33.7**	**11.1**	**271.0**	8.0
2006	29.1	18.2	0.3	**47.6**	31.3	4.9	**36.2**	**11.4**	**282.4**	7.8
2007	30.8	19.5	0.3	**50.6**	33.7	5.1	**38.8**	**11.8**	**294.2**	7.6
2008	32.5	20.3	0.3	**53.1**	36.3	5.3	**41.6**	**11.5**	**305.7**	7.3
2012	40.6	23.1	0.4	**64.1**	48.9	6.3	**55.2**	**8.9**	**345.8**	6.3
2022	65.5	19.7	0.7	**85.9**	105.4	8.8	**114.2**	**(28.3)**	**277.2**	2.4
2032	99.8	(36.7)	1.0	**64.1**	215.1	11.4	**226.5**	**(162.4)**	**(625.0)**	(2.8)
2042	146.9	(244.7)	1.5	**(96.3)**	394.1	13.7	**407.8**	**(504.1)**	**(3,872.2)**	(9.5)
2052	209.1	(810.7)	2.1	**(599.5)**	667.0	15.1	**682.1**	**(1,281.6)**	**(12,631.9)**	(18.5)
2062	304.2	(2,192.3)	3.0	**(1,885.1)**	1,086.4	15.6	**1,102.0**	**(2,987.1)**	**(33,913.9)**	(30.8)

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, 2002-2062 (millions of $'s)

Year	Pensions and benefits						Benefits as a % of:	
	Age	Invalidity	Survivors'	Short-term	Emp. injury	Grants	Insurable wages	GDP
2002	13.3	1.6	1.2	5.4	0.5	0.3	8.0%	3.7%
2003	14.8	1.7	1.3	6.2	0.5	0.3	9.6%	3.9%
2004	16.2	1.9	1.4	6.4	0.6	0.5	10.0%	4.1%
2005	17.6	2.1	1.5	6.8	0.6	0.5	10.3%	4.2%
2006	19.1	2.2	1.6	7.2	0.7	0.5	10.5%	4.3%
2007	20.6	2.4	1.8	7.6	0.7	0.6	10.7%	4.3%
2008	22.3	111.0	1.9	8.1	0.8	0.6	10.9%	4.4%
2012	30.9	3.8	2.4	10.1	1.1	0.7	11.8%	4.8%
2022	72.5	8.2	4.4	16.6	2.3	1.4	15.7%	6.5%
2032	160.6	14.9	7.9	25.6	4.1	2.0	21.0%	8.6%
2042	309.3	24.2	13.5	38.2	6.9	2.2	26.2%	10.3%
2052	536.7	39.2	21.8	55.0	11.1	3.1	31.1%	11.6%
2062	893.6	57.3	33.1	81.1	16.7	4.6	34.8%	12.8%

Grants includes Funeral Grant

Table AIII.8 Projected contributors and pensioners, *Optimistic* scenario, 2002-2062

Year	No. of contributors	No. of pensioners					Total no. of pensioners	Ratio of contributors to pensioners
		Age	Invalidity	Widow(er)s	Orphans	Death and disablement		
2002	16,506	2,653	322	303	208	55	**3,541**	**4.7**
2003	16,537	2,804	334	324	210	60	**3,732**	**4.4**
2004	16,691	2,926	346	339	229	62	**3,902**	**4.3**
2005	17,008	3,026	359	354	248	65	**4,052**	**4.2**
2006	17,491	3,131	373	369	263	68	**4,204**	**4.2**
2007	17,981	3,237	389	385	272	71	**4,354**	**4.1**
2008	18,473	3,344	405	401	276	74	**4,500**	**4.1**
2012	20,509	3,858	483	468	258	85	**5,152**	**4.0**
2022	24,557	5,804	745	650	243	121	**7,563**	**3.2**
2032	26,184	8,869	989	842	248	157	**11,105**	**2.4**
2042	27,026	12,165	1,122	1,028	266	181	**14,762**	**1.8**
2052	26,855	15,481	1,244	1,190	269	201	**18,385**	**1.5**
2062	26,551	18,513	1,284	1,293	257	210	**21,557**	**1.2**

Appendix IV. Benefit experience and analysis by benefit branches

Dominica Social Security administers three major types of social security benefits – pensions, short-term and employment injury. On behalf of the Dominica Government, DSS also administers redundancy benefits.[13] While the projections presented in Section 3 combined all DSS benefit expenditure, internal accounting procedures separate them into three branches. This allows for better monitoring of experience and separate financing methods 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 Long-term benefits branch

The Long-term benefits (LTB) branch presently receives the largest share of contribution income, 61.5 per cent, equivalent to 6 per cent of insurable wages. Pensions payable from this branch are old-age, invalidity and survivors'. Over 70 per cent of DSS benefit expenditure relates to this branch, since most pensions are payable for life. As a result, LTB branch expenditure will continue to increase as more pensioners with larger pensions are added.

At 31 December 2002, LTB branch reserves stood at $162 million or 8.4 times expenditure in 2002. (The amount of reserves relative to annual expenditure is a useful measure of how well benefits are funded. While a ratio of just over eight for pensions indicates that reserves are insufficient to cover total accrued liabilities, it is consistent with the partial funding method adopted by DSS.)

Expenditure for each benefit type for 2000 to 2002, expressed as a percentage of insurable wages, is shown in Table AIV.1 along with total branch expenditure. (Actual amounts paid by benefit type are provided in Appendix VI.)

Table AIV.1 shows that branch expenditure increased each year and exceeded the contribution allocation of 6 per cent of insurable wages. However, the LTB branch continues to realise annual surpluses due to investment income earned on reserves.

Table AIV.2 highlights pension activity between year-ends 2000 and 2002. While the number of old -age pensioners in payment increased by 25 per cent, the number of invalidity pensioners remained almost unchanged while the number of survivors' pensions decreased. However, the average weekly pension amounts for all benefits have increased.

[13] DSS collects the contributions, pays the benefits and invests surplus funds.

Table AIV.1 Long-term benefits branch expenditure, as a percentage of insurable wages, 2000-2002

	2000	2001	2002
Pensions and grants			
Old-age pension	4.10%	4.47%	4.76%
Invalidity pension	0.56%	0.60%	0.59%
Survivors' pension	0.40%	0.40%	0.43%
Old-age, invalidity and survivor grants	0.02%	0.03%	0.02%
Funeral grant	0.06%	0.06%	0.07%
Administrative expenses	1.23%	1.25%	1.01%
Total	6.37%	6.81%	6.88%
Total benefits (millions of $'s)	13.8	14.9	16.5

Note: Included in Administrative expenses in 2001 were Termination Expenses related to a Staff Voluntary Separation Plan.

Table AIV.2 Pensions in payment, awarded and terminated, 1999-2002

	Paid in Dec. 1999	Awards 2000–2002	Terminated 2000-2002	Paid in Dec. 2002	Average weekly pension	
					Dec. 1999	Dec. 2002
Benefits:						
Old-age	2,130	655	132	2,653	$81	$99
Invalidity	317	85	80	322	$82	$85
Survivors'	558	203	252	509	$33	$46

Funeral grant expenditure is also charged to the LTB branch and Table AIV.3 shows that these grants represent a very small percentage of expenditure and that they are only paid following around 20 per cent of all deaths in Dominica.

Table AIV.3 Funeral grant experience, 2000-2002

Year	No. of deaths	No. of grants awarded	Cost as a percentage of insurable wages
2000	503	99	0.03%
2001	576	103	0.03%
2002	-	137	0.03%

Note: - = data not available

Details of long-term projections of both the number of pensioners and expenditure are presented in Section 3. Given the long-term nature of pension benefits, expenditure will continue to increase, eventually surpassing income if the contribution rate is not changed. Since it is expected that the other benefit branches will hold only small reserves, if the LTB branch becomes exhausted, depletion of the entire Social Security Fund would follow shortly thereafter. Therefore, future contribution rate increases will be required, with most of the increased revenue allocated to the LTB branch.

IV.2 Short-term benefits branch

Unlike the LTB branch, the Short-term benefits (STB) branch is financed on a PAYG financial 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 wages 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 benefit, maternity allowance (benefit and grant) and Medicare, which is a simple allocation of a fixed percent of wages to the Consolidated Fund designed to held meet health care costs. Each year, 28.2 per cent of the Social Security portion of contribution income (equivalent to 2.75 per cent of insurable wages) and investment income on branch 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 2002, branch reserves stood at $30.6 million, or 4.8 times branch expenditure in 2002.

A summary of STB branch experience for 2000 to 2002 is provided in Tables AIV.4 through AIV.7.

Table AIV.4 Sickness benefit experience, 2000-2002

Year ended	No. of claims awarded per 1,000 insured persons	Average benefit duration (days)	Average weekly benefit ($)	Cost as a percentage of insurable wages
2000	288	10.8	223	0.80
2001	284	11.0	235	0.84
2002	285	11.3	238	0.75

Table AIV.5 Maternity benefit experience, 2000-2002

Year ended	No. of claims awarded per 1,000 insured persons	Average benefit duration (days)	Average weekly benefit ($)	Cost as per cent of insurable wages
2000	17	71.6	177	0.25
2001	16	71.6	205	0.27
2002	18	71.5	193	0.24

Table AIV.6 Maternity grant experience, 2000-2002

Year	No. of births	No. of grants awarded	Cost as per cent of insurable wages
2000	1,199	334	0.03
2001	1,242	308	0.03
2002	1,081	305	0.03

Table AIV.7 Administrative and total expenditure, STB branch, 2000-2002

Year	As a percentage of insurable wages:		
	Medicare	Administration and other expenditure	Total branch expenditure
2000	0.98	0.34	2.41
2001	1.05	0.35	2.54
2002	0.91	0.28	2.22

Note: Included in Administrative expenses in 2001 were Termination Expenses related to a Staff Voluntary Separation Plan.

With an allocation of 2.75 per cent of insurable earnings plus investment returns, the STB branch incurred surpluses each year. This was mainly due to smaller than expected amounts spent for Medicare, which is a simple transfer to the Consolidated Fund. The allocation is 15.1 per cent of cash contributions or 1.55 per cent of insurable earnings. But since much of the contribution income in recent years has not been received in cash, the amount actually transferred was much less than 1.55 per cent of insurable earnings.

Estimates of STB branch annual expenditure for the next three years are shown in Table AIV.8:

Table AIV.8 Projected STB branch costs

Benefit /expense	As a percentage of insurable wages
Sickness benefit	0.80
Maternity benefit	0.25
Maternity grant	0.03
Medicare	1.55
Administrative expenses	0.30
Total	2.93

IV.3 Employment Injury Benefits branch

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

Each year this branch receives 10.3 per cent of Social Security contribution income or 1 per cent of insurable wages, plus investment income on its reserves, while benefit costs and a portion of DSS administrative expenditure are deducted. On 31 December 2002, branch reserves stood at $44.4 million, or 43 times branch expenditure in 2002.

Tables AIV.9 to AIV.12 highlight Industrial benefit branch experience for 2000 to 2002.

Table AIV.9 Injury Benefit experience, 2000-2002

Year ended	No. of claims awarded per 1,000 insured persons	Average benefit duration (days)	Average weekly benefit ($)	Cost as a percentage of insurable wages
2000	11	17.6	199	0.05
2001	9	15.9	153	0.03
2002	8	16.4	189	0.03

Table AIV.10 Medical care and disablement grant experience, 2000-2002

	Medical expenses		Disablement grant	
Year	No. of claims awarded	Cost as a percentage of insurable wages	No. of claims awarded	Cost as a percentage of insurable wages
2000	4	0.001	-	0
2001	4	0.002	-	0
2002	2	0.001	-	0

Table AIV.11 Disablement and death benefit awards and pensions in payment, 2000-2002

	Disablement benefit			Death benefit		
Year	No. of pensions awarded	Pensioners in payment (December)	Payments as a percentage of insurable wages	No. of pensions awarded	Pensioners in payment (December)	Payments as a percentage of insurable wages
2000	8	29	0.12	2	19	0.03
2001	6	36	0.11	2	20	0.03
2002	4	36	0.11	1	19	0.04

Table AIV.12 EIB branch, administrative and total expenditure, 2000-2002

Year	As a percentage of insurable wages:	
	Administrative and other expenditure	Total branch expenditure
2000	0.24	0.44
2001	0.24	0.41
2002	0.19	0.37

Note: Included in Administrative expenses in 2001 were Termination Expenses related to a Staff Voluntary Separation Plan.

With 1.0 per cent of insurable wages allocated from contribution income plus investment returns, the EIB branch incurred surpluses each year. Estimates of Industrial benefits branch annual expenditure as a percentage of insurable earnings for the next three years are shown in Table AIV.13.

Table AIV.13 Projected EIB branch costs

Benefit/expense	As a percentage of insurable wages
Injury benefit	0.05%
Medical care	0.01%
Disablement benefit and grant	0.12%
Death benefit	0.05%
Administrative expenses	0.20%
Total	0.43%

IV.4 Branch allocations and transfer of reserves

At the end of 2002, both the STB and EIB branches had excessive levels of reserves – for the STB branch $30.6 million or 4.8 times year 2002 expenditure and for the EIB branch $44.4 million or 43 times branch expenditure in 2002. Adequate funding levels for the STB and EIB branches are 1 and 2 times annual expenditure, respectively. Therefore, transfers of reserves out of both branches and into the LTB branch are recommended as follows: $24 million from the STB branch and $40 million from the EIB branch.

Over the years, the portion of contribution income allocated to these branches exceeded expenditure, resulting in the build up of excessive reserves. As indicated in the previous section, EIB branch expenditure in the coming years is expected to be substantially less than current allocations and thus a reduction in the allocation of contribution income to this branch and an equal increase to the LTB branch is recommended.

No change is recommended for the allocation made to the STB branch, as the expected regular cash payment of the Government's contributions will likely see the Medicare transfer return to its expected 1.55 per cent of insurable earnings.

For the next three years, therefore, the recommended allocations of the Social Security portion of contribution income are:

- STB branch – 2.75 per cent of insurable earnings or 28.2 per cent of DSS contribution income
- LTB branch – 6.5 per cent of insurable earnings or 66.7 per cent of DSS contribution income
- EIB branch – 0.5 per cent of insurable earnings or 5.1 per cent of DSS contribution income

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

Appendix V. DSS income, expenditure and reserves, 2000-2002

		2000	2001	2002
Income				
	Contribution Income	26,631,273	26,529,105	27,769,121
	Investment Income	11,715,784	12,062,243	13,938,858
	Other Income	162,060	1,167,168	1,206,307
Total Income		**38,509,117**	**39,758,516**	**42,914,285**
Expenditure				
	Benefits			
	Sickness Benefit	2,162,929	2,263,222	2,117,053
	Maternity Benefit	675,125	729,121	675,096
	Maternity Grant	80,250	75,500	75,750
	Medicare	2,641,499	2,807,807	2,558,385
	Funeral Grant	168,039	173,201	208,442
	Old-age Benefit	11,029,776	11,983,940	13,348,511
	Invalidity Benefit	1,502,234	1,603,375	1,642,047
	Survivor's Benefit	1,076,509	1,063,923	1,206,686
	Old-age Grant	60,651	80,039	54,234
	Invalidity Grant	1,617	701	1,220
	Survivors Grant	603	2,408	4,395
	Refund of NPF	-	-	3,092
	Medical Expense	2,803	4,314	3,558
	Injury Benefit	122,396	70,650	72,961
	Disablement Benefit	317,326	293,775	309,319
	Death Benefit	93,839	88,883	98,833
	Redundancy	12,463	38,799	8,996
	Total Benefit Expenditure	**19,948,059**	**21,279,657**	**22,388,578**
	Administrative Expenditure	**4,887,282**	**4,119,837**	**4,167,400**
	Other Expenses	**-**	**812,277**	**1,216,750**
Total Expenditure		**24,835,341**	**26,211,771**	**27,772,728**
Excess of Income over Expenditure		**13,673,776**	**13,546,745**	**15,141,558**
Reserves at End of Year		**211,841,133**	**225,387,880**	**242,394,296**
	Short-term Benefits	24,502,176	26,802,579	30,648,474
	Long-term Benefits	146,990,675	153,947,339	161,798,847
	Employment Injury Benefits	36,059,739	39,963,944	44,841,167
	Redundancy	4,127,262	4,512,736	4,944,527
	Special Reserves	161,281	161,281	161,281

Note: Contribution Income includes income of the Redundancy Benefits Fund – 0.25 per cent of insurable earnings.