

# Actuarial Report

(7<sup>th</sup>)

---

on the

## OLD AGE SECURITY PROGRAM

As at 31 December 2003



Office of the Superintendent of  
Financial Institutions Canada

Bureau du surintendant des  
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Office of the Chief Actuary

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4 May 2005

The Honourable Ken Dryden, P.C., M.P.  
Minister of Social Development Canada  
House of Commons  
Parliament Buildings  
Wellington Street  
Ottawa, Ontario  
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Dear Minister:

In accordance with section 3 of the *Public Pensions Reporting Act*, I am pleased to submit the Actuarial Report prepared as at 31 December 2003, of the pension plan established under the *Old Age Security Act*.

Yours sincerely,



Jean-Claude Ménard, F.S.A., F.C.I.A.  
Chief Actuary



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## **I. Executive Summary**

This is the Seventh Actuarial Report since the implementation of the *Old Age Security Act* in 1952. It presents the results of an actuarial examination of the status of the Old Age Security (OAS) program as at 31 December 2003, and includes projections of future experience through the year 2075. The Fifth Actuarial Report, as at 31 December 2000, was tabled in the House of Commons on 19 June 2002. The next triennial report is scheduled as at 31 December 2006.

The Old Age Security Program has been amended several times, the most recent occasion as a result of the introduction of Part 23 of Bill C-43 on 24 March 2005. The effect of the amendment was covered in the Sixth Actuarial Report, which was tabled 7 April 2005 in the House of Commons. The effect of Part 23 of Bill C-43 is included in the financial projections of this report. The financial results excluding the impacts of Part 23 of Bill C-43 are presented in Appendix F of this report.

### **A. Purpose of Actuarial Report**

This report has been prepared in compliance with the timing and information requirements of the *Public Pensions Reporting Act*, which provides that the Chief Actuary shall prepare a triennial actuarial report on the benefits under the various Parts of the *Old Age Security Act*, being as follows:

- Part I: Basic OAS Pension
- Part II: Guaranteed Income Supplement (GIS)
- Part III: Allowance

Another important purpose of the report is to inform the general public of the current and projected financial status of the OAS. It provides information to evaluate its financial situation over a long period, provided the program remains unchanged. Such information should facilitate a better understanding of the financial status of the program and the factors that influence costs, contributing to an informed public discussion of issues related to it.

### **B. Scope of Actuarial Report**

Section II presents the general methodology used in preparing the actuarial estimates included in this report, which are based on the key “best-estimate” assumptions described in Section III. Section IV includes information on key demographic and financial indicators and on the projection of beneficiaries, expenditures and cost ratios. Section V presents a general conclusion while Section VI presents the actuarial opinion regarding this report.

The various appendices provide supplemental information on the provisions of the program, the description of the data, the assumptions and methods employed, the sensitivity analysis, the reconciliation of the results shown in this report with those presented in the previous actuarial report.



## C. Main Findings

The results of the actuarial projections of the financial status of the Old Age Security program presented in this report are generally consistent with the trends revealed in the previous actuarial report.

- Demographic changes will have a major impact on the ratio of workers to retirees; the ratio of the number of people aged 20 to 64 to those aged 65 and over is expected to fall from about 4.8 in 2004 to 2.2 in 2075.
- The number of beneficiaries for the basic pension is expected to more than double over the next 26 years, growing from 4.1 million in 2004 to 8.9 million by 2030.
- The number of Guaranteed Income Supplement and Allowance beneficiaries is expected to increase by 59% over the next 26 years, growing from 1.6 million in 2004 to 2.5 million by 2030. The percentage increase is less than for the basic pension due to the expected decline in recipient rates for these benefits over the same period.
- Total annual expenditures are expected to increase by 31% over the next six years, from \$28 billion in 2004 to \$37 billion in 2010 and to \$110 billion by 2030.
- The ratio of expenditures to Gross Domestic Product (GDP) is expected to increase from its 2004 level of 2.3% to 2.4% in 2010 because the increasing flow of new beneficiaries is only partially offset by the effect of the indexation formula. Maximum benefits are indexed to the rate of inflation, which is assumed to be lower than the rate of growth in both the GDP and the income of new retirees, which reduces the amount of income tested benefits payable.
- The ratio of expenditures to gross domestic product increases from 2.4% in 2010 to a high of 3.2% in 2030, driven largely by the retirement of the baby boom generation.
- Over the longer term, the effect of price-indexation of benefits predominates and results in the reduction of the ratio of expenditures to gross domestic product to 2.0% by the end of the projection period in 2075, or about 11% lower than its current level.

## II. Methodology

The actuarial examination of the Old Age Security program involves projections of its expenditures and cost measurement bases over a long period of time, so that the future impact of historical and projected trends in demographic and economic factors can be properly assessed. The actuarial estimates in this report are based on the current provisions of the OAS, the data regarding the starting point for the projections, the best-estimate assumptions regarding future demographic and economic experience, and the methodology for translating this information into estimates of future expenditures.

Since the Old Age Security program is financed from general tax revenues on a pay-as-you-go basis, there is no need to project either contributions or investment earnings. However, projections have been made of combined Canada Pension Plan (CPP) and Québec Pension Plan (QPP) contributory earnings, total employment earnings and of the gross domestic product (GDP), which bases are then used for measuring the relative costs over the projection period.

The costing begins with a projection of the general population of Canada. This requires assumptions regarding demographic factors such as fertility, migration and mortality.

Expenditures are made up of the benefits paid out and administrative expenses. Benefits are projected by applying assumptions regarding recipient rates for various types and levels of benefits to the projected population at the relevant ages, along with assumptions regarding increases in the maximum benefit rates. Administrative expenses are projected based on historical experience.

The combined CPP and QPP contributory earnings and total employment earnings cost measurement bases are derived by applying labour force participation and job creation rates to the projected population and by projecting average annual employment earnings; this requires assumptions such as wage increases, an earnings distribution and unemployment rates. The GDP is projected based on the historical relationship between GDP and total employment earnings.

The assumptions and results presented in the following sections make it possible to measure the financial status of the program over the projection period. A wide variety of factors influence both the current and projected financial position of the OAS Program. Accordingly, the results shown in this report differ from those shown in previous reports. Likewise, future actuarial examinations will reveal results that differ from the projections included in this report.

### III. Best-Estimate Assumptions

#### A. Introduction

The information required by statute, which is presented in Section IV, requires making several assumptions regarding future demographic and economic trends. The projections included in this report cover a long period of time until 2075 and the assumptions are determined by putting more emphasis on historical trends than on short-term trends. These assumptions reflect our best judgement and are referred to in this report as the “best-estimate” assumptions. The assumptions were chosen to form a coherent whole, taking into account certain interrelationships among them. To the extent applicable, the assumptions are consistent with the best-estimate assumptions used in the Twenty-First Canada Pension Plan Actuarial Report as at 31 December 2003.

Table 1 below presents a summary of the most important assumptions used in this report and those used in the previous triennial report. The assumptions are described in more detail in Appendix B of this report.

**Table 1 Best-Estimate Demographic and Economic Assumptions**

| Canada                            | 7 <sup>th</sup> Report<br>(as at 31 December 2003)           |             |             | 5 <sup>th</sup> Report<br>(as at 31 December 2000)           |             |             |             |             |
|-----------------------------------|--|-------------|-------------|--|-------------|-------------|-------------|-------------|
| Total fertility rate              | 1.60   |             |             | 1.64   |             |             |             |             |
| Mortality                         | 1995-97 Life Tables for Canada                               |             |             | 1990-92 Life Tables for Canada                               |             |             |             |             |
| Canadian life expectancy at birth |  | <u>2005</u> | <u>2025</u> |  | <u>2005</u> | <u>2025</u> |             |             |
|                                   | Males  | 78.0 years  | 80.7 years  | Males  | 77.0 years  | 78.8 years  |             |             |
|                                   | Females  | 82.6 years  | 84.1 years  | Females  | 82.0 years  | 83.2 years  |             |             |
| Net migration rate                | 0.50% of population to 2015<br>0.54% of population for 2020+ |             |             | 0.50% of population to 2015<br>0.52% of population for 2020+ |             |             |             |             |
| Participation rate (aged 15-69)   | 73.4% (2030)   |             |             | 72.5% (2030)   |             |             |             |             |
| Employment rate (aged 15-69)      | 68.6% (2030)   |             |             | 66.5% (2030)   |             |             |             |             |
| Unemployment rate                 | 6.5% (2020)  |             |             | 6.5% (2015)  |             |             |             |             |
| Rate of increase in prices        | 2.7% (2015+)   |             |             | 3.0% (2015+)   |             |             |             |             |
| Real-wage differential            | 1.2% (2012+)   |             |             | 1.1% (2015+)   |             |             |             |             |
| Recipient Rates                   |  | <u>2004</u> | <u>2025</u> | <u>2050</u>  |             | <u>2004</u> | <u>2025</u> | <u>2050</u> |
|                                   | OAS:   | 98.6%       | 99.9%       | 100.3%   | OAS:        | 98.3%       | 98.2%       | 98.4%       |
|                                   | GIS:   | 35.8%       | 28.8%       | 21.9%  | GIS:        | 35.1%       | 26.9%       | 20.8%       |
|                                   | Allowance:   | 6.4%        | 4.2%        | 2.5%   | Allowance:  | 7.4%        | 4.9%        | 2.6%        |

## **B. Demographic Assumptions**

The demographic projections start with the population of Canada on 1 July 2003, to which are applied fertility, migration and mortality assumptions. The population projections are essential to determine the future number of beneficiaries.

The distribution of the population by age has changed considerably over the last 50 years, with the population aging each year since then. The causes of this aging are examined in the following subsections.

### **1. Fertility**

The first cause of the aging of the Canadian population is the large drop in the total fertility rate over the last three decades, relative to the baby boom generation born between the mid-1940s to the mid-1960s. The fertility rate in Canada has dropped rapidly from an average level of about 4.0 per woman in the 1950s to 1.75 in the late 1970s and to 1.62 over the last two decades.

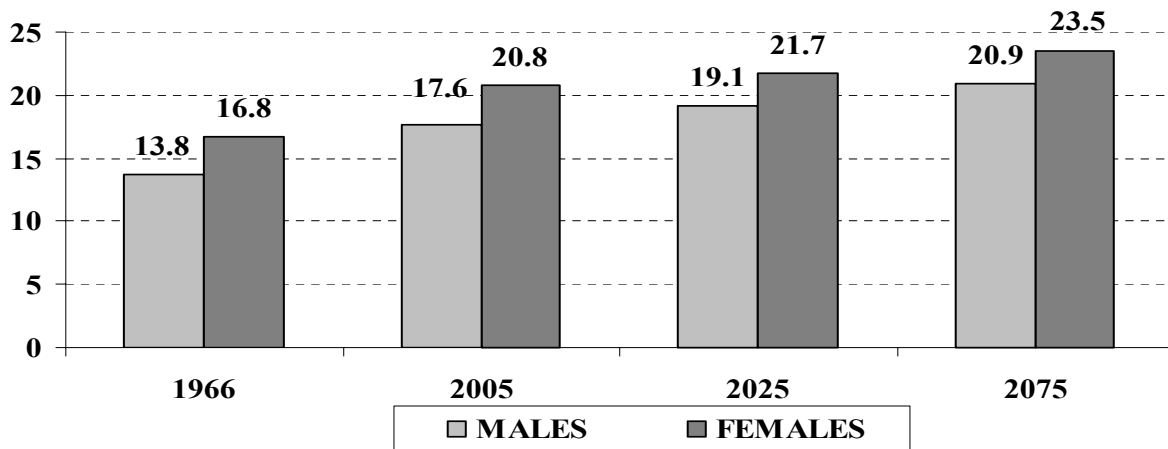
The decrease occurred as a result of changes in a variety of social, medical and economic factors. It is unlikely that fertility rates will return to historical levels in the absence of significant societal changes. It is assumed that the total fertility rate for Canada will increase slightly from its 2001 level of 1.51 to an ultimate level of 1.60 in 2016.

### **2. Mortality**

Another element that has contributed to the aging of the population is the significant reduction in age-specific mortality rates. This can be best measured by the increase in life expectancy at age 65, which directly affects how long retirement benefits will be paid to the beneficiaries. Life expectancy at age 65 has increased 24% for men between 1966 and 2001, rising from 13.8 to 17.1 years. For women, life expectancy at age 65 has increased 23%, from 16.8 to 20.6 years over the same period.

Mortality improvements are expected to continue in the future, but at a slower pace than observed over the last 25 years. The ultimate rates of improvement were established by adjusting the results of a detailed study prepared by the Social Security Administration in the United States. The adjustments are to reflect, in part, historical differences between Canada and the United States. Rates of improvement for the period 2002 to 2006 are assumed to be equal to those experienced over the period 1991 to 2001 and then gradually reduce to their ultimate levels by year 2026. Chart 1 shows the changes in life expectancy at age 65 since 1966 to the end of the projection period.

**Chart 1 Life Expectancy at Age 65  
 (Canada)**



### 3. Net Migration

Net migration (i.e. the excess of immigration over emigration) is unlikely to materially reduce the continued aging of the population unless (1) the level of immigration rises significantly above what has been observed historically and (2) the average age at immigration falls dramatically.

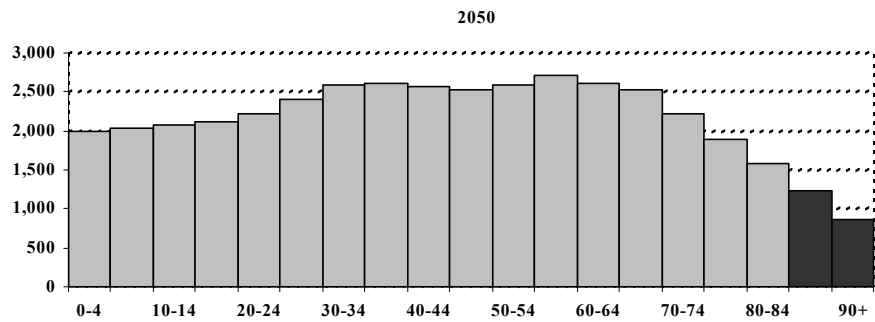
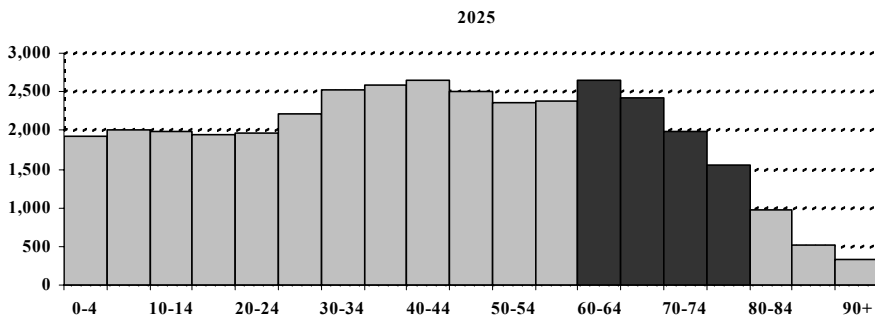
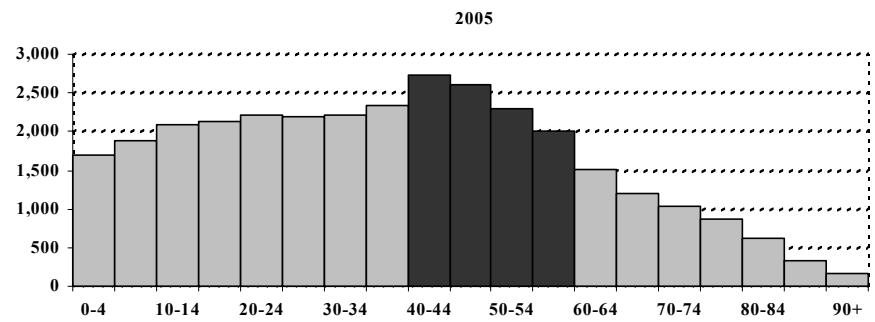
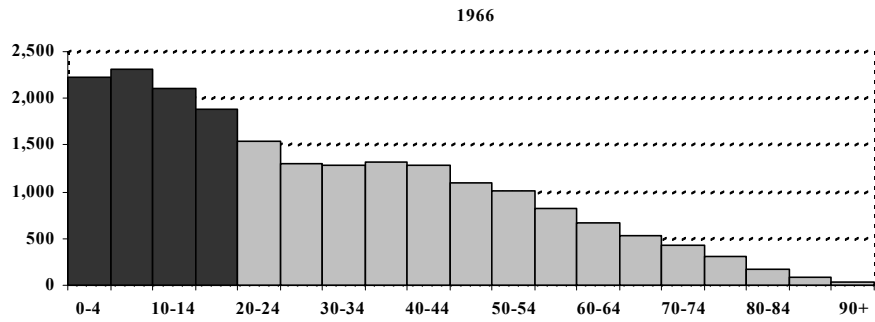
Net migration to Canada was 0.45% of the population in 2003 and has averaged 0.50% of the population over the last 30 years. Based on a continuation of these net migration levels and the expected pressure on the labour markets due to the impending retirement of the baby boom generation, an ultimate assumption of 0.54% of population has been established for years 2020 and beyond. The initial level of 0.50% is kept constant from 2004 until 2015, then increases uniformly to reach an ultimate level of 0.54% for 2020 and thereafter to take into account the effects of the anticipated labour shortage. The ultimate 0.54% is comparable to actual averages observed over the last 10 and 15 years.

### 4. Population Projections

Chart 2 shows the evolution of the Canadian population age distribution since 1966. One can observe that the triangular shape of the 1970s is becoming more rectangular, thus leading to an older population on average. The effects of the baby boom and baby bust can be seen. The chart also reveals that the population age 80 and over is expected to increase dramatically over the next 50 years.

Table 2 shows the population by age groups over the projection period. The ratio of people aged 20-64 to those aged 65 and over is a measure that approximates the number of working-age people to retirees. Because of the population aging, this ratio drops by more than half during the projection period, from 4.8 in 2004 to 2.2 in 2050. The number of people reaching age 65 in any given year is representative of the number of new OAS beneficiaries coming into pay each year. This number is expected to more than double over the next 21 years growing from 251,000 in 2004 to 515,000 in 2025.

**Chart 2 Population Distribution of Canada  
 (thousands)**



**Table 2 Population of Canada**  
 (thousands)

| <b>Year</b> | <b>Total</b> | <b>Age<br/>0-19</b> | <b>Age<br/>20-64</b> | <b>Age<br/>65 and Over</b> | <b>Ratio of 20-64<br/>to<br/>65 and Over</b> | <b>Reaching<br/>Age 65</b> |
|-------------|--------------|---------------------|----------------------|----------------------------|--|----------------------------|
| <b>2004</b> | 31,896       | 7,844               | 19,914               | 4,138                      | 4.8  | 251                        |
| <b>2005</b> | 32,162       | 7,791               | 20,152               | 4,219                      | 4.8  | 257                        |
| <b>2006</b> | 32,426       | 7,743               | 20,372               | 4,311                      | 4.7  | 272                        |
| <b>2007</b> | 32,689       | 7,707               | 20,572               | 4,410                      | 4.7  | 283                        |
| <b>2008</b> | 32,954       | 7,679               | 20,749               | 4,525                      | 4.6  | 302                        |
| <b>2009</b> | 33,218       | 7,643               | 20,931               | 4,645                      | 4.5  | 311                        |
| <b>2010</b> | 33,482       | 7,595               | 21,120               | 4,767                      | 4.4  | 318                        |
| <b>2015</b> | 34,819       | 7,475               | 21,698               | 5,647                      | 3.8  | 402                        |
| <b>2020</b> | 36,202       | 7,619               | 21,928               | 6,655                      | 3.3  | 468                        |
| <b>2025</b> | 37,495       | 7,878               | 21,813               | 7,805                      | 2.8  | 515                        |
| <b>2030</b> | 38,608       | 8,056               | 21,659               | 8,894                      | 2.4  | 509                        |
| <b>2040</b> | 40,217       | 8,084               | 22,367               | 9,766                      | 2.3  | 462                        |
| <b>2050</b> | 41,367       | 8,229               | 22,824               | 10,314                     | 2.2  | 515                        |
| <b>2075</b> | 44,274       | 8,811               | 24,242               | 11,220                     | 2.2  | 514                        |

### C. Economic Assumptions

The expenditures are presented as cost ratios using three different measurement bases, namely combined CPP/QPP contributory earnings, total employment earnings and gross domestic product. These cost bases are projected using economic assumptions such as labour force participation rates, employment rates, unemployment rates and average employment earnings increases. For benefit projection purposes, assumptions regarding the rate of increase in prices and recipient rates for the various benefits are also required.

One of the key elements underlying the best-estimate key economic assumptions relates to the expected labour shortage due to the aging of the population and the retirement of the baby boom generation between 2010 and 2030. Labour force growth will weaken as the population of labour force age expands at a slower pace. The outlook for the participation rates also points to slower labour force growth. Growing labour shortages, especially after 2010, are assumed to force higher real-wage growth. The higher real wages may help keep people in the labour force who might otherwise retire. The net result is an unemployment rate drop.

## 1. Labour Force

Employment levels are reflected in the projections through the assumption regarding the proportions of the population, by age and sex, who have earnings in a given year. These proportions vary not only with the rate of unemployment, but also reflect trends to increased workforce participation by women, longer periods of formal education among young adults and changing retirement patterns of older workers.

Because of the aging of the population, the labour force participation rates for Canadians aged 15 and over are expected to decline from 67.4% in 2004 to 61.1% by 2030. A more useful measure of the working age population is the participation rates of those aged 15 to 69, which are expected to decline from 74.9% in 2004 to 73.4% in 2030. The participation rates of those aged 60 to 69 are gradually increased after 2003. Moreover, the narrowing of the gap between the age-specific participation rates of men and women continues but at a much slower pace than in the past, except for certain age groups. Overall, rates for females aged 15 to 69 are projected to increase more than for males, primarily for those aged 30 to 49.

The job creation rate in Canada was 1.8% on average from 1976 to 2003, based on available employment data; it is assumed that the number of jobs will increase by 1.2% in 2004. From 2005 to 2010, the job creation rate is about 1.0% on average and 0.6% from 2010 to 2020. For 2020 and thereafter, because of the aging of the population, the job creation rate follows the labour force growth rate of about 0.3%.

The job creation rate is determined on the basis of the short-term economic outlook and the unemployment rate, which averages about 7.5% from 2004 to 2008. Thereafter, the relative stability of the labour force makes it possible for the unemployment rate to decrease to 6.5% around 2020.

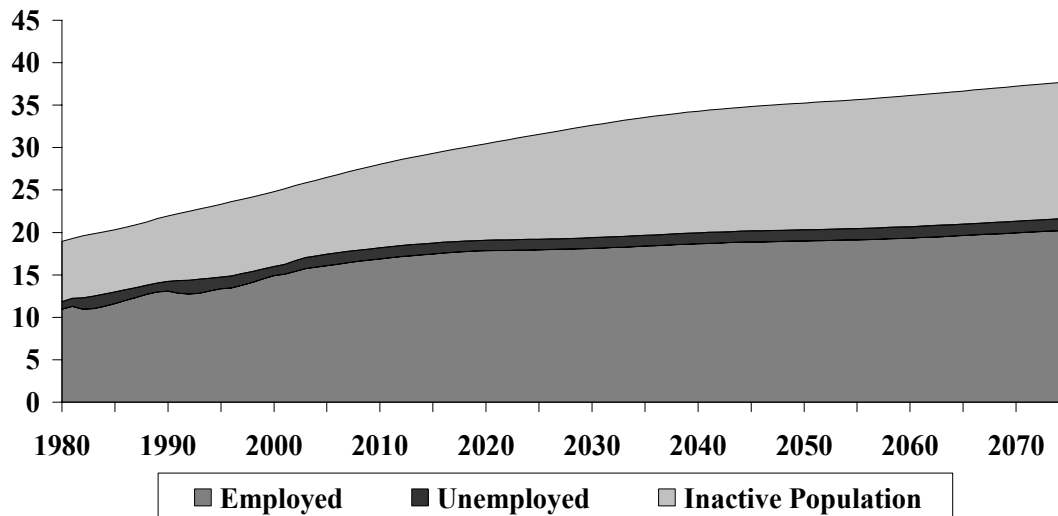
As shown in Chart 3, the number of employed aged 15 and over increases from about 11.0 million in 1980 to 19.0 million by 2050. At the start of the projection period in 2004, employment is set to reach 15.9 million. As annual employment growth is projected to decline gradually to about 0.3%, the average annual increase in employment from 2004 to 2050 reduces to 0.4%.

The labour force or the active population (that is, total employed and unemployed populations) increases from 11.9 million in 1980 to 17.2 million in 2004 and then to 20.3 million in 2050, which gives an average annual increase of 0.4% from 2004 to 2050.

The combined impact of a decrease in the labour force participation rate and of a gradual increase in the population aged 15 and over leads to an overall moderate increase in the labour force. The labour force grows at a slower rate than the population and the overall participation rate decreases because of the aging of the population, as shown in Chart 3.



**Chart 3 Distribution of the Canadian Population Aged 15 and Over**  
 (millions)



## 2. Price Increases

Price increases, as measured by changes in the Consumer Price Index, tend to fluctuate from year to year. Based on historical trends, the renewed commitment of the Bank of Canada and the Government to keep inflation between 1% and 3% until 2006 and long-term economic forecasts, an ultimate rate of price increase of 2.7% has been assumed for 2015 and thereafter. Recognizing recent experience, the rate of price increase is assumed at 2.0% for years 2004 to 2008. From 2009, the rate is then uniformly increased to its ultimate level of 2.7% in 2015.

## 3. Real Wage Increases (Average Annual Earnings)

Wage increases have an impact on the financial balance of the OAS program in two ways. In the short term, an increase in the average annual earnings (AAE) translates into higher total employment earnings, GDP and combined CPP/QPP contributory earnings, with little immediate impact on benefits. Therefore, costs in relation to these measurement bases will decrease.

Over the longer term, higher average earnings in relation to the level of prices may be expected to produce lower payouts for income-tested benefits such as the GIS and Allowance. The long-term projected costs relative to the various measurement bases are more dependent on the differential between the assumed annual rate of wage increases and price increases (the real-wage differential) than on the absolute level of wage increases assumed.

Many factors have influenced the real rate of increase in AAE, including general productivity improvements, the move to a service economy, decreases in the average hours worked and fluctuation in the size of the workforce. Considering these factors,

together with the historical trends, the expected labour shortage and various long-term economic forecasts, an ultimate real wage differential of 1.2% is assumed for 2012 and thereafter. Combined with the price increase assumption described above, this results in an assumed annual increase in AAE of 3.9% in 2015 and thereafter. For 2004, the real increase in AAE is assumed at 0.1% and is then gradually increased to reach 1.2% by 2012. The assumed real increase in AAE and in the proportions of earners results in projected average annual real increases in total employment earnings of about 1.7% for the period 2004 to 2020. This decreases to about 1.5% ultimately, reflecting the 1.2% real increase in annual wages and the 0.3% annual growth in the working-age population.

**Table 3 Economic Assumptions**

| Year | Real Increase Average Annual Earnings (%) | Price Increase (%) | Labour Force           |                       |                       |                                  |
|------|---|--------------------|------------------------|-----------------------|-----------------------|----------------------------------|
|      |   |                    | Participation Rate (%) | Job Creation Rate (%) | Unemployment Rate (%) | Labour Force Annual Increase (%) |
| 2004 | 0.1                                       | 2.0                | 67.4                   | 1.2                   | 7.6                   | 1.1                              |
| 2005 | 0.3                                       | 2.0                | 67.3                   | 1.1                   | 7.6                   | 1.1                              |
| 2006 | 0.5                                       | 2.0                | 67.2                   | 1.1                   | 7.6                   | 1.0                              |
| 2007 | 0.7                                       | 2.0                | 67.0                   | 1.0                   | 7.5                   | 0.9                              |
| 2008 | 0.8                                       | 2.0                | 66.8                   | 1.0                   | 7.3                   | 0.8                              |
| 2009 | 0.9                                       | 2.1                | 66.6                   | 0.9                   | 7.3                   | 0.8                              |
| 2010 | 1.0                                       | 2.2                | 66.4                   | 0.9                   | 7.2                   | 0.8                              |
| 2011 | 1.1                                       | 2.3                | 66.2                   | 0.8                   | 7.2                   | 0.8                              |
| 2012 | 1.2                                       | 2.4                | 66.0                   | 0.8                   | 7.1                   | 0.7                              |
| 2013 | 1.2                                       | 2.5                | 65.8                   | 0.7                   | 7.0                   | 0.6                              |
| 2014 | 1.2                                       | 2.6                | 65.6                   | 0.7                   | 6.8                   | 0.5                              |
| 2015 | 1.2                                       | 2.7                | 65.4                   | 0.6                   | 6.7                   | 0.5                              |
| 2020 | 1.2                                       | 2.7                | 64.2                   | 0.3                   | 6.5                   | 0.3                              |
| 2025 | 1.2                                       | 2.7                | 62.4                   | 0.1                   | 6.5                   | 0.1                              |
| 2030 | 1.2                                       | 2.7                | 61.1                   | 0.2                   | 6.5                   | 0.2                              |
| 2040 | 1.2                                       | 2.7                | 60.0                   | 0.3                   | 6.5                   | 0.3                              |
| 2050 | 1.2                                       | 2.7                | 59.4                   | 0.1                   | 6.5                   | 0.1                              |

## D. Recipient Rates

Old Age Security recipient rates represent the proportion of the Canadian population that have received (historical) or are projected to receive these benefits. It is worth noting that recipient rates for the basic pension presented in this report exclude the impact of the clawback provision. The impact of the clawback provision on the basic pension recipient rates is discussed in Section IV of Appendix B. The GIS and Allowance recipient rates presented throughout this report reflect the most recent amendment pursuant to Part 23 of Bill C-43, which increases the maximum monthly rates for these benefits effective 1 January 2006 and 1 January 2007 (see Sections IV and V of Appendix A).

The recipient rate for males is projected to increase from 99.0% in 2004 to 100.6% in 2050 while for females it is projected to increase from 98.4% to 100.2% over the same period. The gap between the recipient rates for males and females is thus projected to slightly decrease over the projection period. Recipient rates for the basic pension can exceed 100% of the population due to benefits paid outside of Canada. Finally, the distribution of the basic pension recipient rates by level of benefit for years 2004 and thereafter is projected by age and sex based on historical trends over the period 1998 to 2003.

The GIS and Allowance recipient rates (ratio of the number of beneficiaries to the population) by age, sex, type and level of benefit for year 2004 were used as the starting point for determining the best-estimate assumption. GIS and Allowance recipient rates are projected taking into account that each new cohort of beneficiaries is assumed to be somewhat wealthier than the preceding one resulting in a lower proportion of the basic pension recipients becoming eligible for these benefits over the projection period.

Furthermore, for GIS and Allowance, experience adjustment factors are used to adjust the projected recipient rates so that characteristics and trends of historical recipient rates by age, sex, type and level of benefit over the period 1995 to 2004 would be reproduced more closely. These experience adjustment factors were used for the first ten years of the projection period. The change in the assumed recipient rates by level of benefit is automatically taken into account by the formula.

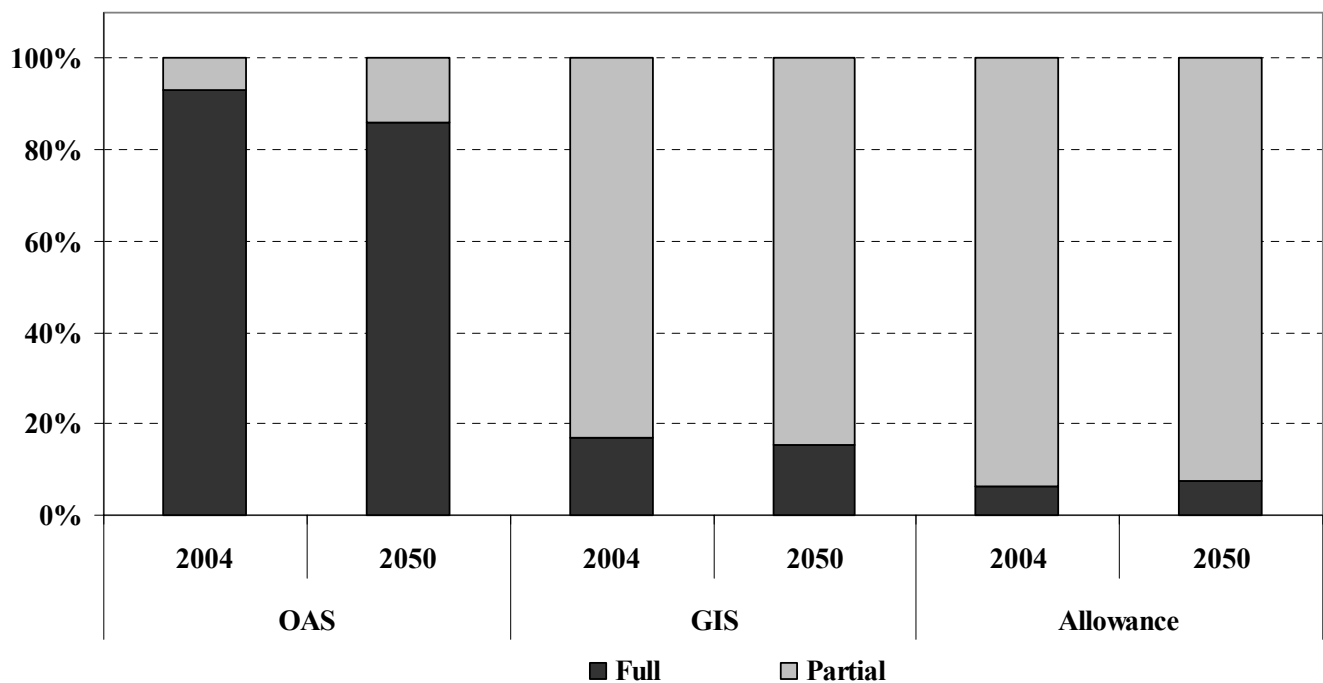
Table 4 presents a summary of the projected recipient rates by type of benefit. Chart 4 presents the projected distribution of beneficiaries by type and level of benefit.

**Table 4 Recipient Rates**  
 (population aged 65+)

|                                   | Males*       |               |               | Females*     |              |               |
|-----------------------------------|--------------|---------------|---------------|--------------|--------------|---------------|
|                                   | 2004         | 2005          | 2050          | 2004         | 2005         | 2050          |
| <b>OAS</b>                        | <b>99.0%</b> | <b>100.2%</b> | <b>100.6%</b> | <b>98.4%</b> | <b>99.7%</b> | <b>100.2%</b> |
| <b>GIS-Single</b>                 | 11.0%        | 10.4%         | 8.3%          | 30.5%        | 24.4%        | 20.6%         |
| <b>GIS-Spouse a Pensioner</b>     | 11.9%        | 8.3%          | 5.7%          | 9.1%         | 7.2%         | 4.2%          |
| <b>GIS-Spouse not a Pensioner</b> | 3.4%         | 2.8%          | 1.5%          | 0.9%         | 0.7%         | 0.6%          |
| <b>GIS-Spouse with Allowance</b>  | 3.2%         | 2.9%          | 2.1%          | 0.2%         | 0.2%         | 0.2%          |
| <b>GIS-All</b>                    | <b>29.4%</b> | <b>24.4%</b>  | <b>17.7%</b>  | <b>40.7%</b> | <b>32.6%</b> | <b>25.6%</b>  |
| <b>Allowance-Regular</b>          | 0.8%         | 0.4%          | 0.2%          | 7.7%         | 5.1%         | 2.7%          |
| <b>Allowance-Survivor</b>         | 0.4%         | 0.3%          | 0.2%          | 3.7%         | 2.4%         | 1.8%          |
| <b>Allowance-All</b>              | <b>1.1%</b>  | <b>0.7%</b>   | <b>0.4%</b>   | <b>11.4%</b> | <b>7.5%</b>  | <b>4.6%</b>   |

\* Overall recipient rates for the basic pension are on a gross basis (i.e. before the application of the clawback provision). Recipient rates for GIS and Allowance benefits reflect the most recent amendment pursuant to Part 23 of Bill C-43, which increases the maximum monthly rates for these benefits effective 1 January 2006 and 1 January 2007. All recipient rates include benefits paid outside Canada and for this reason can exceed 100%.

**Chart 4 Distribution of Beneficiaries by Level of Pension**



## IV. Results

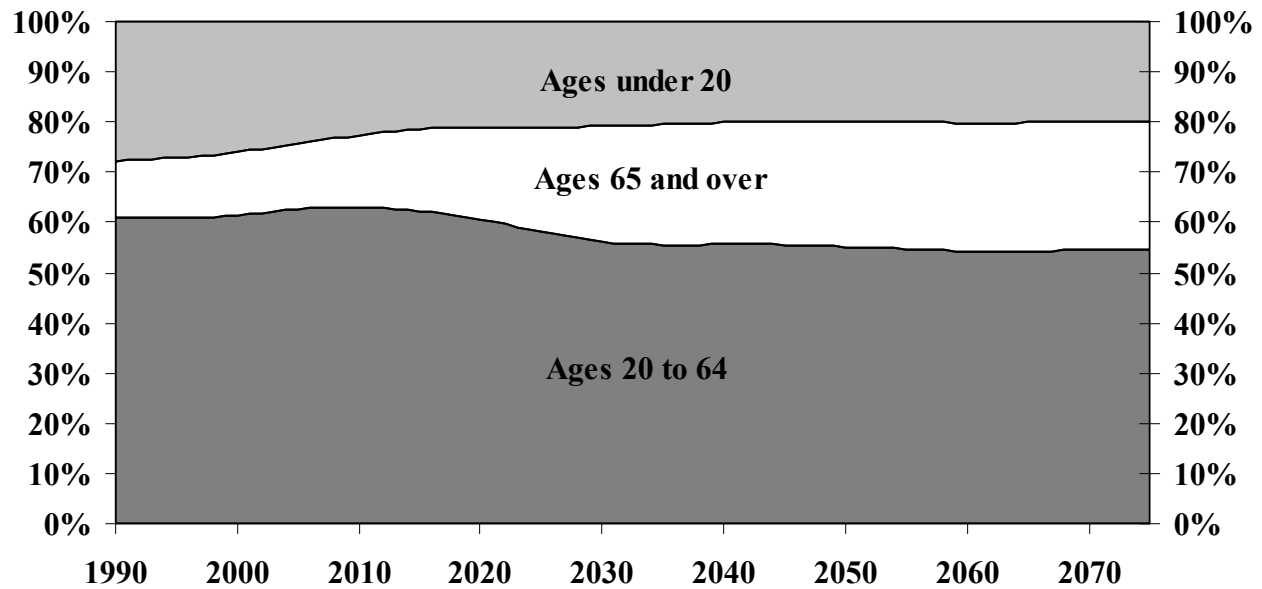
### A. Overview

The results of the projections of the financial status of the Old Age Security program presented in this report are generally consistent with the trends revealed in the previous actuarial report. The key observations and findings are as follows.

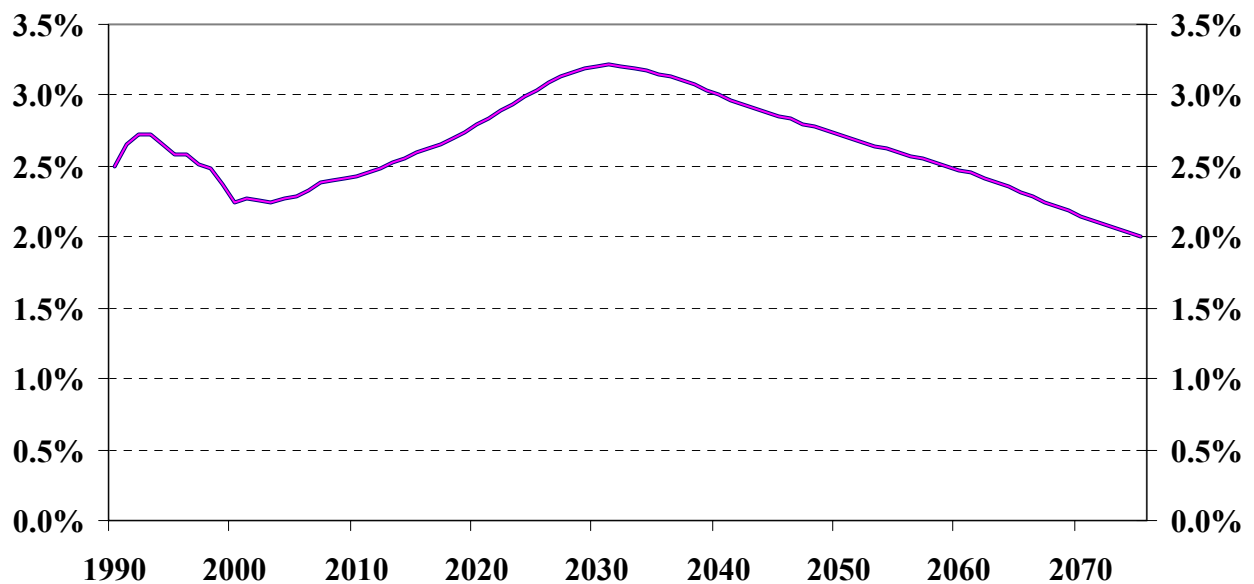
- Demographic changes will have a major impact on the ratio of workers to retirees; the ratio of the number of people aged 20 to 64 to those aged 65 and over is expected to fall from about 4.8 in 2004 to 2.2 in 2075.
- The number of beneficiaries for the basic pension is expected to more than double over the next 26 years, from 4.1 million in 2004 to 8.9 million by 2030.
- The number of Guaranteed Income Supplement and Allowance beneficiaries is expected to increase by 59% over the next 26 years, growing from 1.6 million in 2004 to 2.5 million by 2030. The percentage increase is less than for the basic pension due to the expected decline in recipient rates for these benefits over the same period.
- Total annual expenditures are expected to increase by 31% over the next six years, from \$28 billion in 2004 to \$37 billion in 2010 and to \$110 billion by 2030.
- The ratio of expenditures to Gross Domestic Product (GDP) is expected to increase from its 2004 level of 2.3% to 2.4% in 2010 because the increasing flow of new beneficiaries is only partially offset by the effect of the indexation formula. Maximum benefits are indexed to the rate of inflation, which is assumed to be lower than the rate of growth in both the GDP and the income of new retirees, which reduces the amount of income tested benefits payable.
- The ratio of total expenditures to GDP increases from 2.4% in 2010 to a high of 3.2% in 2030, driven largely by the retirement of the baby boom generation (see Chart 6).
- Over the longer term, the effect of price-indexation of benefits predominates and results in the reduction of the ratio of expenditures to GDP to 2.0% by the end of the projection period in 2075, or about 11% lower than its current level.

Over time, indexing benefit rates more slowly than the rate of growth in average employment earnings means that benefits will replace a decreasing share of an individual's pre-retirement earnings. In the past, this issue has been addressed through occasional ad hoc increases in the benefit rates as per the most recent amendment pursuant to Part 23 of Bill C-43. One of the sensitivity tests shown in Appendix C provides an indication of the impact on projected results if benefit rates are increased to partially reflect the growth in real wages. Financial results excluding Part 23 of Bill C-43 are presented in Appendix F of this report.

**Chart 5 Analysis of Population by Age Group**



**Chart 6 Expenditures as Proportion of GDP**



## B. Number of Beneficiaries

Tables 5 and 6 present the historical and projected number of beneficiaries along with the respective overall recipient rates. The number of beneficiaries is the product of the population and the relevant recipient rates, which vary by year, age, sex, type and level of benefit. Beneficiaries include those who receive benefits outside of Canada. In 2003, about 2% of the male population were receiving a basic pension outside Canada while it was about 1% for females. These percentages are expected to increase over the projection period.

The numbers of beneficiaries of the basic pension shown in Table 6 are on a gross basis, i.e. they have not been reduced to account for the clawback provision, which applies to high-income pensioners. The clawback provision effectively reduces recipient rates since very high-income pensioners may have their benefit completely reduced (e.g. about 2.6% of males and 0.8% of female OAS pensioners in 2003 had their pension completely reduced). The clawback provision has a greater effect on the average annual benefit. Section IV of Appendix B presents more detailed information on the projected impact of the clawback provision on number of beneficiaries and total amounts payable.

The number of beneficiaries for the basic pension is expected to more than double over the next 26 years, growing from 4.1 million in 2004 to 8.9 million by the end of 2030. This is a direct result of the anticipated population aging and the retirement of the baby boom generation over that period. By contrast, after 2030, due to the relative stability in the growth of the population aged 65 and over and in the basic pension recipient rates, the number of beneficiaries is expected to continue to increase but at a slower pace until the end of the projection period. The number of basic pension beneficiaries is projected to reach a level of 11.3 million by 2075.

The number of GIS beneficiaries is expected to increase by 63% over the next 26 years, growing from 1.5 million in 2004 to 2.4 million by 2030. This results from the anticipated population aging and the retirement of the baby boom generation over that period. However, the increase in the number of GIS beneficiaries is smaller than for the basic pension as recipient rates for GIS benefits are expected to decrease by 24% over the same period. Each successive cohort of new retirees is assumed to be wealthier than the preceding one as retirement income increases in line with the rate of growth in wages, while the income limits for GIS are assumed to increase in line with prices. Over the projection period, this has the effect of reducing the number of individuals who might have otherwise been recipient of a benefit. After 2030, due to the relatively stable growth in the population aged 65 and over and the assumed further decrease in recipient rates, the number of beneficiaries is projected to decline to 1.8 million by 2075.

The number of Allowance beneficiaries is expected to increase by 24% over the next sixteen years, growing from 93,000 in 2004 to 115,000 by the end of 2020. The growth in the age group 60 to 64 (to which the Allowance applies) over the next sixteen years is partially offset by the assumption that the recipient rates for Allowance benefits will decrease by 28% over the same period. After 2020, the Allowance recipient rates continue to decrease while the growth in the population aged 60 to 64 stabilizes. As a result, the number of Allowance beneficiaries is expected to decline to 42,000 by 2075.

**Table 5 Beneficiaries (Historical)**

| Year | Number of Beneficiaries |                    |                  | Recipient Rates* |            |          |
|------|-------------------------|--------------------|------------------|------------------|------------|----------|
|      | OAS<br>(thousands)      | GIS<br>(thousands) | A<br>(thousands) | OAS<br>(%)       | GIS<br>(%) | A<br>(%) |
| 1966 | 1,199                   | -                  | -                | 98.1             | -          | -        |
| 1967 | 1,332                   | 662                | -                | 98.1             | 41.6       | -        |
| 1968 | 1,470                   | 760                | -                | 97.7             | 46.6       | -        |
| 1969 | 1,629                   | 803                | -                | 97.4             | 48.0       | -        |
| 1970 | 1,689                   | 816                | -                | 98.4             | 47.6       | -        |
| 1971 | 1,735                   | 932                | -                | 98.4             | 52.9       | -        |
| 1972 | 1,780                   | 998                | -                | 98.5             | 55.2       | -        |
| 1973 | 1,825                   | 1,058              | -                | 98.4             | 57.0       | -        |
| 1974 | 1,874                   | 1,069              | -                | 98.4             | 56.1       | -        |
| 1975 | 1,925                   | 1,069              | 70               | 98.3             | 54.6       | 7.8      |
| 1976 | 1,975                   | 1,084              | 71               | 97.6             | 53.6       | 7.8      |
| 1977 | 2,035                   | 1,112              | 73               | 97.4             | 53.2       | 7.9      |
| 1978 | 2,098                   | 1,127              | 74               | 97.3             | 52.3       | 8.0      |
| 1979 | 2,179                   | 1,164              | 74               | 97.7             | 52.2       | 8.0      |
| 1980 | 2,259                   | 1,191              | 75               | 98.0             | 51.7       | 7.9      |
| 1981 | 2,326                   | 1,232              | 77               | 97.8             | 51.8       | 7.8      |
| 1982 | 2,389                   | 1,228              | 81               | 97.8             | 50.3       | 7.8      |
| 1983 | 2,448                   | 1,229              | 86               | 98.0             | 49.2       | 8.0      |
| 1984 | 2,511                   | 1,246              | 89               | 97.9             | 48.6       | 8.0      |
| 1985 | 2,595                   | 1,290              | 91               | 97.9             | 48.7       | 8.1      |
| 1986 | 2,683                   | 1,316              | 139              | 98.0             | 48.1       | 12.2     |
| 1987 | 2,778                   | 1,336              | 140              | 97.9             | 47.1       | 12.2     |
| 1988 | 2,862                   | 1,342              | 135              | 97.8             | 45.8       | 11.6     |
| 1989 | 2,948                   | 1,339              | 128              | 97.4             | 44.2       | 10.9     |
| 1990 | 3,036                   | 1,325              | 121              | 97.3             | 42.4       | 10.3     |
| 1991 | 3,127                   | 1,309              | 115              | 97.2             | 40.7       | 9.6      |
| 1992 | 3,210                   | 1,300              | 110              | 97.4             | 39.4       | 9.2      |
| 1993 | 3,289                   | 1,313              | 108              | 97.6             | 39.0       | 8.9      |
| 1994 | 3,367                   | 1,340              | 109              | 97.9             | 39.0       | 9.0      |
| 1995 | 3,447                   | 1,338              | 108              | 98.2             | 38.1       | 8.9      |
| 1996 | 3,524                   | 1,341              | 101              | 98.5             | 37.5       | 8.3      |
| 1997 | 3,589                   | 1,364              | 100              | 98.2             | 37.3       | 8.3      |
| 1998 | 3,656                   | 1,368              | 97               | 98.2             | 36.7       | 8.0      |
| 1999 | 3,715                   | 1,372              | 97               | 98.1             | 36.2       | 7.9      |
| 2000 | 3,781                   | 1,363              | 95               | 98.1             | 35.4       | 7.6      |
| 2001 | 3,852                   | 1,360              | 93               | 98.2             | 34.7       | 7.2      |
| 2002 | 3,923                   | 1,404              | 92               | 98.3             | 35.2       | 6.9      |
| 2003 | 3,999                   | 1,450              | 92               | 98.5             | 35.7       | 6.6      |

\* The overall historical basic OAS pension recipient rates and number of beneficiaries are on a gross basis (i.e. before application of the clawback provision).



**Table 6 Beneficiaries (Projected)**

| Year | Number of Beneficiaries |                    |                  | Recipient Rates* |            |          |
|------|-------------------------|--------------------|------------------|------------------|------------|----------|
|      | OAS<br>(thousands)      | GIS<br>(thousands) | A<br>(thousands) | OAS<br>(%)       | GIS<br>(%) | A<br>(%) |
| 2004 | 4,078                   | 1,483              | 93               | 98.5             | 35.8       | 6.4      |
| 2005 | 4,162                   | 1,511              | 95               | 98.7             | 35.8       | 6.2      |
| 2006 | 4,259                   | 1,563              | 98               | 98.8             | 36.3       | 6.2      |
| 2007 | 4,359                   | 1,615              | 103              | 98.8             | 36.6       | 6.1      |
| 2008 | 4,476                   | 1,644              | 106              | 98.9             | 36.3       | 5.9      |
| 2009 | 4,593                   | 1,672              | 109              | 98.9             | 36.0       | 5.8      |
| 2010 | 4,723                   | 1,700              | 112              | 99.1             | 35.7       | 5.7      |
| 2011 | 4,864                   | 1,728              | 115              | 99.1             | 35.2       | 5.6      |
| 2012 | 5,056                   | 1,768              | 113              | 99.2             | 34.7       | 5.5      |
| 2013 | 5,244                   | 1,805              | 112              | 99.3             | 34.2       | 5.3      |
| 2014 | 5,425                   | 1,840              | 112              | 99.3             | 33.7       | 5.2      |
| 2015 | 5,611                   | 1,874              | 113              | 99.4             | 33.2       | 5.1      |
| 2016 | 5,800                   | 1,908              | 113              | 99.4             | 32.7       | 5.0      |
| 2017 | 5,991                   | 1,942              | 115              | 99.5             | 32.2       | 4.9      |
| 2018 | 6,193                   | 1,977              | 115              | 99.6             | 31.8       | 4.8      |
| 2019 | 6,406                   | 2,015              | 115              | 99.6             | 31.3       | 4.7      |
| 2020 | 6,629                   | 2,054              | 115              | 99.6             | 30.9       | 4.6      |
| 2021 | 6,853                   | 2,093              | 115              | 99.7             | 30.4       | 4.5      |
| 2022 | 7,085                   | 2,132              | 114              | 99.7             | 30.0       | 4.4      |
| 2023 | 7,320                   | 2,172              | 113              | 99.8             | 29.6       | 4.3      |
| 2024 | 7,555                   | 2,210              | 112              | 99.8             | 29.2       | 4.2      |
| 2025 | 7,793                   | 2,249              | 110              | 99.8             | 28.8       | 4.1      |
| 2026 | 8,031                   | 2,288              | 107              | 99.9             | 28.5       | 4.1      |
| 2027 | 8,259                   | 2,323              | 103              | 99.9             | 28.1       | 4.1      |
| 2028 | 8,489                   | 2,357              | 98               | 100.0            | 27.8       | 4.0      |
| 2029 | 8,704                   | 2,388              | 93               | 100.0            | 27.4       | 3.9      |
| 2030 | 8,896                   | 2,414              | 88               | 100.0            | 27.1       | 3.8      |
| 2031 | 9,050                   | 2,430              | 85               | 100.1            | 26.9       | 3.7      |
| 2032 | 9,172                   | 2,438              | 83               | 100.1            | 26.6       | 3.6      |
| 2033 | 9,280                   | 2,442              | 82               | 100.2            | 26.4       | 3.5      |
| 2034 | 9,381                   | 2,443              | 80               | 100.2            | 26.1       | 3.5      |
| 2035 | 9,479                   | 2,443              | 78               | 100.3            | 25.8       | 3.4      |
| 2040 | 9,801                   | 2,399              | 74               | 100.4            | 24.6       | 3.0      |
| 2045 | 10,058                  | 2,330              | 72               | 100.3            | 23.2       | 2.8      |
| 2050 | 10,346                  | 2,260              | 66               | 100.3            | 21.9       | 2.5      |
| 2055 | 10,591                  | 2,169              | 62               | 100.3            | 20.5       | 2.3      |
| 2060 | 10,895                  | 2,086              | 54               | 100.3            | 19.2       | 2.1      |
| 2065 | 11,080                  | 1,994              | 47               | 100.4            | 18.1       | 1.9      |
| 2070 | 11,162                  | 1,898              | 44               | 100.4            | 17.1       | 1.7      |
| 2075 | 11,269                  | 1,809              | 42               | 100.4            | 16.1       | 1.6      |

\* The overall projected basic OAS pension recipient rates and number of beneficiaries are on a gross basis (i.e. before application of the clawback provision). All recipient rates include benefits paid outside Canada and for this reason may exceed 100%.

### C. Expenditures and Average Annual Benefits

The historical and projected expenditures and average annual benefits by type are presented in Tables 7 and 8. Note that the amounts of OAS basic pension benefits presented in Tables 7 and 8 are on a gross basis and do not account for the clawback provision, which reduces the benefit by 15 cents for each dollar of income above a minimum threshold. In 2003, there were about 5% of OAS pensioners affected by the clawback provision, resulting in the repayment of about 3% of the total amount of the basic pensions payable. Section IV of Appendix B presents more detailed information on the projected impact of the clawback provision on the number of beneficiaries and total amounts payable.

Total basic pension expenditures are projected to increase from \$22 billion in 2004 to \$89 billion by 2030. The projected basic pension average annual benefit of \$5,378 in 2004 amounts to about 96% of the projected maximum annual OAS benefit for 2004. The average annual benefit is assumed to decrease to about 94% of the maximum or \$10,045 by 2030. The existence of partial benefits (introduced in 1977 for those with less than 40 years of residence) is assumed to put downward pressure on the average annual OAS benefit.

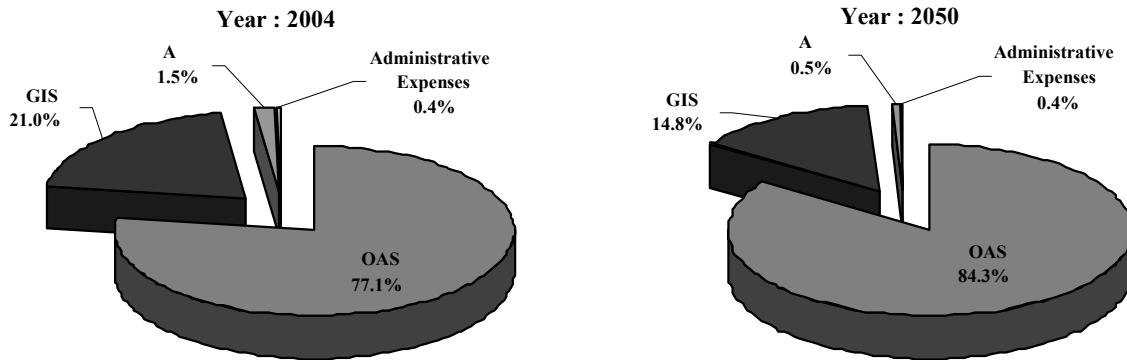
Total GIS expenditures are projected to increase from \$6 billion in 2004 to \$19 billion by 2030. The projected GIS overall average annual benefit is \$4,026 in 2004, which is about 60% of the projected maximum annual GIS single rate for 2004. In contrast to the basic pension, the overall distribution of the number of beneficiaries by type and level of benefit is assumed to remain relatively stable over the projection period. For this reason, the average benefit remains at about 60% of the maximum GIS single rate throughout the projection period and reaches \$7,957 by 2030.

Total Allowance expenditures are projected to increase from \$428 million in 2004 to \$843 million by 2030. The projected overall Allowance average annual benefit is \$4,615 in 2004, which is about 46% of the projected maximum regular annual benefit for 2004. The distribution of the number of beneficiaries by type of benefit is assumed to change over the projection period. The Allowance for the survivor benefit expressed as a proportion of total Allowance benefit is assumed to increase over the projection period. For this reason, the average benefit increases from about 46% of the maximum Allowance regular rate in 2004 to about 49% by 2030. The average annual Allowance benefit reaches \$9,573 by 2030.

Total benefit expenditures are the product of the number of beneficiaries and the relevant average benefit by age, sex, and benefit type and level. Projected total annual expenditures for benefits and administrative expenses are \$28 billion in 2004, rising to \$37 billion in 2010 and \$110 billion by 2030.

Finally, it is interesting to note the changing distribution of expenditures by type of benefit over the projection period, as shown in Chart 7 for 2004 and 2050. The basic pension benefits represent 77% of total expenditures in 2004 but by 2050 this share increases to 84% as the recipient rates for GIS and Allowance benefit decrease significantly over the same period.

**Chart 7 Analysis of Expenditures by Type**



#### D. Cost Ratios

With the program being financed through general revenues on a pay-as-you-go basis, it is useful to express its annual expenditures in relative terms rather than in dollar terms. For this reason, the expenditures are presented as cost ratios using three different measurement bases. The three bases retained are combined CPP/QPP contributory earnings, total employment earnings and gross domestic product (GDP). The details regarding how these measurement bases were projected is included in Appendix B of the report.

The GDP basis was derived from projected total employment earnings using the historical relationship between the two. Tables 9 and 10 present the historical and projected annual expenditures as a percentage of GDP.

The combined CPP/QPP contributory earnings basis was derived from CPP contributory earnings as projected under the 21<sup>st</sup> CPP Actuarial Report as at 31 December 2003 but adjusted to take into account QPP contributory earnings, using the historical relationship between the two. This measurement basis facilitates a direct comparison of the cost of the program with the costs of the CPP and QPP by using the same contributory basis. Tables 11 and 12 present the historical and projected annual expenditures as a percentage of CPP/QPP contributory earnings.

The total employment earnings basis is derived from the CPP total employment earnings as projected under the 21<sup>st</sup> CPP Actuarial Report as at 31 December 2003 but adjusted to account for Québec's total employment earnings. The adjustment is determined by using the historical relationship between total employment earnings as published by Statistics Canada and the total employment earnings applicable to Canada less Québec for the purpose of the Canada Pension Plan. Tables 13 and 14 present the historical and projected annual expenditures as a percentage of total employment earnings.

**Table 7 Expenditures and Average Annual Benefits (Historical)**

| Year | Expenditures* (\$ million) |       |     |                         |        | Average Annual Benefit* (\$) |       |       |
|------|----------------------------|-------|-----|-------------------------|--------|------------------------------|-------|-------|
|      | OAS <sup>1</sup>           | GIS   | A   | Administrative Expenses | Total  | OAS <sup>1</sup>             | GIS   | A     |
| 1966 | 1,007                      | -     | -   | 5                       | 1,012  | 840                          | -     | -     |
| 1967 | 1,119                      | 216   | -   | 7                       | 1,342  | 840                          | 326   | -     |
| 1968 | 1,260                      | 242   | -   | 7                       | 1,509  | 857                          | 318   | -     |
| 1969 | 1,424                      | 259   | -   | 9                       | 1,692  | 874                          | 322   | -     |
| 1970 | 1,611                      | 274   | -   | 9                       | 1,894  | 954                          | 336   | -     |
| 1971 | 1,668                      | 470   | -   | 12                      | 2,150  | 962                          | 504   | -     |
| 1972 | 1,761                      | 697   | -   | 9                       | 2,467  | 989                          | 698   | -     |
| 1973 | 2,130                      | 725   | -   | 8                       | 2,863  | 1,167                        | 686   | -     |
| 1974 | 2,519                      | 819   | -   | 9                       | 3,347  | 1,344                        | 766   | -     |
| 1975 | 2,883                      | 896   | 13  | 10                      | 3,802  | 1,498                        | 838   | 191   |
| 1976 | 3,249                      | 1,001 | 95  | 19                      | 4,364  | 1,645                        | 924   | 1,329 |
| 1977 | 3,563                      | 1,057 | 113 | 22                      | 4,755  | 1,751                        | 951   | 1,546 |
| 1978 | 4,009                      | 1,155 | 122 | 25                      | 5,311  | 1,911                        | 1,025 | 1,649 |
| 1979 | 4,537                      | 1,468 | 140 | 27                      | 6,172  | 2,082                        | 1,261 | 1,888 |
| 1980 | 5,147                      | 1,772 | 169 | 34                      | 7,122  | 2,279                        | 1,488 | 2,251 |
| 1981 | 5,918                      | 2,180 | 197 | 42                      | 8,337  | 2,544                        | 1,770 | 2,539 |
| 1982 | 6,804                      | 2,376 | 217 | 45                      | 9,442  | 2,848                        | 1,935 | 2,684 |
| 1983 | 7,504                      | 2,508 | 232 | 54                      | 10,298 | 3,065                        | 2,040 | 2,692 |
| 1984 | 8,077                      | 2,792 | 245 | 56                      | 11,170 | 3,217                        | 2,241 | 2,751 |
| 1985 | 8,696                      | 3,278 | 295 | 60                      | 12,329 | 3,351                        | 2,542 | 3,244 |
| 1986 | 9,346                      | 3,419 | 468 | 59                      | 13,292 | 3,484                        | 2,598 | 3,356 |
| 1987 | 10,070                     | 3,577 | 482 | 59                      | 14,188 | 3,625                        | 2,677 | 3,446 |
| 1988 | 10,774                     | 3,725 | 476 | 56                      | 15,031 | 3,764                        | 2,776 | 3,521 |
| 1989 | 11,579                     | 3,851 | 464 | 62                      | 15,956 | 3,927                        | 2,877 | 3,621 |
| 1990 | 12,484                     | 3,954 | 452 | 67                      | 16,957 | 4,112                        | 2,985 | 3,732 |
| 1991 | 13,545                     | 4,102 | 447 | 63                      | 18,157 | 4,331                        | 3,133 | 3,892 |
| 1992 | 14,292                     | 4,227 | 438 | 77                      | 19,034 | 4,452                        | 3,252 | 3,964 |
| 1993 | 14,872                     | 4,393 | 430 | 90                      | 19,785 | 4,522                        | 3,346 | 3,974 |
| 1994 | 15,403                     | 4,587 | 431 | 91                      | 20,512 | 4,574                        | 3,423 | 3,967 |
| 1995 | 15,832                     | 4,601 | 411 | 106                     | 20,950 | 4,593                        | 3,439 | 3,802 |
| 1996 | 16,433                     | 4,636 | 398 | 104                     | 21,571 | 4,663                        | 3,458 | 3,956 |
| 1997 | 16,944                     | 4,710 | 393 | 106                     | 22,153 | 4,721                        | 3,453 | 3,935 |
| 1998 | 17,470                     | 4,810 | 386 | 109                     | 22,775 | 4,779                        | 3,517 | 3,964 |
| 1999 | 17,903                     | 4,894 | 388 | 99                      | 23,284 | 4,819                        | 3,567 | 3,990 |
| 2000 | 18,669                     | 5,019 | 389 | 89                      | 24,166 | 4,937                        | 3,682 | 4,087 |
| 2001 | 19,508                     | 5,160 | 390 | 95                      | 25,153 | 5,065                        | 3,795 | 4,205 |
| 2002 | 20,318                     | 5,417 | 397 | 99                      | 26,231 | 5,179                        | 3,858 | 4,326 |
| 2003 | 21,217                     | 5,710 | 411 | 97                      | 27,435 | 5,306                        | 3,937 | 4,473 |

\* The historical basic OAS pension expenditures and average benefits are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada. The table includes revised estimates for administrative expenses for years 1994 to 2003.

**Table 8 Expenditures and Average Annual Benefits (Projected)**

| Year | Expenditures* (\$ million) |        |       |                         |         | Average Annual Benefit* (\$) |        |        |
|------|----------------------------|--------|-------|-------------------------|---------|------------------------------|--------|--------|
|      | OAS                        | GIS    | A     | Administrative Expenses | Total   | OAS                          | GIS    | A      |
| 2004 | 21,931                     | 5,970  | 428   | 105                     | 28,434  | 5,378                        | 4,026  | 4,615  |
| 2005 | 22,815                     | 6,188  | 445   | 109                     | 29,557  | 5,481                        | 4,095  | 4,691  |
| 2006 | 23,793                     | 6,693  | 482   | 115                     | 31,083  | 5,587                        | 4,281  | 4,900  |
| 2007 | 24,823                     | 7,224  | 528   | 121                     | 32,696  | 5,694                        | 4,472  | 5,109  |
| 2008 | 25,975                     | 7,467  | 553   | 126                     | 34,121  | 5,804                        | 4,541  | 5,222  |
| 2009 | 27,190                     | 7,722  | 579   | 131                     | 35,622  | 5,919                        | 4,618  | 5,328  |
| 2010 | 28,541                     | 7,998  | 611   | 137                     | 37,287  | 6,044                        | 4,706  | 5,438  |
| 2011 | 30,040                     | 8,303  | 639   | 144                     | 39,126  | 6,176                        | 4,804  | 5,564  |
| 2012 | 31,948                     | 8,685  | 647   | 153                     | 41,433  | 6,319                        | 4,912  | 5,731  |
| 2013 | 33,933                     | 9,084  | 657   | 162                     | 43,836  | 6,471                        | 5,032  | 5,881  |
| 2014 | 35,983                     | 9,499  | 675   | 171                     | 46,328  | 6,632                        | 5,161  | 6,041  |
| 2015 | 38,176                     | 9,932  | 699   | 181                     | 48,988  | 6,804                        | 5,301  | 6,213  |
| 2016 | 40,499                     | 10,390 | 724   | 191                     | 51,804  | 6,983                        | 5,446  | 6,392  |
| 2017 | 42,932                     | 10,864 | 753   | 202                     | 54,751  | 7,166                        | 5,595  | 6,572  |
| 2018 | 45,538                     | 11,366 | 781   | 213                     | 57,898  | 7,353                        | 5,749  | 6,762  |
| 2019 | 48,339                     | 11,902 | 804   | 226                     | 61,271  | 7,546                        | 5,907  | 6,962  |
| 2020 | 51,338                     | 12,469 | 824   | 239                     | 64,870  | 7,744                        | 6,069  | 7,167  |
| 2021 | 54,461                     | 13,051 | 847   | 253                     | 68,612  | 7,947                        | 6,236  | 7,371  |
| 2022 | 57,789                     | 13,663 | 866   | 268                     | 72,586  | 8,156                        | 6,408  | 7,588  |
| 2023 | 61,278                     | 14,299 | 883   | 283                     | 76,743  | 8,371                        | 6,584  | 7,807  |
| 2024 | 64,902                     | 14,954 | 900   | 299                     | 81,055  | 8,591                        | 6,765  | 8,033  |
| 2025 | 68,715                     | 15,635 | 909   | 315                     | 85,574  | 8,818                        | 6,951  | 8,269  |
| 2026 | 72,684                     | 16,337 | 908   | 333                     | 90,262  | 9,050                        | 7,141  | 8,512  |
| 2027 | 76,720                     | 17,043 | 901   | 350                     | 95,014  | 9,289                        | 7,337  | 8,752  |
| 2028 | 80,935                     | 17,770 | 884   | 368                     | 99,957  | 9,535                        | 7,538  | 9,017  |
| 2029 | 85,184                     | 18,497 | 862   | 387                     | 104,930 | 9,787                        | 7,744  | 9,292  |
| 2030 | 89,364                     | 19,205 | 843   | 405                     | 109,817 | 10,045                       | 7,957  | 9,573  |
| 2031 | 93,299                     | 19,862 | 838   | 422                     | 114,421 | 10,310                       | 8,175  | 9,841  |
| 2032 | 97,050                     | 20,476 | 843   | 438                     | 118,807 | 10,581                       | 8,399  | 10,112 |
| 2033 | 100,780                    | 21,071 | 851   | 454                     | 123,156 | 10,861                       | 8,630  | 10,398 |
| 2034 | 104,574                    | 21,661 | 858   | 470                     | 127,563 | 11,148                       | 8,867  | 10,700 |
| 2035 | 108,472                    | 22,258 | 862   | 487                     | 132,079 | 11,444                       | 9,110  | 11,019 |
| 2040 | 127,935                    | 25,025 | 940   | 569                     | 154,469 | 13,053                       | 10,433 | 12,716 |
| 2045 | 149,977                    | 27,835 | 1,057 | 662                     | 179,531 | 14,911                       | 11,945 | 14,680 |
| 2050 | 176,316                    | 30,926 | 1,112 | 771                     | 209,125 | 17,042                       | 13,682 | 16,966 |
| 2055 | 206,208                    | 34,013 | 1,205 | 893                     | 242,319 | 19,471                       | 15,679 | 19,590 |
| 2060 | 242,335                    | 37,473 | 1,218 | 1,040                   | 282,066 | 22,243                       | 17,963 | 22,641 |
| 2065 | 281,443                    | 41,032 | 1,237 | 1,198                   | 324,910 | 25,400                       | 20,574 | 26,163 |
| 2070 | 323,788                    | 44,717 | 1,337 | 1,368                   | 371,210 | 29,007                       | 23,564 | 30,210 |
| 2075 | 373,452                    | 48,813 | 1,477 | 1,568                   | 425,310 | 33,141                       | 26,985 | 34,906 |

\* The projected basic OAS pension expenditures and average benefit are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.

**Table 9 Expenditures as Percentage of GDP (Historical)**

| Year | Gross Domestic Product<br>(\$ billion) | Expenditures as % of Gross Domestic Product* |            |          |                                |              |
|------|--|--|------------|----------|--------------------------------|--------------|
|      |  | OAS<br>(%)                                   | GIS<br>(%) | A<br>(%) | Administrative Expenses<br>(%) | Total<br>(%) |
| 1966 | 65                                     | 1.55   | -          | -        | 0.01                           | 1.56         |
| 1967 | 70                                     | 1.61   | 0.31       | -        | 0.01                           | 1.93         |
| 1968 | 76                                     | 1.66   | 0.32       | -        | 0.01                           | 1.98         |
| 1969 | 84                                     | 1.70   | 0.31       | -        | 0.01                           | 2.02         |
| 1970 | 90                                     | 1.79   | 0.30       | -        | 0.01                           | 2.10         |
| 1971 | 98                                     | 1.69   | 0.48       | -        | 0.01                           | 2.18         |
| 1972 | 110                                    | 1.60   | 0.63       | -        | 0.01                           | 2.25         |
| 1973 | 129                                    | 1.65   | 0.56       | -        | 0.01                           | 2.22         |
| 1974 | 154                                    | 1.64   | 0.53       | -        | 0.01                           | 2.17         |
| 1975 | 174                                    | 1.66   | 0.52       | 0.01     | 0.01                           | 2.19         |
| 1976 | 200                                    | 1.62   | 0.50       | 0.05     | 0.01                           | 2.18         |
| 1977 | 221                                    | 1.61   | 0.48       | 0.05     | 0.01                           | 2.15         |
| 1978 | 245                                    | 1.64   | 0.47       | 0.05     | 0.01                           | 2.17         |
| 1979 | 280                                    | 1.62   | 0.53       | 0.05     | 0.01                           | 2.21         |
| 1980 | 314                                    | 1.64   | 0.56       | 0.05     | 0.01                           | 2.27         |
| 1981 | 360                                    | 1.64   | 0.60       | 0.05     | 0.01                           | 2.31         |
| 1982 | 380                                    | 1.79   | 0.63       | 0.06     | 0.01                           | 2.49         |
| 1983 | 411                                    | 1.82   | 0.61       | 0.06     | 0.01                           | 2.50         |
| 1984 | 450                                    | 1.80   | 0.62       | 0.05     | 0.01                           | 2.48         |
| 1985 | 486                                    | 1.79   | 0.67       | 0.06     | 0.01                           | 2.54         |
| 1986 | 513                                    | 1.82   | 0.67       | 0.09     | 0.01                           | 2.59         |
| 1987 | 559                                    | 1.80   | 0.64       | 0.09     | 0.01                           | 2.54         |
| 1988 | 613                                    | 1.76   | 0.61       | 0.08     | 0.01                           | 2.45         |
| 1989 | 658                                    | 1.76   | 0.59       | 0.07     | 0.01                           | 2.43         |
| 1990 | 680                                    | 1.84   | 0.58       | 0.07     | 0.01                           | 2.49         |
| 1991 | 685                                    | 1.98   | 0.60       | 0.07     | 0.01                           | 2.65         |
| 1992 | 700                                    | 2.04   | 0.60       | 0.06     | 0.01                           | 2.72         |
| 1993 | 727                                    | 2.05   | 0.60       | 0.06     | 0.01                           | 2.72         |
| 1994 | 771                                    | 2.00   | 0.60       | 0.06     | 0.01                           | 2.66         |
| 1995 | 810                                    | 1.95   | 0.57       | 0.05     | 0.01                           | 2.59         |
| 1996 | 837                                    | 1.96   | 0.55       | 0.05     | 0.01                           | 2.58         |
| 1997 | 883                                    | 1.92   | 0.53       | 0.04     | 0.01                           | 2.51         |
| 1998 | 915                                    | 1.91   | 0.53       | 0.04     | 0.01                           | 2.49         |
| 1999 | 982                                    | 1.82   | 0.50       | 0.04     | 0.01                           | 2.37         |
| 2000 | 1,077                                  | 1.73   | 0.47       | 0.04     | 0.01                           | 2.24         |
| 2001 | 1,108                                  | 1.76   | 0.47       | 0.04     | 0.01                           | 2.27         |
| 2002 | 1,158                                  | 1.75   | 0.47       | 0.03     | 0.01                           | 2.27         |
| 2003 | 1,219                                  | 1.74   | 0.47       | 0.03     | 0.01                           | 2.25         |

\* The historical basic OAS pension expenditures are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.

**Table 10 Expenditures as Percentage of GDP (Projected)**

| Year | Gross Domestic Product<br>(\$ billion) | Expenditures as % of Gross Domestic Product* |            |          |                                   | Total<br>(%) |
|------|--|--|------------|----------|-----------------------------------|--------------|
|      |  | OAS<br>(%)                                   | GIS<br>(%) | A<br>(%) | Administrative<br>Expenses<br>(%) |              |
| 2004 | 1,253                                  | 1.75   | 0.48       | 0.03     | 0.01                              | 2.27         |
| 2005 | 1,291                                  | 1.77   | 0.48       | 0.03     | 0.01                              | 2.29         |
| 2006 | 1,332                                  | 1.79   | 0.50       | 0.04     | 0.01                              | 2.33         |
| 2007 | 1,375                                  | 1.81   | 0.53       | 0.04     | 0.01                              | 2.38         |
| 2008 | 1,421                                  | 1.83   | 0.53       | 0.04     | 0.01                              | 2.40         |
| 2009 | 1,475                                  | 1.84   | 0.52       | 0.04     | 0.01                              | 2.42         |
| 2010 | 1,534                                  | 1.86   | 0.52       | 0.04     | 0.01                              | 2.43         |
| 2011 | 1,597                                  | 1.88   | 0.52       | 0.04     | 0.01                              | 2.45         |
| 2012 | 1,665                                  | 1.92   | 0.52       | 0.04     | 0.01                              | 2.49         |
| 2013 | 1,737                                  | 1.95   | 0.52       | 0.04     | 0.01                              | 2.52         |
| 2014 | 1,813                                  | 1.98   | 0.52       | 0.04     | 0.01                              | 2.56         |
| 2015 | 1,893                                  | 2.02   | 0.52       | 0.04     | 0.01                              | 2.59         |
| 2016 | 1,977                                  | 2.05   | 0.53       | 0.04     | 0.01                              | 2.62         |
| 2017 | 2,061                                  | 2.08   | 0.53       | 0.04     | 0.01                              | 2.66         |
| 2018 | 2,147                                  | 2.12   | 0.53       | 0.04     | 0.01                              | 2.70         |
| 2019 | 2,235                                  | 2.16   | 0.53       | 0.04     | 0.01                              | 2.74         |
| 2020 | 2,325                                  | 2.21   | 0.54       | 0.04     | 0.01                              | 2.79         |
| 2021 | 2,416                                  | 2.25   | 0.54       | 0.04     | 0.01                              | 2.84         |
| 2022 | 2,509                                  | 2.30   | 0.54       | 0.03     | 0.01                              | 2.89         |
| 2023 | 2,606                                  | 2.35   | 0.55       | 0.03     | 0.01                              | 2.94         |
| 2024 | 2,707                                  | 2.40   | 0.55       | 0.03     | 0.01                              | 2.99         |
| 2025 | 2,811                                  | 2.44   | 0.56       | 0.03     | 0.01                              | 3.04         |
| 2026 | 2,922                                  | 2.49   | 0.56       | 0.03     | 0.01                              | 3.09         |
| 2027 | 3,038                                  | 2.53   | 0.56       | 0.03     | 0.01                              | 3.13         |
| 2028 | 3,159                                  | 2.56   | 0.56       | 0.03     | 0.01                              | 3.16         |
| 2029 | 3,286                                  | 2.59   | 0.56       | 0.03     | 0.01                              | 3.19         |
| 2030 | 3,419                                  | 2.61   | 0.56       | 0.02     | 0.01                              | 3.21         |
| 2031 | 3,558                                  | 2.62   | 0.56       | 0.02     | 0.01                              | 3.22         |
| 2032 | 3,705                                  | 2.62   | 0.55       | 0.02     | 0.01                              | 3.21         |
| 2033 | 3,859                                  | 2.61   | 0.55       | 0.02     | 0.01                              | 3.19         |
| 2034 | 4,021                                  | 2.60   | 0.54       | 0.02     | 0.01                              | 3.17         |
| 2035 | 4,189                                  | 2.59   | 0.53       | 0.02     | 0.01                              | 3.15         |
| 2040 | 5,148                                  | 2.49   | 0.49       | 0.02     | 0.01                              | 3.00         |
| 2045 | 6,296                                  | 2.38   | 0.44       | 0.02     | 0.01                              | 2.85         |
| 2050 | 7,670                                  | 2.30   | 0.40       | 0.01     | 0.01                              | 2.73         |
| 2055 | 9,341                                  | 2.21   | 0.36       | 0.01     | 0.01                              | 2.59         |
| 2060 | 11,405                                 | 2.12   | 0.33       | 0.01     | 0.01                              | 2.47         |
| 2065 | 14,004                                 | 2.01   | 0.29       | 0.01     | 0.01                              | 2.32         |
| 2070 | 17,238                                 | 1.88   | 0.26       | 0.01     | 0.01                              | 2.15         |
| 2075 | 21,181                                 | 1.76   | 0.23       | 0.01     | 0.01                              | 2.01         |

\* The projected basic OAS pension expenditures are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.

**Table 11 Expenditures as Percentage of CPP/QPP Contributory Earnings (Historical)**

| CPP/QPP Contributory |                          | Expenditures as % of CPP/QPP Contributory Earnings* |            |          |                 |              |
|----------------------|--------------------------|---|------------|----------|-----------------|--------------|
| Year                 | Earnings<br>(\$ billion) | OAS<br>(%)  | GIS<br>(%) | A<br>(%) | Administrative  | Total<br>(%) |
|                      |                          |   |            |          | Expenses<br>(%) |              |
| 1966                 | 20                       | 4.95  | -          | -        | 0.03            | 4.98         |
| 1967                 | 23                       | 4.76  | 0.92       | -        | 0.03            | 5.71         |
| 1968                 | 26                       | 4.91  | 0.94       | -        | 0.03            | 5.88         |
| 1969                 | 27                       | 5.21  | 0.95       | -        | 0.03            | 6.19         |
| 1970                 | 29                       | 5.57  | 0.95       | -        | 0.03            | 6.55         |
| 1971                 | 31                       | 5.38  | 1.52       | -        | 0.04            | 6.94         |
| 1972                 | 34                       | 5.19  | 2.05       | -        | 0.03            | 7.27         |
| 1973                 | 38                       | 5.63  | 1.92       | -        | 0.02            | 7.57         |
| 1974                 | 46                       | 5.46  | 1.77       | -        | 0.02            | 7.25         |
| 1975                 | 54                       | 5.34  | 1.66       | 0.02     | 0.02            | 7.04         |
| 1976                 | 62                       | 5.26  | 1.62       | 0.15     | 0.03            | 7.07         |
| 1977                 | 69                       | 5.18  | 1.54       | 0.16     | 0.03            | 6.91         |
| 1978                 | 77                       | 5.21  | 1.50       | 0.16     | 0.03            | 6.91         |
| 1979                 | 89                       | 5.10  | 1.65       | 0.16     | 0.03            | 6.94         |
| 1980                 | 98                       | 5.23  | 1.80       | 0.17     | 0.04            | 7.24         |
| 1981                 | 115                      | 5.15  | 1.90       | 0.17     | 0.04            | 7.26         |
| 1982                 | 122                      | 5.59  | 1.95       | 0.18     | 0.04            | 7.76         |
| 1983                 | 130                      | 5.78  | 1.93       | 0.18     | 0.04            | 7.93         |
| 1984                 | 145                      | 5.59  | 1.93       | 0.17     | 0.04            | 7.72         |
| 1985                 | 159                      | 5.47  | 2.06       | 0.19     | 0.04            | 7.75         |
| 1986                 | 174                      | 5.36  | 1.96       | 0.27     | 0.03            | 7.62         |
| 1987                 | 186                      | 5.41  | 1.92       | 0.26     | 0.03            | 7.62         |
| 1988                 | 199                      | 5.40  | 1.87       | 0.24     | 0.03            | 7.54         |
| 1989                 | 214                      | 5.40  | 1.80       | 0.22     | 0.03            | 7.44         |
| 1990                 | 223                      | 5.60  | 1.77       | 0.20     | 0.03            | 7.60         |
| 1991                 | 228                      | 5.95  | 1.80       | 0.20     | 0.03            | 7.97         |
| 1992                 | 232                      | 6.17  | 1.82       | 0.19     | 0.03            | 8.21         |
| 1993                 | 237                      | 6.27  | 1.85       | 0.18     | 0.04            | 8.34         |
| 1994                 | 246                      | 6.25  | 1.86       | 0.17     | 0.04            | 8.33         |
| 1995                 | 255                      | 6.21  | 1.81       | 0.16     | 0.04            | 8.22         |
| 1996                 | 260                      | 6.32  | 1.78       | 0.15     | 0.04            | 8.30         |
| 1997                 | 267                      | 6.34  | 1.76       | 0.15     | 0.04            | 8.29         |
| 1998                 | 290                      | 6.03  | 1.66       | 0.13     | 0.04            | 7.86         |
| 1999                 | 304                      | 5.89  | 1.61       | 0.13     | 0.03            | 7.65         |
| 2000                 | 322                      | 5.80  | 1.56       | 0.12     | 0.03            | 7.50         |
| 2001                 | 336                      | 5.81  | 1.54       | 0.12     | 0.03            | 7.50         |
| 2002                 | 343                      | 5.93  | 1.58       | 0.12     | 0.03            | 7.65         |
| 2003                 | 357                      | 5.94  | 1.60       | 0.12     | 0.03            | 7.69         |

\* The historical basic OAS pension expenditures are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.



**Table 12 Expenditures as Percentage of CPP/QPP Contributory Earnings (Projected)**

| Year | CPP/QPP Contributory<br>Earnings<br>(\$ billion) | Expenditures as % of CPP/QPP Contributory Earnings* |            |          |                                   |              |
|------|--|---|------------|----------|-----------------------------------|--------------|
|      |  | OAS<br>(%)  | GIS<br>(%) | A<br>(%) | Administrative<br>Expenses<br>(%) | Total<br>(%) |
| 2004 | 369  | 5.95  | 1.62       | 0.12     | 0.03                              | 7.71         |
| 2005 | 381  | 5.98  | 1.62       | 0.12     | 0.03                              | 7.75         |
| 2006 | 396  | 6.02  | 1.69       | 0.12     | 0.03                              | 7.86         |
| 2007 | 411  | 6.03  | 1.76       | 0.13     | 0.03                              | 7.95         |
| 2008 | 428  | 6.06  | 1.74       | 0.13     | 0.03                              | 7.96         |
| 2009 | 446  | 6.10  | 1.73       | 0.13     | 0.03                              | 7.99         |
| 2010 | 465  | 6.14  | 1.72       | 0.13     | 0.03                              | 8.02         |
| 2011 | 485  | 6.20  | 1.71       | 0.13     | 0.03                              | 8.07         |
| 2012 | 507  | 6.30  | 1.71       | 0.13     | 0.03                              | 8.17         |
| 2013 | 530  | 6.40  | 1.71       | 0.12     | 0.03                              | 8.27         |
| 2014 | 556  | 6.48  | 1.71       | 0.12     | 0.03                              | 8.34         |
| 2015 | 582  | 6.56  | 1.71       | 0.12     | 0.03                              | 8.42         |
| 2016 | 610  | 6.64  | 1.70       | 0.12     | 0.03                              | 8.49         |
| 2017 | 639  | 6.71  | 1.70       | 0.12     | 0.03                              | 8.56         |
| 2018 | 668  | 6.81  | 1.70       | 0.12     | 0.03                              | 8.66         |
| 2019 | 698  | 6.92  | 1.70       | 0.12     | 0.03                              | 8.78         |
| 2020 | 729  | 7.04  | 1.71       | 0.11     | 0.03                              | 8.90         |
| 2021 | 760  | 7.17  | 1.72       | 0.11     | 0.03                              | 9.03         |
| 2022 | 792  | 7.30  | 1.73       | 0.11     | 0.03                              | 9.16         |
| 2023 | 825  | 7.43  | 1.73       | 0.11     | 0.03                              | 9.30         |
| 2024 | 860  | 7.55  | 1.74       | 0.10     | 0.03                              | 9.43         |
| 2025 | 895  | 7.68  | 1.75       | 0.10     | 0.04                              | 9.56         |
| 2026 | 932  | 7.80  | 1.75       | 0.10     | 0.04                              | 9.68         |
| 2027 | 972  | 7.89  | 1.75       | 0.09     | 0.04                              | 9.78         |
| 2028 | 1,013  | 7.99  | 1.75       | 0.09     | 0.04                              | 9.87         |
| 2029 | 1,056  | 8.06  | 1.75       | 0.08     | 0.04                              | 9.93         |
| 2030 | 1,101  | 8.12  | 1.74       | 0.08     | 0.04                              | 9.97         |
| 2031 | 1,148  | 8.13  | 1.73       | 0.07     | 0.04                              | 9.97         |
| 2032 | 1,198  | 8.10  | 1.71       | 0.07     | 0.04                              | 9.91         |
| 2033 | 1,251  | 8.06  | 1.68       | 0.07     | 0.04                              | 9.85         |
| 2034 | 1,305  | 8.01  | 1.66       | 0.07     | 0.04                              | 9.77         |
| 2035 | 1,362  | 7.96  | 1.63       | 0.06     | 0.04                              | 9.69         |
| 2040 | 1,687  | 7.58  | 1.48       | 0.06     | 0.03                              | 9.16         |
| 2045 | 2,078  | 7.22  | 1.34       | 0.05     | 0.03                              | 8.64         |
| 2050 | 2,546  | 6.92  | 1.21       | 0.04     | 0.03                              | 8.21         |
| 2055 | 3,117  | 6.62  | 1.09       | 0.04     | 0.03                              | 7.77         |
| 2060 | 3,822  | 6.34  | 0.98       | 0.03     | 0.03                              | 7.38         |
| 2065 | 4,709  | 5.98  | 0.87       | 0.03     | 0.03                              | 6.90         |
| 2070 | 5,811  | 5.57  | 0.77       | 0.02     | 0.02                              | 6.39         |
| 2075 | 7,155  | 5.22  | 0.68       | 0.02     | 0.02                              | 5.94         |

\* The projected basic OAS pension expenditures are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.

**Table 13 Expenditures as Percentage of Total Employment Earnings (Historical)**

| Year | Total Employment<br>Earnings<br>(\$ billion) | Expenditures as % of Total Employment Earnings* |            |          |                                   |              |
|------|--|---|------------|----------|-----------------------------------|--------------|
|      |  | OAS<br>(%)                                      | GIS<br>(%) | A<br>(%) | Administrative<br>Expenses<br>(%) | Total<br>(%) |
| 1966 | 31   | 3.21  | -          | -        | 0.02                              | 3.22         |
| 1967 | 35   | 3.22  | 0.62       | -        | 0.02                              | 3.86         |
| 1968 | 38   | 3.34  | 0.64       | -        | 0.02                              | 4.00         |
| 1969 | 42   | 3.38  | 0.61       | -        | 0.02                              | 4.01         |
| 1970 | 46   | 3.53  | 0.60       | -        | 0.02                              | 4.15         |
| 1971 | 50   | 3.33  | 0.94       | -        | 0.02                              | 4.30         |
| 1972 | 56   | 3.14  | 1.24       | -        | 0.02                              | 4.40         |
| 1973 | 65   | 3.30  | 1.12       | -        | 0.01                              | 4.44         |
| 1974 | 77   | 3.29  | 1.07       | -        | 0.01                              | 4.37         |
| 1975 | 89   | 3.24  | 1.01       | 0.01     | 0.01                              | 4.27         |
| 1976 | 102  | 3.17  | 0.98       | 0.09     | 0.02                              | 4.26         |
| 1977 | 113  | 3.15  | 0.93       | 0.10     | 0.02                              | 4.20         |
| 1978 | 123  | 3.27  | 0.94       | 0.10     | 0.02                              | 4.33         |
| 1979 | 138  | 3.29  | 1.06       | 0.10     | 0.02                              | 4.47         |
| 1980 | 156  | 3.29  | 1.13       | 0.11     | 0.02                              | 4.55         |
| 1981 | 180  | 3.29  | 1.21       | 0.11     | 0.02                              | 4.64         |
| 1982 | 192  | 3.55  | 1.24       | 0.11     | 0.02                              | 4.93         |
| 1983 | 200  | 3.75  | 1.25       | 0.12     | 0.03                              | 5.15         |
| 1984 | 215  | 3.75  | 1.30       | 0.11     | 0.03                              | 5.19         |
| 1985 | 232  | 3.75  | 1.41       | 0.13     | 0.03                              | 5.32         |
| 1986 | 247  | 3.78  | 1.38       | 0.19     | 0.02                              | 5.37         |
| 1987 | 269  | 3.75  | 1.33       | 0.18     | 0.02                              | 5.28         |
| 1988 | 295  | 3.65  | 1.26       | 0.16     | 0.02                              | 5.10         |
| 1989 | 319  | 3.63  | 1.21       | 0.15     | 0.02                              | 5.01         |
| 1990 | 333  | 3.74  | 1.19       | 0.14     | 0.02                              | 5.09         |
| 1991 | 339  | 4.00  | 1.21       | 0.13     | 0.02                              | 5.36         |
| 1992 | 343  | 4.17  | 1.23       | 0.13     | 0.02                              | 5.55         |
| 1993 | 347  | 4.28  | 1.27       | 0.12     | 0.03                              | 5.70         |
| 1994 | 356  | 4.33  | 1.29       | 0.12     | 0.03                              | 5.76         |
| 1995 | 366  | 4.32  | 1.26       | 0.11     | 0.03                              | 5.72         |
| 1996 | 376  | 4.37  | 1.23       | 0.11     | 0.03                              | 5.74         |
| 1997 | 398  | 4.26  | 1.18       | 0.10     | 0.03                              | 5.57         |
| 1998 | 419  | 4.17  | 1.15       | 0.09     | 0.03                              | 5.43         |
| 1999 | 445  | 4.02  | 1.10       | 0.09     | 0.02                              | 5.23         |
| 2000 | 484  | 3.86  | 1.04       | 0.08     | 0.02                              | 4.99         |
| 2001 | 505  | 3.86  | 1.02       | 0.08     | 0.02                              | 4.98         |
| 2002 | 522  | 3.90  | 1.04       | 0.08     | 0.02                              | 5.03         |
| 2003 | 538  | 3.94  | 1.06       | 0.08     | 0.02                              | 5.10         |

\* The historical basic OAS pension expenditures are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.

**Table 14 Expenditures as Percentage of Total Employment Earnings (Projected)**

| Year | Total Employment         | Expenditures as % of Total Employment Earnings* |            |          |                                   |              |
|------|--------------------------|---|------------|----------|-----------------------------------|--------------|
|      | Earnings<br>(\$ billion) | OAS<br>(%)                                      | GIS<br>(%) | A<br>(%) | Administrative<br>Expenses<br>(%) | Total<br>(%) |
| 2004 | 556                      | 3.95  | 1.07       | 0.08     | 0.02                              | 5.12         |
| 2005 | 574                      | 3.97  | 1.08       | 0.08     | 0.02                              | 5.15         |
| 2006 | 595                      | 4.00  | 1.13       | 0.08     | 0.02                              | 5.23         |
| 2007 | 616                      | 4.03  | 1.17       | 0.09     | 0.02                              | 5.30         |
| 2008 | 639                      | 4.06  | 1.17       | 0.09     | 0.02                              | 5.34         |
| 2009 | 664                      | 4.10  | 1.16       | 0.09     | 0.02                              | 5.37         |
| 2010 | 690                      | 4.13  | 1.16       | 0.09     | 0.02                              | 5.40         |
| 2011 | 719                      | 4.18  | 1.16       | 0.09     | 0.02                              | 5.45         |
| 2012 | 749                      | 4.26  | 1.16       | 0.09     | 0.02                              | 5.53         |
| 2013 | 781                      | 4.34  | 1.16       | 0.08     | 0.02                              | 5.61         |
| 2014 | 816                      | 4.41  | 1.16       | 0.08     | 0.02                              | 5.68         |
| 2015 | 852                      | 4.48  | 1.17       | 0.08     | 0.02                              | 5.75         |
| 2016 | 890                      | 4.55  | 1.17       | 0.08     | 0.02                              | 5.82         |
| 2017 | 928                      | 4.63  | 1.17       | 0.08     | 0.02                              | 5.90         |
| 2018 | 966                      | 4.71  | 1.18       | 0.08     | 0.02                              | 5.99         |
| 2019 | 1,006                    | 4.81  | 1.18       | 0.08     | 0.02                              | 6.09         |
| 2020 | 1,046                    | 4.91  | 1.19       | 0.08     | 0.02                              | 6.20         |
| 2021 | 1,087                    | 5.01  | 1.20       | 0.08     | 0.02                              | 6.31         |
| 2022 | 1,129                    | 5.12  | 1.21       | 0.08     | 0.02                              | 6.43         |
| 2023 | 1,173                    | 5.23  | 1.22       | 0.08     | 0.02                              | 6.54         |
| 2024 | 1,218                    | 5.33  | 1.23       | 0.07     | 0.02                              | 6.65         |
| 2025 | 1,265                    | 5.43  | 1.24       | 0.07     | 0.02                              | 6.76         |
| 2026 | 1,315                    | 5.53  | 1.24       | 0.07     | 0.03                              | 6.87         |
| 2027 | 1,367                    | 5.61  | 1.25       | 0.07     | 0.03                              | 6.95         |
| 2028 | 1,422                    | 5.69  | 1.25       | 0.06     | 0.03                              | 7.03         |
| 2029 | 1,479                    | 5.76  | 1.25       | 0.06     | 0.03                              | 7.10         |
| 2030 | 1,538                    | 5.81  | 1.25       | 0.05     | 0.03                              | 7.14         |
| 2031 | 1,601                    | 5.83  | 1.24       | 0.05     | 0.03                              | 7.15         |
| 2032 | 1,667                    | 5.82  | 1.23       | 0.05     | 0.03                              | 7.13         |
| 2033 | 1,737                    | 5.80  | 1.21       | 0.05     | 0.03                              | 7.09         |
| 2034 | 1,809                    | 5.78  | 1.20       | 0.05     | 0.03                              | 7.05         |
| 2035 | 1,885                    | 5.75  | 1.18       | 0.05     | 0.03                              | 7.01         |
| 2040 | 2,317                    | 5.52  | 1.08       | 0.04     | 0.02                              | 6.67         |
| 2045 | 2,833                    | 5.29  | 0.98       | 0.04     | 0.02                              | 6.34         |
| 2050 | 3,452                    | 5.11  | 0.90       | 0.03     | 0.02                              | 6.06         |
| 2055 | 4,203                    | 4.91  | 0.81       | 0.03     | 0.02                              | 5.76         |
| 2060 | 5,133                    | 4.72  | 0.73       | 0.02     | 0.02                              | 5.50         |
| 2065 | 6,302                    | 4.47  | 0.65       | 0.02     | 0.02                              | 5.16         |
| 2070 | 7,758                    | 4.17  | 0.58       | 0.02     | 0.02                              | 4.79         |
| 2075 | 9,532                    | 3.92  | 0.51       | 0.02     | 0.02                              | 4.46         |

\* The projected basic OAS pension expenditures are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.

## V. Conclusion

The retirement of the baby boomers over the next 30 years will increase the expenditures of the program. For this reason, total annual expenditures expressed as a percentage of the gross domestic product (GDP) are expected to grow from 2.3% in 2004 to a high of 3.2% in 2030. As each successive cohort of new retirees is assumed to be wealthier than the preceding one, recipient rates for GIS and Allowance will continue to decrease over the projection period. This drives the cost of the program down, with the result that annual expenditures are expected to fall to 2.0% of GDP by 2075.

A more pessimistic demographic outlook, based on the continuing downward trend in fertility rates and longer life expectancies combined with the amendment of Part 23 of Bill C-43 offset a better economic outlook, especially regarding labour force participation rates and for this reason the results presented in this report are somewhat similar to the ones presented in the previous triennial report.

The projected financial status presented in this report is based on the assumed demographic and economic outlook over the long term. Therefore it remains important to review the program's long-term financial status on a regular basis by making periodic actuarial reports. For this purpose, as required by the *Public Pensions Reporting Act*, the next review will be as at 31 December 2006.

## VI. Actuarial Opinion

In our opinion, considering that this actuarial report was prepared pursuant to the *Public Pensions Reporting Act*:

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

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice.



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Michel Montambeault, F.S.A., F.C.I.A.  
Senior Actuary



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Jean-Claude Ménard, F.S.A., F.C.I.A.  
Chief Actuary

## Appendix A – Summary of Plan Provisions

### I. Introduction

The *Old Age Security Act* came into force in December 1951. Since that time, it has been amended several times, the most recent occasion as a result of the introduction of Part 23 of Bill C-43 (increase in GIS and Allowance maximum rates) on 24 March 2005. The details of the cost impact of Part 23 of Bill C-43 can be found in the 6<sup>th</sup> OAS Actuarial Report supplementing the 5<sup>th</sup> Actuarial Report on the Old Age Security Program as at 31 December 2000.

Benefits provided under the *Old Age Security Act* include the basic pension, the Guaranteed Income Supplement (GIS), and the Allowance, which started being paid in 1952, 1967, and 1975, respectively. The Allowance for the survivor benefit started in 1985.

### II. Financing

All benefits provided under the *Old Age Security Act* are currently financed from federal general tax revenues.

### III. Basic Pension

The basic OAS pension is a monthly benefit available, on application, to anyone age 65 or over who meets the residence and legal status requirements specified in the *Old Age Security Act*.

#### A. Eligibility Conditions

To qualify for a basic OAS pension, a person must be 65 years of age or over, and

- must be a Canadian citizen or a legal resident of Canada on the day preceding the approval of his or her application; or
- if the person no longer lives in Canada, must have been a Canadian citizen or a legal resident of Canada on the day preceding the day he or she stopped living in Canada.

A minimum of 10 years of residence in Canada after reaching age 18 is required to receive a basic OAS pension in Canada. To receive the OAS pension outside the country, a person must have lived in Canada for a minimum of 20 years after reaching age 18. An international social security agreement may assist a person to meet the 10- and 20-year requirements.

#### B. Amount of Benefits

The amount of a person's pension is determined by how long he or she has lived in Canada, according to the following rules:

- A person who has lived in Canada, after reaching age 18, for periods that total at least 40 years may qualify for a full OAS pension.

- A person who has not lived in Canada for 40 years after reaching age 18 may still qualify for a full pension if, on 1 July 1977, he or she was 25 years of age or over, and
  - lived in Canada on that date, or
  - had lived in Canada before that date and after reaching age 18, or
  - possessed a valid immigration visa on that date.

In such cases, the individual must have lived in Canada for the 10 years immediately prior to the approval of the application for the pension. Absences during this 10-year period may be offset if, after reaching age 18, the applicant was present in Canada before those 10 years for a total period that was at least three times the length of absence. In this instance, however, the applicant must also have lived in Canada for at least one year immediately prior to the date of the approval of the application. For example, an absence of two years between the ages of 60 and 62 could be offset by six years of presence in Canada after age 18 and before reaching age 55.

- A person who cannot meet the requirements for the full OAS pension may qualify for a partial pension. A partial pension is earned at the rate of  $1/40^{\text{th}}$  of the full monthly pension for each complete year of residence in Canada after reaching age 18. Once a partial pension has been approved, it may not be increased as a result of additional years of residence in Canada. As an example, an individual with 20 complete years of residence in Canada at the time of application for the OAS pension would be entitled to 50% (or 20/40) of the maximum monthly OAS pension for the remainder of his/her lifetime.

The maximum monthly pension was \$471.76 during the first quarter of 2005. This rate is adjusted quarterly, as described in section VI below.

The amount of pension paid to persons with high incomes is reduced through a provision of the *Income Tax Act* often referred to as the “clawback” provision. For 2005, the reduction applies to persons whose total net annual income exceeds \$60,806 in 2005. OAS recovery tax deductions at source were introduced on 1 July 1996 and they are recalculated in July of each year based on the OAS recipient’s previous year’s net income. Since 2000, the income threshold is indexed upward in accordance with increases in the Consumer Price Index; prior to 2000 it was indexed at CPI less 3%. For every dollar of income above this limit, the amount of basic pension is reduced by 15 cents.

As an example, an OAS recipient with a net annual income of \$62,806 in 2005 would incur an annual reduction of \$300. The full 2005 annual basic OAS pension is thus eliminated when a pensioner’s net annual income is \$98,547 (estimated as of the first quarter of 2005 based on annualized OAS benefits of \$5,661.12) or above in 2005.

#### **IV. Guaranteed Income Supplement**

The GIS is a monthly benefit paid to residents of Canada who receive a basic OAS pension (either the full amount or a partial amount) and who have little or no other income.

Payment of the GIS may begin in the same month as payment of the basic pension. The amount of the benefit varies according to income (see below). Since 1999, most of those receiving GIS can continue to do so by filing their income tax returns, rather than making a new application each year. The amount of monthly payments may increase or decrease according to reported changes in a person's yearly income. Unlike the basic OAS pension, GIS is not subject to income tax. GIS is not payable outside Canada beyond a period of six months following the month of departure from Canada, regardless of how long the person previously lived in Canada.

##### **A. Eligibility Conditions**

To receive the GIS, a person must be receiving an OAS pension. Eligibility for GIS is re-determined every year based on the previous year's income. Starting 1 July 1999, income (as defined for purposes of the GIS and Allowance benefits under the *Old Age Security Act*) received in the previous year is used to calculate the amount of benefits paid during the period starting on 1 July of a calendar year and ending on 30 June of the following calendar year. However, if an individual or spouse or common law partner has retired or has suffered a loss of pension income, an estimate of income may be substituted for the income of the preceding year.

In general, income includes any other money which a person receives, such as a retirement pension from the Canada or Québec Pension Plan or a private (occupational) pension plan, a foreign pension, interest, dividends, rents or wages. Exclusions from income are any payments received under OAS, GIS, Allowance, Veteran's Disability, provincial or municipal supplement programs, or the Goods and Services Tax Credit (GST Credit).

Certain deductions are allowed. For example, from gross employment income it is possible to deduct all the employment deductions allowed for income tax purposes including a specific reduction for employment expenses (20% of total employment earnings – maximum \$500), contributions to the CPP/QPP and Unemployment Insurance premiums. Net income from self-employment is considered. Alimony allowances paid can be deducted (they can also be used to reduce other income).

The resulting estimated income of the person (or, the combined income of the person or his or her spouse or common-law partner) cannot exceed certain limits as will be described later.

Persons admitted to Canada as sponsored immigrants after 6 March 1996 and persons qualifying for benefits from 2001 onward are not eligible, generally speaking, to receive the GIS for the duration of the sponsorship, up to a maximum of ten years. Exceptions are made, however, if an immigrant's sponsor dies, is incarcerated for a period of more than six months, is convicted of a criminal offence relating to the sponsored individual, or undergoes personal bankruptcy.



## **B. Amount of Benefits**

The amount of the GIS to which a person is entitled depends on his or her length of residence in Canada, marital status and income. If the person is married or living in a common-law relationship, the combined income of the person and his or her spouse or common-law partner is taken into account in determining the amount of the GIS.

To be entitled to a full benefit, persons admitted to Canada after 6 March 1996 and persons qualifying for benefits from 2001 onward must have resided in Canada for at least 10 years after reaching age 18. If a person to whom either of these conditions applies has less than 10 years of residence, a partial benefit is payable provided, as noted in the previous section, that the person is not a sponsored immigrant who is still in the period of sponsorship. The partial benefit is calculated at the rate of 1/10<sup>th</sup> of the amount of the full benefit for each complete year of residence in Canada after age 18. The proportion payable is recalculated each year, taking into account additional residence in Canada during the previous year, building gradually to a full benefit after 10 years. The 10-year requirement for entitlement to a full benefit does not apply to persons who qualify for benefits before the year 2001 and who were permanent residents of Canada on or before 6 March 1996.

There are two rates of payment for a maximum GIS. The single rate applies to single individuals – including widowed, divorced or separated persons as well as individuals who have never married – and to persons for which their spouse or common law partner do not receive either the OAS pension or the Allowance. During the first quarter of 2005 the maximum monthly GIS single benefit is \$560.69.

The married rate applies both to legally married couples and couples living in common-law relationships, where either both spouses are OAS pensioners or where one spouse is eligible for the Allowance benefit. During the first quarter of 2005 the maximum monthly GIS married benefit is \$365.21.

The single rate is higher than the married rate reflecting the higher cost of living alone. However, each spouse in a couple or common law partner relationship is entitled to his or her own benefit, so the combined benefits for a couple are higher than those for a single person. These rates are adjusted quarterly, as described in section VI.

A special provision applies to persons who receive a partial OAS pension. In this case, the supplement is increased by the difference between the full OAS pension and the partial OAS pension in order to provide the same combined monthly pension and supplement to beneficiaries with the same level of income.

As an example, during the first quarter of 2005, a single person with no income who is entitled to a partial pension of \$117.94 (25% of the maximum monthly OAS pension of \$471.76) would be entitled to an additional supplement of \$353.82 for a total supplement of \$914.51 (i.e. \$560.69 plus \$353.82).

For a single, widowed, divorced or separated person, the maximum monthly GIS benefit is reduced by 50 cents for every dollar of monthly income (i.e. annual income divided by 12). For example, a monthly income of \$600 would reduce the maximum monthly GIS payable by \$300 to \$260.69 in the first quarter of 2005. In this case, the maximum allowable annual income before GIS stops being paid is \$13,464 in the fourth quarter of 2005.

If both spouses or common-law partners are receiving the basic OAS pension, the maximum monthly GIS of each person is reduced by 25 cents for every dollar of other combined monthly income (i.e. annual income divided by 12). For example, a couple with a monthly income of \$1,200 would reduce the maximum monthly GIS benefit payable by \$300 for each spouse to \$65.21 in the first quarter of 2005. In this case, the maximum allowable annual income before GIS stops being paid is \$17,568 in the first quarter of 2005.

A special provision applies in the case of a couple in which only one spouse is a pensioner and the other is not eligible for either the OAS pension or the Allowance. In this instance, the pensioner can receive the GIS at the higher rate paid to those who are single. Moreover, the maximum monthly GIS is reduced by 25 cents for every dollar of the couple's combined monthly income (i.e. annual income divided by 12), and the first reduction of 25 cents is made only when the combined monthly income of the couple reaches the monthly OAS pension plus \$4 (i.e. \$476 in the first quarter of 2005). As an example, a couple with a monthly income of \$1,676 would see their maximum monthly GIS benefit reduced by \$300 to \$260.69 in the last quarter of 2004. In this case, the maximum allowable annual income before GIS stops being paid is \$32,592 in the first quarter of 2005.

In the case of a couple in which only one spouse is a pensioner and the other is eligible for the Allowance the pensioner can receive the GIS at the rate paid to those who are married and the maximum monthly GIS is reduced at a reduction rate of 25 cents for every dollar of the couple's combined monthly income (i.e. annual income divided by 12). The first reduction of 25 cents is made only when the combined monthly income of the couple reaches four times the monthly OAS pension divided by three plus \$4 (i.e. income above \$632 in the first quarter of 2005). As an example, a couple with a monthly income of \$1,432 would see their maximum monthly GIS benefit reduced by \$200 for each spouse to \$165.21 in the first quarter of 2005. In this case, for the first quarter of 2005, the maximum allowable annual income before GIS stops being paid is \$32,592.

Part 23 of Bill C-43 amends the *Old Age Security Act* to increase the maximum monthly Guaranteed Income Supplement (GIS) benefits by \$36 for singles and for persons whose spouse or common-law partner receives neither the basic OAS pension nor the Allowance and, by \$29 each for persons who are legally married or are in a common-law relationship where both spouses or partners receive the basic OAS pension. Half of the increase is to take effect on 1 January 2006, and the remaining instalment is to take effect one year later on 1 January 2007.

## V. Allowance

The Allowance monthly benefit is designed to recognize the difficult circumstances faced by couples living on the pension of only one spouse as well as by many widowed persons. Since 1999, most of those receiving Allowance can continue to do so by filing their income tax returns, rather than making a new application each year. Starting 1 July 1999, income (as defined for purposes of the GIS and Allowance benefits under the Old Age Security Act) received in the previous calendar year is used to calculate the amount of benefits paid during the period starting on 1 July of a calendar year and ending on 30 June of the following calendar year. Allowance benefits are not considered as income for income tax purposes. Similarly to the GIS benefit, Allowance benefits are not payable outside Canada beyond a period of six months following the month of departure from Canada, regardless of how long the person previously lived in Canada.

### A. Eligibility Conditions

The Allowance may be paid to the spouse or common-law partner of a senior receiving OAS and GIS, or to a survivor, who is between the ages of 60 and 64 and who has lived in Canada for at least 10 years after reaching age 18. An applicant must also be a Canadian citizen or a legal resident of Canada on the day preceding the approval of the application. To qualify for a benefit, the combined yearly income of the applicant and the spouse or common-law partner, or the annual income of the survivor, cannot exceed certain limits. For a couple, the basic pension and GIS benefits are not included in their combined yearly income.

The Allowance stops being paid when the person becomes eligible for a basic pension at age 65, leaves Canada for more than six months, or dies. For a couple, the Allowance stops being paid if the older spouse or common-law partner ceases to be eligible for the GIS or if the spouses separate or divorce or dissolve their common-law partnership. In addition, in the case of survivors, the Allowance ceases if the person remarries. Sponsored immigrants are subject to the same conditions regarding eligibility as are described in the preceding section concerning the GIS.

### B. Amount of Benefits

The Allowance is an income-tested benefit. Like the GIS, if the person is married or living in a common-law relationship, the combined income of the person and his or her spouse or common-law partner is taken into account in determining the amount of the Allowance. In addition, to be entitled to the full Allowance, persons admitted to Canada after 6 March 1996 and persons qualifying for benefits from 2001 onward must have resided in Canada for at least 10 years after reaching age 18. If a person to whom either of these conditions applies has less than 10 years of residence, a partial Allowance is payable, calculated at the rate of  $1/10^{\text{th}}$  of the amount of the full Allowance for each complete year of residence in Canada after age 18. The proportion payable is recalculated each year, taking into account additional residence in Canada during the previous year, building gradually to a full Allowance after 10 years. The 10-year requirement for entitlement to a full Allowance does not apply to persons who qualify

for benefits before the year 2001 and who were permanent residents of Canada on or before 6 March 1996.

The maximum amount payable to the spouse of a pensioner under the regular Allowance benefit is equal to the combination of a full OAS pension and the maximum GIS at the married rate. This amount was \$836.97 during the first quarter of 2005. Since July 1984, the maximum amount payable under the survivor Allowance benefit is higher than under the regular Allowance benefit recognizing the higher cost of living alone. The maximum monthly survivor Allowance amount was \$924.04 during the first quarter of 2005.

In the first quarter of 2005, the OAS-equivalent portion of the maximum monthly Allowance benefit is reduced at a rate of 75 cents for every dollar of the person's or couple's monthly income (i.e. annual income divided by 12) until this portion is reduced to zero when monthly income reaches \$632. Up to this level of income the GIS portion remains payable at maximum. Under the regular Allowance benefit, both the GIS-equivalent portion of the Allowance and the pensioner's GIS are then reduced by 25 cents for every additional dollar of the couple's combined monthly income, i.e., in this case no Allowance benefit becomes payable if the annual income exceeds \$25,152 in the first quarter of 2005. For the survivor Allowance benefit, the GIS-equivalent portion is then reduced by 50 cents for every additional dollar of monthly income, i.e., in this case, for the first quarter of 2005, no survivor Allowance benefit becomes payable if annual income exceeds \$18,456.

Part 23 of Bill C-43 amends the *Old Age Security Act* to increase the maximum monthly regular Allowance benefits by \$36 and the Allowance for the Survivor Benefits by \$29. Half of the increase is to take effect on 1 January 2006, and the remaining instalment is to take effect one year later on 1 January 2007.

## **VI. Inflation Adjustments**

All maximum benefit amounts under the *Old Age Security Act* are adjusted at the beginning of each calendar quarter in line with changes in the Consumer Price Index (CPI). However, if the CPI decreases, benefit amounts do not decrease, but are held constant until the CPI resumes increasing.

## **Appendix B – Assumptions and Methods**

### **I. Introduction**

This section describes the assumptions and methods underlying the financial projections in Section IV of the report. The future cash flows and cost ratios are over a long period of time, i.e. 2004 to 2075, and depend on assumptions such as fertility, mortality, migration, labour force, unemployment rate and inflation. These assumptions form the basis for the projections of future expenditures and cost measurement bases.

Although the economic and demographic assumptions have been developed using the best available information, the resulting estimates should be interpreted with caution. These estimates are not intended to be predictions of the future financial status of the program but, rather, to be indicators of the expected trend under certain economic and demographic conditions. To the extent applicable, these assumptions are consistent with the best-estimate assumptions used in the Twenty-First Canada Pension Plan Actuarial Report as at 31 December 2003.

### **II. Demographic Projections**

Both the historical and projected population of Canada are required for the calculation of future benefits. The population of Canada as at 1 July 2003 is used as a starting point. The population is then projected by age and sex from one year to the next by adding births and net migrants and subtracting deaths. By applying the fertility, mortality and migration assumptions to the starting population, the annual numbers of births, deaths and net migrants were developed.

#### **A. Initial Population as at 1 July 2003**

The starting point for the demographic projections is the most recent Statistics Canada population estimates as at 1 July 2003 for Canada, by age and sex. The estimates are based on the 2001 census and are adjusted for the census undercount.

#### **B. Fertility Rates**

The fertility rate for a given age and year is the average number of live births per female of that age during that year. The total fertility rate for a year is the average number of children that would be born to a woman in her lifetime if she experienced the age-specific fertility rates observed in, or assumed for, that year.

Total fertility rates have declined significantly over the last 50 years, from a high of about 4.0 in the late 1950s to recent lows of about 1.5 in the late 1990s. The total fertility rate increased briefly over the early 1990s to reach levels of about 1.70. Although, the total fertility rate averaged about 1.62 for Canada over the last two decades, in 2001 it stood at 1.51 for Canada. These variations in the total fertility rate have resulted from changes in many factors, including social attitudes and economic conditions.

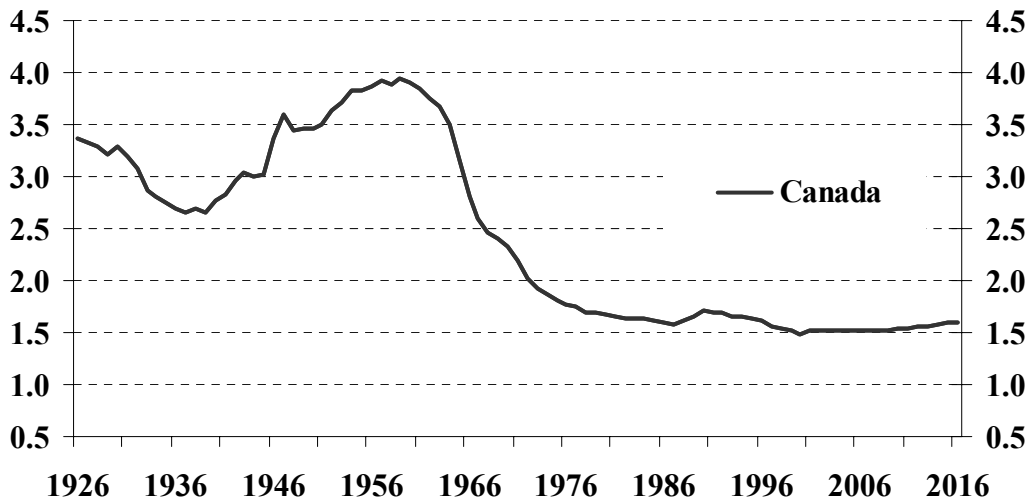
In this report, it was assumed that the total fertility rate from 2016 onward would be 1.60 for Canada. This assumed ultimate rate reflects historical trends in fertility by age group over the last 15 years. It is slightly higher than the most recently observed rate. A small increase in the total fertility rate is expected over the medium-term horizon because of continued trends in women having their first child at a later age due to increased labour force participation, later marriages and longer stays in the education system. Economic conditions are also assumed to improve over the medium term and could help families plan for additional children.

Finally, in accordance with the experience over the last 25 years, the assumed ratio of male to female newborns was maintained at 1.056. Table 15 and Chart 8 below show the historical and projected age-specific and total fertility rates.

**Table 15 Fertility Rates**

| Year         | Annual Fertility Rates by Age Group<br>(per 1,000 women) |       |       |       |       |       |       | Total<br>Fertility Rate<br>Per Woman |
|--------------|--|-------|-------|-------|-------|-------|-------|--------------------------------------|
|              | 15-19  | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 |                                      |
| <b>2004</b>  | 16.2   | 53.3  | 93.2  | 94.4  | 38.2  | 6.6   | 0.3   | 1.51                                 |
| <b>2005</b>  | 16.2   | 52.3  | 91.7  | 95.8  | 39.1  | 6.8   | 0.3   | 1.51                                 |
| <b>2006</b>  | 16.2   | 51.4  | 90.1  | 97.3  | 40.0  | 6.9   | 0.3   | 1.51                                 |
| <b>2007</b>  | 16.2   | 51.4  | 88.5  | 98.8  | 40.9  | 7.1   | 0.3   | 1.52                                 |
| <b>2008</b>  | 16.2   | 51.4  | 87.0  | 100.3 | 41.8  | 7.3   | 0.3   | 1.52                                 |
| <b>2009</b>  | 16.2   | 51.4  | 85.4  | 101.8 | 42.6  | 7.4   | 0.4   | 1.53                                 |
| <b>2010</b>  | 16.2   | 51.4  | 83.9  | 103.3 | 43.5  | 7.6   | 0.4   | 1.53                                 |
| <b>2011</b>  | 16.2   | 51.4  | 82.3  | 104.8 | 44.4  | 7.8   | 0.4   | 1.54                                 |
| <b>2012</b>  | 16.2   | 51.4  | 82.3  | 106.3 | 45.3  | 7.9   | 0.4   | 1.55                                 |
| <b>2013</b>  | 16.2   | 51.4  | 82.3  | 107.7 | 46.2  | 8.1   | 0.4   | 1.56                                 |
| <b>2014</b>  | 16.2   | 51.4  | 82.3  | 109.2 | 47.1  | 8.3   | 0.4   | 1.57                                 |
| <b>2015</b>  | 16.2   | 51.4  | 82.3  | 110.7 | 48.0  | 8.4   | 0.4   | 1.59                                 |
| <b>2016+</b> | 16.2   | 51.4  | 82.3  | 112.2 | 48.9  | 8.6   | 0.4   | 1.60                                 |

**Chart 8 Total Fertility Rate**



### C. Mortality

The starting point for mortality rate projections for this report is the mortality rates from the Statistics Canada publication “Life Tables, Canada, provinces and territories, 1995-1997”. According to these tables, life expectancies at birth for males and females in Canada were 75.4 and 81.2 years, respectively. The 2000 to 2002 Life Tables were not yet available for this report.

To reflect anticipated sustained improvements in life expectancy the 1995 to 1997 mortality rates were projected to 2001 using the actual improvements in mortality experienced between 1996 and 2001. This approach produced life expectancies at birth of 77.1 years for males and 82.2 for females. The life expectancies at age 65 are 17.1 years and 20.6 years for males and females, respectively. This compares well with figures published by Statistics Canada for 2001. Mortality rates thus obtained for 2001 were then projected to the end of the projection period using the following annual rates of mortality improvement.

For 2002 to 2006, the annual rates of mortality improvement, varying by age and sex, were set equal to the average annual improvement rates experienced in Canada over the period 1991 to 2001. Improvement rates for years 2007 to 2025 were obtained by linear interpolation between:

- the improvement rates of year 2006, and
- the fixed improvement rates described below in respect of the period 2026 and thereafter.

For 2026 and subsequent years, the assumed annual rates of mortality improvement vary by age and sex only and not by calendar year. These ultimate rates were derived from an analysis of the Canadian and U.S. experience over the last century and are generally consistent with the Alternative II assumption used in the 2003 Old-Age and Survivors Insurance and Disability Insurance Trustees Report. Table 16 shows the assumed initial (2002 to 2006) and ultimate (2026+) annual mortality improvement rates.

**Table 16 Annual Mortality Improvement Rates for Canada**

| Age          | Males     |       | Females   |       |
|--------------|-----------|-------|-----------|-------|
|              | 2002-2006 | 2026+ | 2002-2006 | 2026+ |
|              | %         | %     | %         | %     |
| <b>0</b>     | 2.25      | 1.35  | 2.50      | 1.25  |
| <b>1-14</b>  | 3.89      | 0.95  | 3.36      | 0.85  |
| <b>15-44</b> | 3.13      | 0.80  | 1.51      | 0.70  |
| <b>45-64</b> | 2.50      | 0.65  | 1.64      | 0.55  |
| <b>65-84</b> | 1.80      | 0.50  | 1.06      | 0.50  |
| <b>85-99</b> | 0.11      | 0.40  | 0.03      | 0.40  |

**Table 17 Mortality Rates**  
 (annual deaths per 1,000 people)

| Age       | Males  |       |       |       | Females |       |       |       |
|-----------|--------|-------|-------|-------|---------|-------|-------|-------|
|           | 2004   | 2025  | 2050  | 2075  | 2004    | 2025  | 2050  | 2075  |
| <b>0</b>  | 4.97   | 3.36  | 2.40  | 1.71  | 4.27    | 2.83  | 2.07  | 1.51  |
| <b>10</b> | 0.09   | 0.05  | 0.04  | 0.03  | 0.09    | 0.05  | 0.04  | 0.04  |
| <b>20</b> | 0.76   | 0.51  | 0.41  | 0.34  | 0.28    | 0.22  | 0.19  | 0.16  |
| <b>30</b> | 0.86   | 0.52  | 0.42  | 0.35  | 0.37    | 0.28  | 0.24  | 0.20  |
| <b>40</b> | 1.48   | 1.01  | 0.83  | 0.68  | 0.87    | 0.73  | 0.61  | 0.52  |
| <b>50</b> | 3.27   | 2.35  | 2.00  | 1.70  | 2.14    | 1.69  | 1.47  | 1.28  |
| <b>60</b> | 8.73   | 5.96  | 5.06  | 4.30  | 5.47    | 4.24  | 3.69  | 3.22  |
| <b>65</b> | 14.82  | 10.38 | 9.02  | 7.84  | 8.85    | 7.12  | 6.25  | 5.49  |
| <b>70</b> | 24.35  | 17.98 | 15.87 | 14.00 | 14.26   | 11.98 | 10.57 | 9.32  |
| <b>75</b> | 39.22  | 30.18 | 26.63 | 23.49 | 23.63   | 19.73 | 17.40 | 15.35 |
| <b>80</b> | 64.32  | 52.77 | 46.55 | 41.07 | 41.25   | 35.24 | 31.09 | 27.43 |
| <b>85</b> | 104.55 | 94.10 | 84.28 | 75.48 | 73.52   | 68.11 | 61.00 | 54.63 |

The projected mortality rates in Table 17 indicate a continuous decrease of mortality rates over the long term. For example, the mortality rate at age 65 for males is expected to reduce from 14.8 per thousand in 2004 to 7.8 per thousand by 2075. The gap in mortality rates between males and females is also expected to decrease over the projection period.



For 2004 to 2075, Canadian life expectancy at birth is projected to grow from 77.8 to 83.4 years for males and from 82.5 to 86.5 years for females. A narrowing of the gap between male and female life expectancies has been observed over the last 20 to 25 years in Canada. The yearly increase in life expectancies in the early years of the projection reflects the significant increase observed over the last 25 years. Thereafter, there is a projected slowdown in the increase in life expectancies consistent with the low rate of improvement in mortality assumed for years 2026 and thereafter.

Table 18 shows the resulting Canadian life expectancies at various ages for specified calendar years, assuming that the mortality rates of each such year will remain unchanged thereafter (without future improvements). Table 19 is similar to Table 18, the only difference being that it takes into account the assumed mortality improvement after the specified calendar year (with future improvements). Given the continuing trend to greater longevity, Table 19 is considered to be more realistic than Table 18.

**Table 18 Life Expectancies for Canada, without improvements after the year shown\***

| Age | Males |      |      |      | Females |      |      |      |
|-----|-------|------|------|------|---------|------|------|------|
|     | 2004  | 2025 | 2050 | 2075 | 2004    | 2025 | 2050 | 2075 |
| 0   | 77.8  | 80.7 | 82.0 | 83.4 | 82.5    | 84.1 | 85.3 | 86.5 |
| 10  | 68.3  | 71.0 | 72.3 | 73.6 | 73.0    | 74.4 | 75.6 | 76.7 |
| 20  | 58.5  | 61.1 | 62.4 | 63.7 | 63.1    | 64.5 | 65.6 | 66.7 |
| 30  | 48.9  | 51.4 | 52.7 | 53.9 | 53.3    | 54.7 | 55.8 | 56.8 |
| 40  | 39.4  | 41.7 | 42.9 | 44.1 | 43.5    | 44.9 | 45.9 | 47.0 |
| 50  | 30.1  | 32.3 | 33.4 | 34.5 | 34.0    | 35.3 | 36.3 | 37.3 |
| 60  | 21.4  | 23.3 | 24.3 | 25.3 | 25.0    | 26.1 | 27.1 | 28.0 |
| 65  | 17.5  | 19.1 | 20.0 | 20.9 | 20.8    | 21.7 | 22.6 | 23.5 |
| 70  | 13.9  | 15.2 | 16.0 | 16.8 | 16.8    | 17.6 | 18.4 | 19.2 |
| 75  | 10.8  | 11.7 | 12.4 | 13.1 | 13.1    | 13.8 | 14.5 | 15.2 |
| 80  | 8.0   | 8.6  | 9.2  | 9.8  | 9.8     | 10.3 | 10.9 | 11.5 |
| 85  | 5.9   | 6.1  | 6.6  | 7.1  | 7.1     | 7.3  | 7.8  | 8.3  |

\* These are calendar year life expectancies based on the mortality rates of the given attained year.

**Table 19 Life Expectancies for Canada, with improvements\***

| Age | Males |      |      |      | Females |      |      |      |
|-----|-------|------|------|------|---------|------|------|------|
|     | 2004  | 2025 | 2050 | 2075 | 2004    | 2025 | 2050 | 2075 |
| 0   | 82.9  | 84.2 | 85.5 | 86.8 | 86.3    | 87.4 | 88.6 | 89.7 |
| 10  | 72.9  | 74.0 | 75.3 | 76.5 | 76.3    | 77.3 | 78.4 | 79.5 |
| 20  | 62.5  | 63.7 | 64.9 | 66.2 | 66.0    | 66.9 | 68.1 | 69.1 |
| 30  | 52.3  | 53.4 | 54.7 | 55.9 | 55.7    | 56.6 | 57.7 | 58.8 |
| 40  | 42.1  | 43.3 | 44.5 | 45.6 | 45.4    | 46.4 | 47.5 | 48.6 |
| 50  | 32.2  | 33.4 | 34.5 | 35.6 | 35.4    | 36.4 | 37.5 | 38.5 |
| 60  | 22.7  | 24.0 | 25.0 | 26.0 | 25.9    | 26.8 | 27.8 | 28.8 |
| 65  | 18.4  | 19.6 | 20.5 | 21.4 | 21.4    | 22.3 | 23.2 | 24.1 |
| 70  | 14.5  | 15.5 | 16.4 | 17.2 | 17.2    | 18.0 | 18.8 | 19.7 |
| 75  | 11.0  | 11.9 | 12.7 | 13.4 | 13.3    | 14.0 | 14.8 | 15.5 |
| 80  | 8.1   | 8.8  | 9.4  | 10.0 | 9.9     | 10.4 | 11.1 | 11.7 |
| 85  | 5.9   | 6.2  | 6.7  | 7.2  | 7.1     | 7.4  | 7.9  | 8.4  |

\* These are cohort life expectancies that take into account future improvements in mortality and therefore differ from calendar year life expectancies, which are based on the mortality rates of the given attained year.

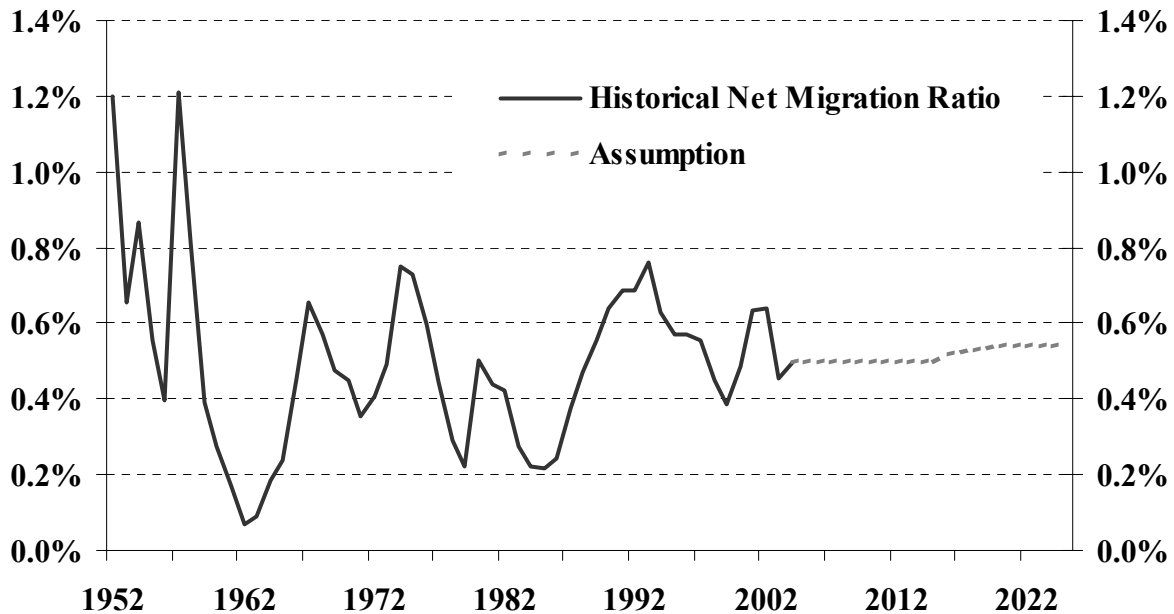
#### **D. Migration**

Immigration and emigration are generally recognized to be volatile parameters of future population growth, since they are subject to a variety of demographic, economic, social and political factors. During the period from 1972 to 2003, annual immigration to Canada varied from 84,000 to 267,000, annual emigration from Canada is estimated to have fluctuated between 40,000 and 83,000, and the annual numbers of returning Canadians have fluctuated between 14,000 and 39,000. Chart 9 below shows the net migration experience of the last half-century.

For 2004 to 2015, the net migration rate is assumed at a level of 0.50% of the population, which is the average experienced over the last 30 years. For 2015 to 2020, the ratio is gradually increased from 0.50% to 0.54% to take into account the expected labour shortage and then remains at that level thereafter. The ultimate level of 0.54% corresponds to the average over the last 15 to 20 years.

The distributions of immigrants, emigrants and returning Canadians by age and sex used for the demographic projections were taken from Statistics Canada data averaged over the period 1999 to 2003.

**Chart 9 Net Migration as % of Population**



**E. Projected Population and its Characteristics**

The population of Canada as at 1 July 2003 is 31.6 million. Table 20 presents the projected population of Canada as at 1 July for selected years. The population reaching age 65 in any given year is representative of the expected number of new OAS beneficiaries coming into pay each year and this population is expected to more than double over the next 21 years growing from 251,000 in 2004 to 515,000 in 2025. Chart 10 shows the evolution of the total population for Canada and of those aged 20 to 64 from 1975 up to 2075.

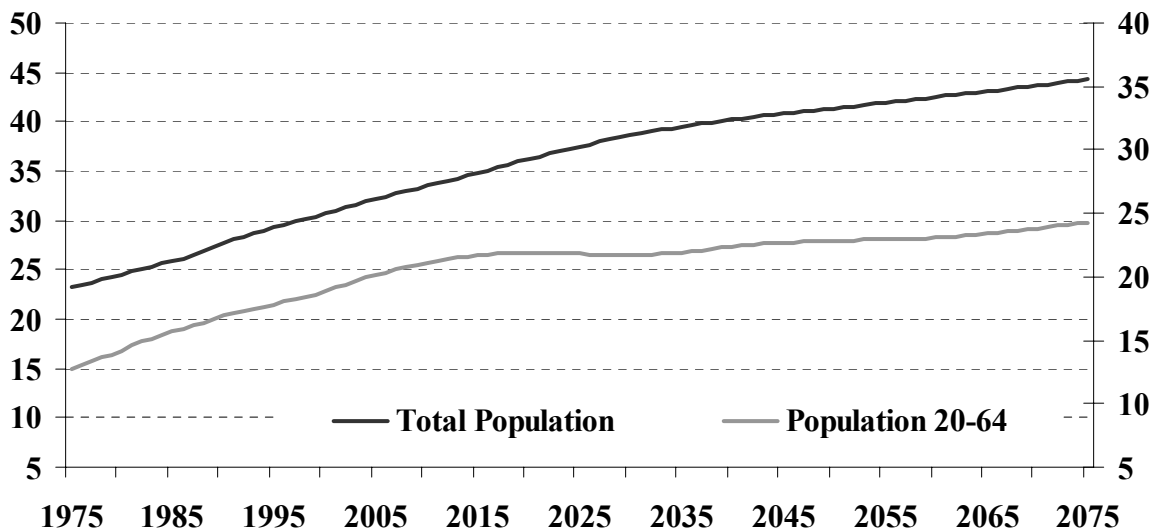
Table 21 shows the variations in the relative size of various age groups throughout the projection period. The proportion of people aged 65 and over is expected to almost double from 13.0% to 25.3% over the projection period. The number of people aged 65 and over as a proportion of people aged 20 to 64 more than doubles over the same period, from 20.8% to 46.3%. This proportion significantly affects the ratio of benefits to GDP.

Table 22 shows the components of population growth, namely the projected number of births plus net migrants less the expected deaths for each year to 2075. Chart 11 presents these figures graphically until 2050. Over the next 20 years, the population of Canada is projected to grow at about 0.9% per year. The annual growth slows to about 0.6% between 2020 and 2040 and to 0.4% thereafter. The population of Canada is expected to reach 36.2 million by 2075.

**Table 20 Population by Age**  
 (thousands)

| Year | 0-17  | 18-69  | 70+   | 0-19  | 20-64  | 65+    | Total  | Reaching Age 65 |
|------|-------|--------|-------|-------|--------|--------|--------|-----------------|
| 2004 | 6,982 | 21,947 | 2,968 | 7,844 | 19,914 | 4,138  | 31,896 | 251             |
| 2005 | 6,941 | 22,196 | 3,024 | 7,791 | 20,152 | 4,219  | 32,162 | 257             |
| 2006 | 6,907 | 22,437 | 3,082 | 7,743 | 20,372 | 4,311  | 32,426 | 272             |
| 2007 | 6,863 | 22,692 | 3,134 | 7,707 | 20,572 | 4,410  | 32,689 | 283             |
| 2008 | 6,808 | 22,955 | 3,190 | 7,679 | 20,749 | 4,525  | 32,954 | 302             |
| 2009 | 6,756 | 23,211 | 3,250 | 7,643 | 20,931 | 4,645  | 33,218 | 311             |
| 2010 | 6,712 | 23,458 | 3,313 | 7,595 | 21,120 | 4,767  | 33,482 | 318             |
| 2015 | 6,644 | 24,418 | 3,757 | 7,475 | 21,698 | 5,647  | 34,819 | 402             |
| 2020 | 6,857 | 24,831 | 4,514 | 7,619 | 21,928 | 6,655  | 36,202 | 468             |
| 2025 | 7,100 | 25,015 | 5,380 | 7,878 | 21,813 | 7,805  | 37,495 | 515             |
| 2030 | 7,239 | 25,030 | 6,339 | 8,056 | 21,659 | 8,894  | 38,608 | 509             |
| 2040 | 7,209 | 25,480 | 7,528 | 8,084 | 22,367 | 9,766  | 40,217 | 462             |
| 2050 | 7,372 | 26,204 | 7,791 | 8,229 | 22,824 | 10,314 | 41,367 | 515             |
| 2075 | 7,880 | 27,663 | 8,731 | 8,811 | 24,242 | 11,220 | 44,274 | 514             |

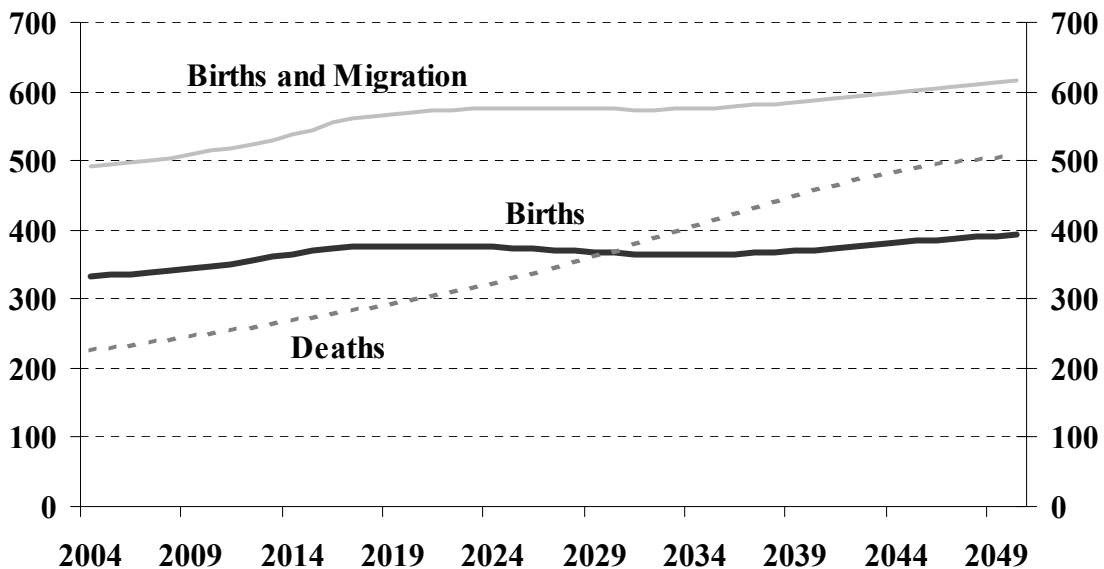
**Chart 10 Population**  
 (millions)



**Table 21 Analysis of Population**

| Year | % of Total Population |               |             | % of Total Population |               |             | Age 65 +<br>as %<br>of Age<br>20-64 |
|------|-----------------------|---------------|-------------|-----------------------|---------------|-------------|-------------------------------------|
|      | Ages<br>0-17          | Ages<br>18-69 | Ages<br>70+ | Ages<br>0-19          | Ages<br>20-64 | Ages<br>65+ |                                     |
| 2004 | 21.9                  | 68.8          | 9.3         | 24.6                  | 62.4          | 13.0        | 20.8                                |
| 2005 | 21.6                  | 69.0          | 9.4         | 24.2                  | 62.7          | 13.1        | 20.9                                |
| 2006 | 21.3                  | 69.2          | 9.5         | 23.9                  | 62.8          | 13.3        | 21.2                                |
| 2007 | 21.0                  | 69.4          | 9.6         | 23.6                  | 62.9          | 13.5        | 21.4                                |
| 2008 | 20.7                  | 69.7          | 9.7         | 23.3                  | 63.0          | 13.7        | 21.8                                |
| 2009 | 20.3                  | 69.9          | 9.8         | 23.0                  | 63.0          | 14.0        | 22.2                                |
| 2010 | 20.0                  | 70.1          | 9.9         | 22.7                  | 63.1          | 14.2        | 22.6                                |
| 2015 | 19.1                  | 70.1          | 10.8        | 21.5                  | 62.3          | 16.2        | 26.0                                |
| 2020 | 18.9                  | 68.6          | 12.5        | 21.0                  | 60.6          | 18.4        | 30.3                                |
| 2025 | 18.9                  | 66.7          | 14.3        | 21.0                  | 58.2          | 20.8        | 35.8                                |
| 2030 | 18.8                  | 64.8          | 16.4        | 20.9                  | 56.1          | 23.0        | 41.1                                |
| 2040 | 17.9                  | 63.4          | 18.7        | 20.1                  | 55.6          | 24.3        | 43.7                                |
| 2050 | 17.8                  | 63.3          | 18.8        | 19.9                  | 55.2          | 24.9        | 45.2                                |
| 2075 | 17.8                  | 62.5          | 19.7        | 19.9                  | 54.8          | 25.3        | 46.3                                |

**Chart 11 Components of Population Growth**  
(thousands)



**Table 22 Births, Net Migrants and Deaths**  
 (thousands)

| Year        | Population<br>1 <sup>st</sup> July | Births | Net<br>Migrants | Deaths | Change in<br>Population | Annual Percentage Change |            |              |
|-------------|------------------------------------|--------|-----------------|--------|-------------------------|--------------------------|------------|--------------|
|             |                                    |        |                 |        |                         | 20-64<br>(%)             | 65+<br>(%) | Total<br>(%) |
| <b>2004</b> | 31,896                             | 334    | 160             | 229    | 265                     | 1.2                      | 1.9        | 0.8          |
| <b>2005</b> | 32,162                             | 335    | 161             | 232    | 264                     | 1.1                      | 2.2        | 0.8          |
| <b>2006</b> | 32,426                             | 338    | 162             | 236    | 264                     | 1.0                      | 2.3        | 0.8          |
| <b>2007</b> | 32,689                             | 341    | 164             | 240    | 264                     | 0.9                      | 2.6        | 0.8          |
| <b>2008</b> | 32,954                             | 344    | 165             | 245    | 264                     | 0.9                      | 2.6        | 0.8          |
| <b>2009</b> | 33,218                             | 347    | 166             | 249    | 265                     | 0.9                      | 2.6        | 0.8          |
| <b>2010</b> | 33,482                             | 351    | 168             | 254    | 265                     | 0.8                      | 2.9        | 0.8          |
| <b>2015</b> | 34,819                             | 374    | 181             | 277    | 278                     | 0.4                      | 3.3        | 0.8          |
| <b>2020</b> | 36,202                             | 377    | 196             | 303    | 269                     | 0.0                      | 3.3        | 0.7          |
| <b>2025</b> | 37,495                             | 373    | 203             | 336    | 239                     | -0.2                     | 3.0        | 0.6          |
| <b>2030</b> | 38,608                             | 365    | 209             | 378    | 196                     | 0.1                      | 1.7        | 0.5          |
| <b>2040</b> | 40,217                             | 374    | 217             | 464    | 127                     | 0.3                      | 0.5        | 0.3          |
| <b>2050</b> | 41,367                             | 394    | 223             | 509    | 109                     | 0.1                      | 0.5        | 0.3          |
| <b>2075</b> | 44,274                             | 413    | 239             | 530    | 123                     | 0.3                      | 0.3        | 0.3          |

### III. Economic Projections

The list of assumptions required to make projections of the various economic indices, benefit expenditures and cost measurement bases is quite extensive. The following sections cover the more important assumptions. The economic outlook rests on the assumed evolution of the labour market, that is, labour force participation, job creation rate, unemployment rates, inflation and the increase in average employment earnings and increase in GDP. All these factors must be considered together and form part of an overall economic perspective.

Projected expenditures presented in this report are also expressed as cost ratios relative to three different measurement bases, total employment earnings, combined CPP/QPP contributory earnings and GDP. For this purpose, the average employment earnings, the proportion of persons with earnings and the proportion of CPP contributors are required and were assumed exactly as under the Twenty-First CPP Actuarial Report as at 31 December 2003. For calculation purposes, they were assumed to apply to Canada as opposed to Canada less Québec. Adjustments were then made in the projection of total employment earnings, combined CPP/QPP contributory earnings and GDP to reflect historical differences between Québec and the rest of Canada.

## **A. Economic Perspective**

The future expenditures and cost measurement bases depend on many demographic and economic factors. It is important to define each economic assumption in the context of a long-term overall economic perspective. For this report, a moderate but sustainable growth in the economy is assumed to persist throughout the projection period. The current actuarial examination involves the projection of expenditures and cost measurement bases over a long period of time. Our best judgement regarding future economic trends was used but does not take into account all social or technological changes that may occur over the projection period. There will always exist a certain degree of uncertainty. The projected aging of the population combined with the retirement of the baby boom generation over the next few decades will certainly create significant social and economic changes. It is possible that the evolution of the working-age population, especially the active population, will be quite different than what has been historically observed.

## **B. Annual Increase in Prices (Inflation Rate)**

The inflation rate assumption is needed to determine the Pension Index for any given calendar year. It is also used in the determination of the annual nominal increase in average employment earnings. Price increases, as measured by changes in the Consumer Price Index (CPI), tend to fluctuate from year to year. Over the last 50 years, the trend was generally upward through the early 1980s and downward since then. For example, the average annual increase in the CPI for the 50, 20 and 10-year periods ending in 2003 were 4.1%, 2.9% and 1.9%, respectively. Going forward, the Bank of Canada has reaffirmed its objective of keeping the inflation rate within a target range of 1% to 3% until the end of 2006.

For 2004 to 2008, it is assumed that the Bank of Canada will maintain its inflation target policy, so the assumption was set at 2.0%. This corresponds to the average forecast from various economists and falls in the middle of the Bank of Canada target. On the other hand, the ultimate assumption for price increases for 2015 and thereafter has been set at 2.7%. This is higher than has been experienced over the last decade and is in the upper range of the current Bank of Canada target range. The main reasons for the choice of an ultimate assumption of 2.7% are as follows:

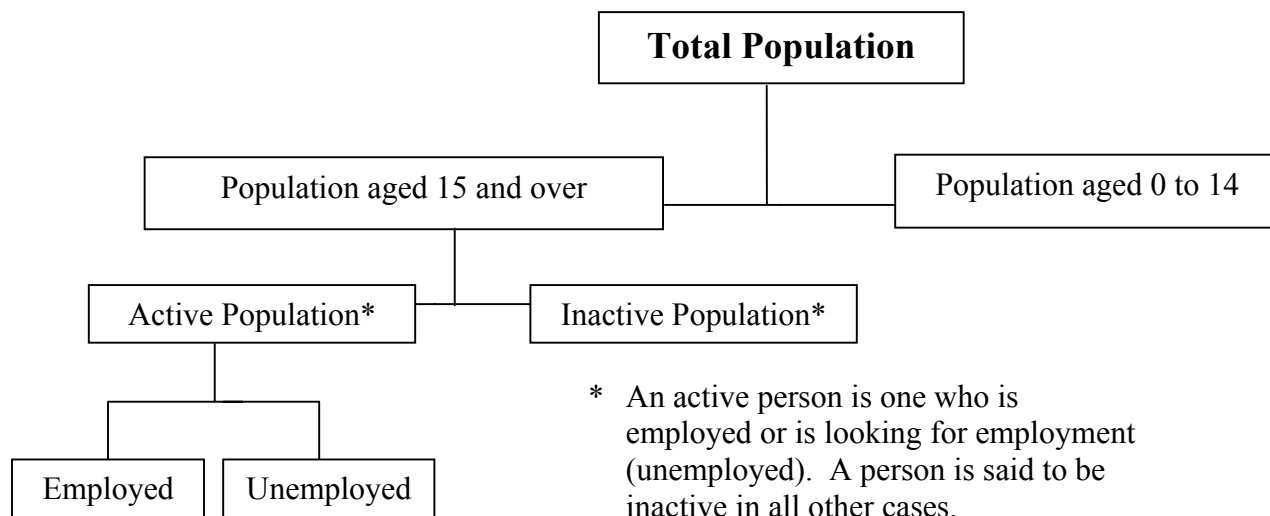
- The Bank of Canada's long-term monetary policy is known only until the end of 2006. Compared to the 75-year projection period of the actuarial report, the monetary policy of the Bank of Canada could be viewed as short-term.
- The expected upward pressure on real wages due to the labour shortage may create upward pressure on prices.
- There is uncertainty about future energy costs.
- In Canadian history, the longest consecutive periods with an inflation rate of about 2% are the mid-1950s to mid-1960s, and from 1992 to 2003.

Finally, for years 2008 to 2015 the inflation rate assumption is assumed to increase gradually from 2.0% to 2.7% by increments of 0.1% each year.

## C. Labour Market

Chart 12 shows the main components of the labour market that are used to determine the number of earners to calculate the total employment earnings shown in Table 14.

**Chart 12 Components of the Labour Market**



The number of earners is defined as the number of persons who had earnings during a given calendar year.

### 1. Active Population

The overall labour force participation rates in Canada (the active population expressed as a proportion of the population aged 15 and over) from 1976 to 2003 clearly show a narrowing of the gap between male and female rates. The increase in the participation rates of females aged 15 to 69 has been significant over recent years. For males, the increase in participation rates has been significant for the younger and older age groups, that is, for those aged 15 to 24 and those aged 50 to 69.

In 1976, overall male participation was at 77.6% versus only 45.7% for females, a gap of 31.9%. This gap has narrowed to 12.0% by 2003 with male and female participation at 73.6% and 61.6%, respectively. It is assumed that females will continue to narrow the gap in participation rates but at a slower pace, with the gap gradually reducing to about 10% by 2030 and then remaining at this level thereafter. Tables 23, 24 and 25 show the projected active population and labour force rates for Canada. Over the near term, it is assumed that females aged 50 and over will continue to increase their overall labour force participation compared to previous cohorts.



**Table 23 Active Population (Canada, ages 15 and over)**

| Year | Population <sup>1</sup> |         |        | Active Population |         |        | Average Employed |         |        |
|------|-------------------------|---------|--------|-------------------|---------|--------|------------------|---------|--------|
|      | Males                   | Females | Total  | Males             | Females | Total  | Males            | Females | Total  |
|      | (thousands)             |         |        | (thousands)       |         |        | (thousands)      |         |        |
| 2004 | 12,578                  | 13,008  | 25,586 | 9,238             | 8,004   | 17,242 | 8,502            | 7,429   | 15,931 |
| 2005 | 12,738                  | 13,167  | 25,906 | 9,341             | 8,092   | 17,432 | 8,594            | 7,509   | 16,103 |
| 2006 | 12,899                  | 13,324  | 26,223 | 9,438             | 8,173   | 17,611 | 8,688            | 7,588   | 16,276 |
| 2007 | 13,054                  | 13,479  | 26,533 | 9,524             | 8,244   | 17,768 | 8,776            | 7,659   | 16,435 |
| 2008 | 13,205                  | 13,627  | 26,832 | 9,604             | 8,308   | 17,912 | 8,865            | 7,731   | 16,596 |
| 2009 | 13,352                  | 13,771  | 27,123 | 9,682             | 8,369   | 18,051 | 8,946            | 7,795   | 16,741 |
| 2010 | 13,498                  | 13,913  | 27,410 | 9,760             | 8,430   | 18,189 | 9,029            | 7,859   | 16,888 |
| 2015 | 14,127                  | 14,530  | 28,658 | 10,049            | 8,698   | 18,747 | 9,339            | 8,143   | 17,482 |
| 2020 | 14,667                  | 15,060  | 29,727 | 10,218            | 8,876   | 19,094 | 9,521            | 8,331   | 17,853 |
| 2025 | 15,177                  | 15,568  | 30,744 | 10,279            | 8,919   | 19,198 | 9,578            | 8,372   | 17,950 |
| 2030 | 15,653                  | 16,055  | 31,708 | 10,369            | 9,018   | 19,387 | 9,661            | 8,466   | 18,127 |
| 2040 | 16,407                  | 16,879  | 33,286 | 10,668            | 9,292   | 19,961 | 9,940            | 8,723   | 18,663 |
| 2050 | 16,847                  | 17,365  | 34,213 | 10,862            | 9,458   | 20,320 | 10,120           | 8,879   | 18,999 |

<sup>1</sup> Adjusted to the basis used by Statistics Canada in their labour force survey.

**Table 24 Labour Force Participation Rates (Canada, ages 15 and over)**

| Year | Labour Force Participation Rate |         |       | Employment Rate |         |       | Unemployment Rate |         |       |
|------|---------------------------------|---------|-------|-----------------|---------|-------|-------------------|---------|-------|
|      | Males                           | Females | Total | Males           | Females | Total | Males             | Females | Total |
|      | (%)                             |         |       | (%)             |         |       | (%)               |         |       |
| 2004 | 73.4                            | 61.5    | 67.4  | 67.6            | 57.1    | 62.3  | 8.0               | 7.2     | 7.6   |
| 2005 | 73.3                            | 61.5    | 67.3  | 67.5            | 57.0    | 62.2  | 8.0               | 7.2     | 7.6   |
| 2006 | 73.2                            | 61.3    | 67.2  | 67.4            | 56.9    | 62.1  | 7.9               | 7.2     | 7.6   |
| 2007 | 73.0                            | 61.2    | 67.0  | 67.2            | 56.8    | 61.9  | 7.9               | 7.1     | 7.5   |
| 2008 | 72.7                            | 61.0    | 66.8  | 67.1            | 56.7    | 61.8  | 7.7               | 6.9     | 7.3   |
| 2009 | 72.5                            | 60.8    | 66.6  | 67.0            | 56.6    | 61.7  | 7.6               | 6.9     | 7.3   |
| 2010 | 72.3                            | 60.6    | 66.4  | 66.9            | 56.5    | 61.6  | 7.5               | 6.8     | 7.2   |
| 2015 | 71.1                            | 59.9    | 65.4  | 66.1            | 56.0    | 61.0  | 7.1               | 6.4     | 6.7   |
| 2020 | 69.7                            | 58.9    | 64.2  | 64.9            | 55.3    | 60.1  | 6.8               | 6.1     | 6.5   |
| 2025 | 67.7                            | 57.3    | 62.4  | 63.1            | 53.8    | 58.4  | 6.8               | 6.1     | 6.5   |
| 2030 | 66.2                            | 56.2    | 61.1  | 61.7            | 52.7    | 57.2  | 6.8               | 6.1     | 6.5   |
| 2040 | 65.0                            | 55.1    | 60.0  | 60.6            | 51.7    | 56.1  | 6.8               | 6.1     | 6.5   |
| 2050 | 64.5                            | 54.5    | 59.4  | 60.1            | 51.1    | 55.5  | 6.8               | 6.1     | 6.5   |

**Table 25 Labour Force Participation Rates by Age Group (Canada)**

| Age Group          | Males       |             |             |             | Females     |             |             |             |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                    | 2004        | 2010        | 2020        | 2030        | 2004        | 2010        | 2020        | 2030        |
|                    | (%)         | (%)         | (%)         | (%)         | (%)         | (%)         | (%)         | (%)         |
| 15-19              | 54.3        | 55.0        | 56.0        | 56.0        | 55.1        | 56.0        | 57.0        | 57.0        |
| 20-24              | 81.6        | 82.0        | 83.0        | 83.0        | 76.8        | 78.0        | 79.0        | 79.0        |
| 25-29              | 91.2        | 92.0        | 93.0        | 93.0        | 81.3        | 82.0        | 83.0        | 84.0        |
| 30-34              | 93.4        | 94.0        | 94.0        | 94.0        | 81.1        | 82.0        | 84.0        | 85.0        |
| 35-39              | 93.1        | 94.0        | 94.0        | 94.0        | 82.2        | 83.0        | 85.0        | 85.0        |
| 40-44              | 92.7        | 93.0        | 94.0        | 94.0        | 82.4        | 83.0        | 86.0        | 86.0        |
| 45-49              | 91.5        | 92.0        | 93.0        | 94.0        | 81.9        | 82.0        | 86.0        | 86.0        |
| 50-54              | 88.0        | 88.0        | 90.0        | 91.0        | 76.5        | 77.0        | 79.0        | 80.0        |
| 55-59              | 75.8        | 76.0        | 78.0        | 79.0        | 59.8        | 60.0        | 62.0        | 63.0        |
| 60-64              | 52.7        | 53.0        | 55.0        | 56.0        | 31.9        | 32.0        | 35.0        | 36.0        |
| 65-69              | 21.0        | 21.0        | 23.0        | 23.0        | 9.9         | 10.0        | 12.0        | 12.0        |
| 70 and Over        | 7.0         | 7.0         | 8.0         | 8.0         | 2.0         | 3.0         | 5.0         | 5.0         |
| 15-69              | 80.2        | 79.4        | 78.8        | 78.3        | 69.7        | 68.7        | 68.4        | 68.5        |
| <b>15 and Over</b> | <b>73.4</b> | <b>72.3</b> | <b>69.7</b> | <b>66.2</b> | <b>61.5</b> | <b>60.6</b> | <b>58.9</b> | <b>56.2</b> |

The aging of the population exerts downward pressure on the overall labour force participation rate in Canada. The overall participation rate from Table 24 would fall from 67.4% in 2004 to 56.8% compared to 59.4% in 2050 if the 2003 participation rates by age and sex were to apply throughout the projection period. This can be explained by the projected increase in the proportion of people aged 55 to 69 outweighing the recent increase in participation in this age group, as well as the increase in the proportion of people aged 70 and over. A reduction in the overall participation rates is inevitable under these circumstances. To recognize this particular demographic trend, the projection period for purposes of projecting the participation rates has been divided into three periods: 2004 to 2010, 2010 to 2020 and 2020 to 2030.

Individuals of the baby boom generation who were born between 1945 and 1955, presently active, will be aged 55 to 65 within this decade, and this highly active cohort will continue to put upward pressure on the participation rate for the age group 55 to 64. It is projected that by 2010 the labour force participation rate of this age group (55 to 64) will increase slightly from its current level. During the period 2004 to 2010, a balance between gains in participation rates and productivity increases through the increase in average employment earnings of workers will likely result. Nonetheless, the assumed increase in labour force participation rates for those aged 50 and over is not sufficient to counteract the decrease in the overall participation rate due to the demographic shift. For this reason, participation rates for people less than age 55, especially for those aged 20 to 40, were increased somewhat. This results in labour force participation rates for those aged 15 to 69 for 2010 of 79.4% and 68.7% for males and females, respectively.

From 2010 to 2020, baby boomers born between 1955 and 1965, who are more numerous than the previous baby boomers, will be reaching the ages of 55 to 65. The

first generation of boomers (1945 to 1955) will have already reached the normal retirement age, and will create downward pressure on the overall participation rate. It was thus assumed that those aged 55 to 64, during this period, would be participating more because of the increased employment opportunities due to the expected labour shortage. This change in work pattern might be expected since this generation of workers is more adaptable, flexible and better educated to prolong their work life. Since the early 1990s, young individuals less than age 35 have entered the labour force later mainly due to longer schooling. For this reason, we might expect a later exit from the labour force. It was thus assumed that participation rates for those less than age 55 would increase. Again, as for the previous period, we expect a balance between gains in participation and productivity. This results in labour force participation rates for those aged 15 to 69 for 2020 of 78.8% and 68.4% for males and females, respectively.

From 2020 to 2030, both baby boom generations will have reached the normal retirement age; combined with the projected low growth in the population, this leads to downward pressure on the ratio of active to working age persons. For this reason, the participation rates of those aged 55 to 64 are increased to partially offset the decrease in the overall participation rate. This results in labour force participation rates for those aged 15 to 69 for 2030 of 78.3% and 68.5% for males and females, respectively.

Finally for 2031 and thereafter, the participation rates are kept constant. This combined with a slow growth in the working age population results in a low rate of growth of approximately 0.3% for the active population.

## **2. Employment**

In Canada, the annual average job creation rate has been about 1.8% since 1976. However, this rate has varied greatly, having averaged 2.2% from 1976 to 1989 but only 1.4% from 1990 to 2003. It is assumed that the job creation rate will be 1.2% in 2004, based on the most recent experience and various economic forecasts. Thereafter, the job creation rate is assumed to be around 1.0% until 2008 and then decrease gradually to 0.3% over the long term as the increase in the active population reduces the pressure on the unemployment rate. Table 26 shows the projected number of employed persons for Canada.

If the job creation rate remained constant at the current level throughout the projection period, it would result in the elimination of unemployment in the context of the projected demographic situation. The unemployment rate is not expected to fall below the natural rate of unemployment without creating inflationary pressures. In this report, it is assumed that the unemployment rate will average about 7.5% from 2004 to 2008. Thereafter, the slower growth in the active population will further reduce the unemployment rate. For this reason, the unemployment rate is assumed to decrease to a level of 6.5% by about 2020 and remain at that level thereafter.

**Table 26 Employment of Population (Canada, ages 18 to 69)**

| Year | Population  |         | Average Employed |         | Employment Rate |         | Proportion with Earnings (Earners) |         |
|------|-------------|---------|------------------|---------|-----------------|---------|------------------------------------|---------|
|      | Males       | Females | Males            | Females | Males           | Females | Males                              | Females |
|      | (thousands) |         | (thousands)      |         | (%)             |         | (%)                                |         |
| 2004 | 10,989      | 10,958  | 8,193            | 7,163   | 74.6            | 65.4    | 60.9                               | 55.4    |
| 2005 | 11,113      | 11,083  | 8,283            | 7,238   | 74.5            | 65.3    | 60.9                               | 55.4    |
| 2006 | 11,232      | 11,204  | 8,373            | 7,311   | 74.5            | 65.3    | 61.0                               | 55.4    |
| 2007 | 11,360      | 11,333  | 8,455            | 7,376   | 74.4            | 65.1    | 60.9                               | 55.3    |
| 2008 | 11,491      | 11,465  | 8,539            | 7,441   | 74.3            | 64.9    | 60.9                               | 55.2    |
| 2009 | 11,619      | 11,592  | 8,617            | 7,501   | 74.2            | 64.7    | 60.8                               | 55.1    |
| 2010 | 11,742      | 11,716  | 8,699            | 7,563   | 74.1            | 64.5    | 60.8                               | 55.0    |
| 2015 | 12,222      | 12,196  | 9,004            | 7,839   | 73.7            | 64.3    | 60.5                               | 54.9    |
| 2020 | 12,431      | 12,400  | 9,161            | 8,002   | 73.7            | 64.5    | 60.7                               | 55.4    |
| 2025 | 12,535      | 12,480  | 9,178            | 8,016   | 73.2            | 64.2    | 60.5                               | 55.3    |
| 2030 | 12,553      | 12,477  | 9,212            | 8,073   | 73.4            | 64.7    | 60.9                               | 56.0    |
| 2040 | 12,782      | 12,698  | 9,439            | 8,287   | 73.8            | 65.3    | 62.1                               | 57.1    |
| 2050 | 13,127      | 13,078  | 9,617            | 8,443   | 73.3            | 64.6    | 62.1                               | 56.9    |

### 3. Number of Earners

The number of earners for any given year, namely anyone who had employment earnings during the year, is always more than the employed population, sometimes even close to the labour force because it includes all individuals who had earnings at any given time during the year. The projected number of earners is obtained by a regression based on a highly correlated historical relationship between the number of employed persons and the number of earners over the period 1976 to 2001. Table 26 shows the average number of employed persons and the proportion of the population aged 18 to 69 with earnings for Canada.

#### D. Rate of Increase in Average Annual Earnings

The assumed increase in average annual earnings (AAE) is used to project the average annual earnings from one year to the next. The real-wage differential is measured by the difference between the increase in the AAE and the CPI.

Historically, the real wage differential has fluctuated significantly from year to year. The trend has been generally negative since 1991. The 10-year average real-wage differential was 0.4% for the period ending in 1993 while it was -0.2% for the period ending in 2003. The average annual real-wage differential averaged 1.2% for the last 50-year period ending in 2003. Many factors influence real wage increases, including general productivity, labour demand, the move to a service economy and decreases in the average hours worked. More specifically, labour demand has significant impact on real-wage increases. Real wages are subject to downward pressure as the demand for

workers decreases. On the other hand, one could expect upward pressure on wages if the size of the labour force fails to keep up with a growing economy.

The real increase in AAE takes into account the expected upward pressure on real wages due to the expected labour shortage. The assumption is based on the expected labour shortage starting this decade, as moderated by higher participation rates at older ages and productivity gains. Table 27 below shows the assumptions regarding the annual increases in prices and average annual earnings. The real increase in AAE is assumed at 0.1% for 2004. For the period 2005 to 2012, the real increase in AAE is assumed to gradually increase to 1.2%.

**Table 27 Inflation, Real AAE Increases**

| <b>Year</b>  | <b>Price<br/>Increases</b> | <b>Real Average<br/>Annual Earnings (AAE)</b> |
|--------------|----------------------------|---|
|              | (%)                        | (%)   |
| <b>2004</b>  | 2.0                        | 0.1   |
| <b>2005</b>  | 2.0                        | 0.3   |
| <b>2006</b>  | 2.0                        | 0.5   |
| <b>2007</b>  | 2.0                        | 0.7   |
| <b>2008</b>  | 2.0                        | 0.8   |
| <b>2009</b>  | 2.1                        | 0.9   |
| <b>2010</b>  | 2.2                        | 1.0   |
| <b>2011</b>  | 2.3                        | 1.1   |
| <b>2012</b>  | 2.4                        | 1.2   |
| <b>2013</b>  | 2.5                        | 1.2   |
| <b>2014</b>  | 2.6                        | 1.2   |
| <b>2015+</b> | 2.7                        | 1.2   |

#### **E. Total Employment Earnings**

Total employment earnings were obtained by applying the Canada less Québec proportion of earners and average employment earnings (both as determined under the Twenty-First CPP Actuarial Report as at 31 December 2003) to the entire population of Canada. Total employment earnings estimated were compared with historical statistics, from Statistics Canada, of total employment earnings for Canada. These estimates are on average for 1999 to 2003 about 2% higher than the corresponding experience data. For this reason projected employment earnings for Canada have been multiplied by an experience adjustment factor, which is graded from its 2003 actual-to-expected ratio to the ultimate level over five years. The ultimate factor of 97.9% corresponds to the actual-to-expected ratio over the most recent five years.

## **F. Combined CPP and QPP Contributory Earnings**

Combined CPP and QPP contributory earnings were obtained by applying the CPP proportion of contributors and average contributory earnings (both as determined under the Twenty-First CPP Actuarial Report as at 31 December 2003) to the entire population of Canada. Total contributory earnings were then compared to actual combined CPP and QPP contributory earnings for 1966 to 2003. Such validation reveals that, on average, this approach produces combined contributory earnings about 2% higher than the actual figures. For this reason, projected contributory earnings for Canada have been multiplied by an experience adjustment factor, which is graded from the 2003 actual-to-expected ratio to the ultimate level over five years. The ultimate factor of 97.8% corresponds to the actual-to-expected ratio over the most recent five years.

## **G. Gross Domestic Product (GDP)**

Gross domestic product (GDP) is perhaps the most suitable basis for comparison of costs since benefits are financed through general revenues and not on the basis of employment earnings. Historical GDP was compared to historical total employment earnings for 1966 to 2003 and was found to be about 2.0 times as much. For this reason GDP was projected as total employment earnings multiplied by an experience adjustment factor, which is graded from its 2003 level to the ultimate level over five years. The ultimate factor of 2.2 corresponds to the ratio over the most recent five years.

# **IV. Recipient Rates and Distribution by Level of Benefit**

Since benefits are computed for age-sex cohorts of persons as opposed to individual persons, recipient rates by age, sex, type and level of benefit are required. Data received from Social Development Canada (SDC) for each type of benefit consist of the number of beneficiaries at June of each year (1983 to 2004) by sex, age and six levels of benefit as a percentage of the maximum benefit (0-19%, 20-39%, 40-59%, 60-79%, 80-99%, and 100% and over). SDC also provided statistics on individual beneficiaries as at 31 December of each year from 1998 to 2003. The actual recipient rates in each of the cells described above is obtained by dividing the number of beneficiaries in that cell by the relevant population of Canada. The data includes benefits paid outside Canada.

## **A. Basic Pension**

The historical recipient rates of sex-distinct cohorts for the basic pension were studied to determine the best-estimate assumption. The ultimate basic pension recipient rates are set equal to the projected recipient rates for the cohort reaching age 65 in 2004. The assumed evolution of recipient rate from age 65 to age 90 and over for the cohort age 65 in 2004 is based on historical trends in the increase in recipient rates from one age to the next as observed for cohorts that have reached age 65 prior to 2004. Each cohort reaching age 65 after 2004 is assumed to experience the same recipient rates by age as those assumed for the cohort age 65 in 2004. Recipient rates for cohorts aged 66 and over in 2004 are projected from their 2004 adjusted values up to age 90 and over using the same age-to-age increases. Recipient rates for cohorts aged 82 and over in 2004 were further adjusted to be equal to their historical maximum value. This approach produces basic pension recipient rates that increase from one age to the next for any given cohort.

The ultimate recipient rates for cohorts reaching age 65 in 2004 and thereafter are assumed to increase from 93.0% at age 65 to 102.2% at ages 90 and over for males and from 94.0% at age 65 to 102.0% at ages 90 and over for females. It is worth noting that basic pension recipient rates may exceed 100% due to benefits paid outside Canada. For example, the recipient rates for basic pension benefit paid outside of Canada was about 2% for males and 1% for females in 2003. These percentages are expected to increase over the projection period. Table 28 presents the projected basic pension recipient rates by age and sex for cohorts reaching age 65 in 2004 and thereafter.

**Table 28 Basic Pension Recipient Rates by Age (%)**

| <b>Cohort Reaching Age 65 in 2004 and Thereafter</b> |              |                |
|--|--------------|----------------|
| <b>Age</b>   | <b>Males</b> | <b>Females</b> |
| <b>65</b>  | 93.0         | 94.0           |
| <b>66</b>  | 96.8         | 96.7           |
| <b>67</b>  | 98.2         | 97.7           |
| <b>68</b>  | 99.1         | 98.3           |
| <b>69</b>  | 99.8         | 98.8           |
| <b>70</b>  | 100.4        | 99.3           |
| <b>75</b>  | 101.8        | 100.7          |
| <b>80</b>  | 102.1        | 101.5          |
| <b>85</b>  | 102.2        | 101.9          |
| <b>90+</b>   | 102.2        | 102.0          |

The basic pension recipient rates by age were further broken down by level of benefit using distributions of recipient rates by level of benefit, expressed as a percentage of the maximum benefit (based on number of years of residence in Canada). The historical distributions by level of benefit were derived based on individual OAS beneficiary data as at 31 December of each year over the period 1998 to 2003.

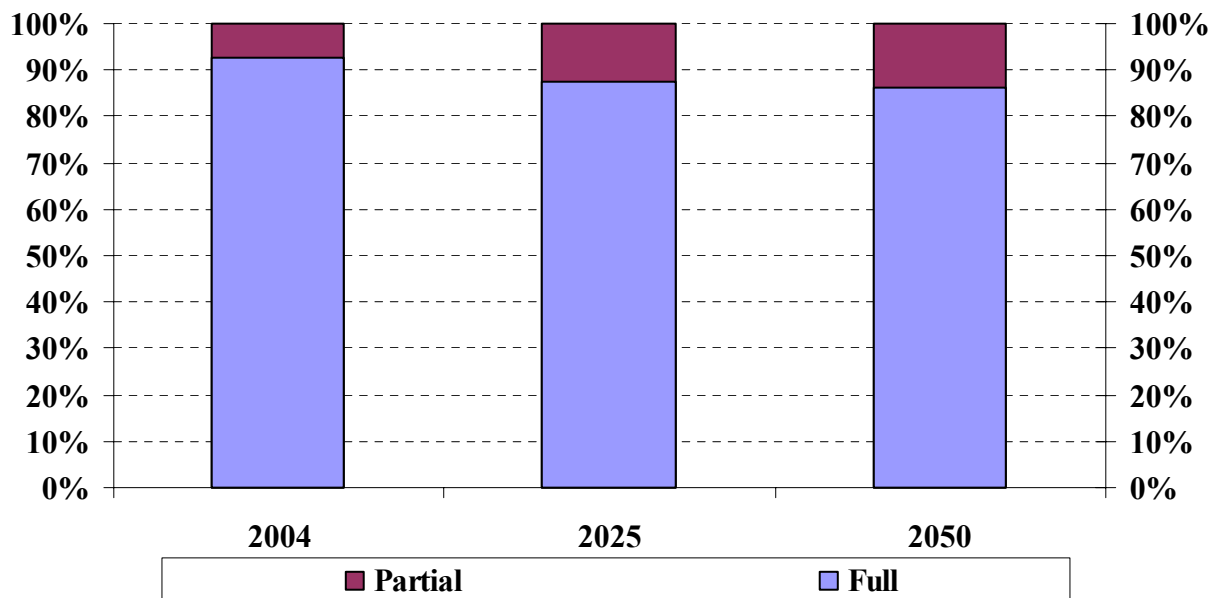
The distribution by level of benefit at age 65 is projected from its actual value in 2003 to year 2017 using historical trends by years of residence over the period 1998 to 2003. The projected distribution takes into account the introduction of partial benefits in 1977, which are to take full effect in 2017. The age 65 distribution projected in 2017 is assumed to apply thereafter.

For any given cohort reaching age 65 on or after 2017, the distributions by level of benefit for ages 66 and over are projected based on historical data that reveal that for any given cohort there is a large proportion of beneficiaries coming into pay after age 65 that have only a small number of years of residence and thus receive partial benefits. As a result, as a cohort progress in age the proportion of beneficiaries receiving a full pension is assumed to reduce while the proportion of beneficiaries receiving a partial benefit is assumed to increase. Finally, the distributions for cohorts aged 66 and over in 2004 are linearly interpolated from their actual values in 2004 to their ultimate values. Table 29, Charts 13 and 14 show the evolution of the male and female recipient rates by level of benefit.

**Table 29 Basic Pension Recipient Rates by Age and Level of Benefit (%)**

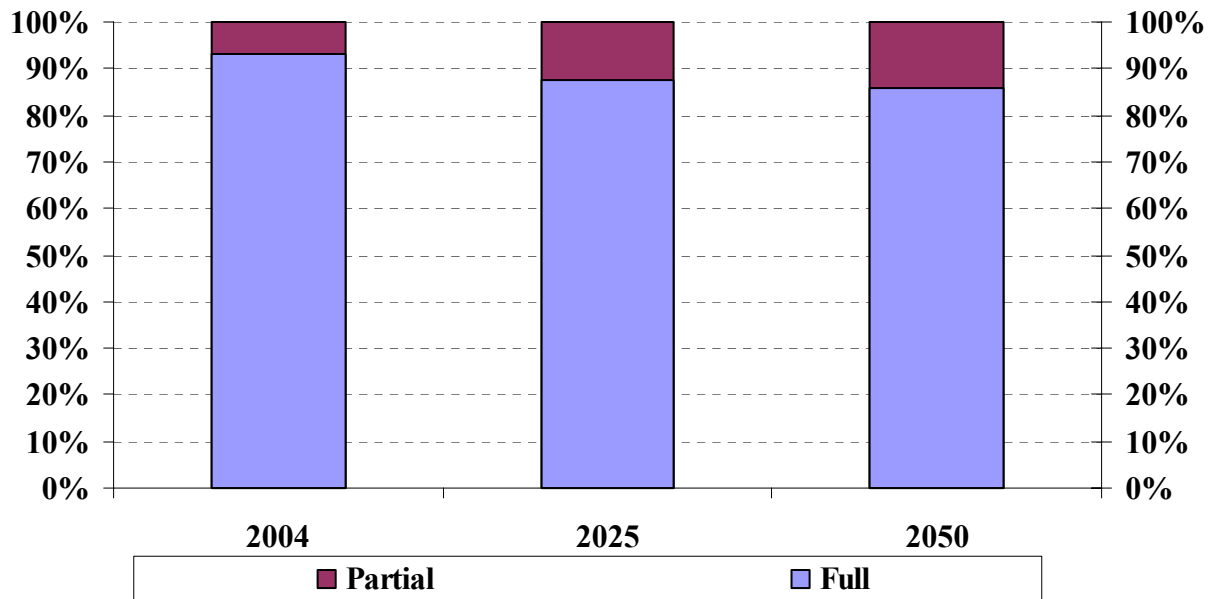
| Age             | Cohort Reaching Age 65 in |             |              |             |             |              |             |             |              |
|-----------------|---------------------------|-------------|--------------|-------------|-------------|--------------|-------------|-------------|--------------|
|                 | 2004                      |             |              | 2025        |             |              | 2050        |             |              |
|                 | Partial                   | Full        | Total        | Partial     | Full        | Total        | Partial     | Full        | Total        |
| <b>Males</b>    |                           |             |              |             |             |              |             |             |              |
| 65              | 4.4                       | 88.6        | 93.0         | 8.3         | 84.7        | 93.0         | 8.3         | 84.7        | 93.0         |
| 70              | 8.8                       | 91.6        | 100.4        | 12.6        | 87.8        | 100.4        | 12.6        | 87.8        | 100.4        |
| 75              | 11.2                      | 90.6        | 101.8        | 14.9        | 87.0        | 101.8        | 14.9        | 87.0        | 101.8        |
| 80              | 12.1                      | 90.0        | 102.1        | 15.7        | 86.5        | 102.1        | 15.7        | 86.5        | 102.1        |
| 85              | 12.4                      | 89.8        | 102.2        | 15.8        | 86.4        | 102.2        | 15.8        | 86.4        | 102.2        |
| 90+             | 12.7                      | 89.5        | 102.2        | 15.8        | 86.4        | 102.2        | 15.8        | 86.4        | 102.2        |
| <b>All Ages</b> | <b>10.2</b>               | <b>90.5</b> | <b>100.6</b> | <b>13.8</b> | <b>86.9</b> | <b>100.7</b> | <b>13.9</b> | <b>86.9</b> | <b>100.8</b> |
| <b>Females</b>  |                           |             |              |             |             |              |             |             |              |
| 65              | 5.1                       | 89.0        | 94.0         | 9.0         | 85.1        | 94.0         | 9.0         | 85.1        | 94.0         |
| 70              | 8.8                       | 90.5        | 99.3         | 12.7        | 86.6        | 99.3         | 12.7        | 86.6        | 99.3         |
| 75              | 10.7                      | 90.0        | 100.7        | 14.9        | 85.8        | 100.7        | 14.9        | 85.8        | 100.7        |
| 80              | 11.6                      | 89.9        | 101.5        | 15.8        | 85.8        | 101.5        | 15.8        | 85.8        | 101.5        |
| 85              | 11.9                      | 90.1        | 101.9        | 15.9        | 86.0        | 101.9        | 15.9        | 86.0        | 101.9        |
| 90+             | 12.3                      | 89.7        | 102.0        | 15.9        | 86.1        | 102.0        | 15.9        | 86.1        | 102.0        |
| <b>All Ages</b> | <b>10.2</b>               | <b>90.0</b> | <b>100.2</b> | <b>14.2</b> | <b>86.1</b> | <b>100.2</b> | <b>14.2</b> | <b>86.1</b> | <b>100.3</b> |

**Chart 13 Beneficiaries by Level of Benefit (Basic Pension – Males Aged 65+)**





**Chart 14 Beneficiaries by Level of Benefit (Basic Pension – Females Aged 65+)**



The effect of the OAS clawback provision (see Section III of Appendix A), which reduces the amount payable for high-income pensioners, is being estimated for the first time in this report. For this purpose, due to the limited amount of historical data available the results presented in Tables 30 and 31 should be interpreted with caution. Future OAS Actuarial Reports may present more reliable estimates as the amount of historical data increases and that the methodology can be validated over time. The numbers of beneficiary that are fully or partially affected by the clawback provision were estimated from historical data on beneficiaries in the period 1998 to 2003.

The actual proportions of beneficiaries affected (fully or partially) by the clawback in 2003 were projected assuming that each subsequent cohort would be somewhat wealthier than the preceding one. To simulate this, a formula was developed that is a function of each cohort's average career employment earnings (over the ages of 18 to 65) and of the inflation rate. The link with inflation is required since the clawback income limits move in line with inflation since 2000.

The proportion of beneficiaries affected by the clawback provision is projected to increase from its current level of 5.1% in 2003 (1.6% full and 3.5% partial) to 8.5% (2.3% full and 6.2% partial) by 2050. Table 30 presents the projected number and percentage of OAS beneficiaries affected by the clawback provision.

**Table 30 OAS Beneficiaries affected by the Clawback Provision**  
 (in thousands)

| Year        | Full Clawback |            | Partial Clawback |            | Total   |            |
|-------------|---------------|------------|------------------|------------|---------|------------|
|             | Numbers       | % Affected | Numbers          | % Affected | Numbers | % Affected |
| <b>2004</b> | 65.4          | 1.6        | 149.6            | 3.7        | 215.0   | 5.3        |
| <b>2005</b> | 68.3          | 1.6        | 157.7            | 3.8        | 226.0   | 5.4        |
| <b>2006</b> | 71.3          | 1.7        | 166.6            | 3.9        | 237.9   | 5.6        |
| <b>2007</b> | 74.8          | 1.7        | 176.5            | 4.0        | 251.4   | 5.8        |
| <b>2008</b> | 78.8          | 1.8        | 187.5            | 4.2        | 266.2   | 5.9        |
| <b>2009</b> | 82.8          | 1.8        | 199.3            | 4.3        | 282.1   | 6.1        |
| <b>2010</b> | 87.3          | 1.8        | 211.6            | 4.5        | 298.8   | 6.3        |
| <b>2015</b> | 112.3         | 2.0        | 281.1            | 5.0        | 393.4   | 7.0        |
| <b>2020</b> | 137.0         | 2.1        | 352.2            | 5.3        | 489.3   | 7.4        |
| <b>2025</b> | 159.7         | 2.0        | 417.1            | 5.4        | 576.8   | 7.4        |
| <b>2050</b> | 240.8         | 2.3        | 637.3            | 6.2        | 878.1   | 8.5        |

To estimate the total amount of clawback the number of beneficiaries affected by a full clawback reduction was further broken down between beneficiaries receiving a full basic pension benefit (98%) and those receiving a partial basic pension benefit (2%). This was also done for beneficiaries affected by a partial clawback reduction and, in this case, 99.5% of beneficiaries receive a full basic pension while 0.5% of beneficiaries receive a partial basic pension.

The impact of the clawback provision on total benefits payable is then obtained using the projected number of beneficiaries who are affected, and the assumed reduction in their average benefit (100% reduction for those with a full clawback reduction and a 40% reduction in benefit for those with a partial clawback reduction). In 2003, the clawback provision had the effect of reducing the total amount of basic pension benefits payable by about \$700 million or 3.3%. Table 31 presents the projected clawback amounts.

**Table 31 Financial Impact of Basic Pension Clawback**

| Year | Clawback Amount for Those with Full Reductions |                     | Clawback Amount for Those with Partial Reductions |                     | Total Clawback Amount |                     |
|------|--|---------------------|---|---------------------|-----------------------|---------------------|
|      | Amount (\$ million)                            | % of Total benefits | Amount (\$ million)                               | % of Total benefits | Amount (\$ million)   | % of Total benefits |
| 2004 | 405  | 1.8                 | 337   | 1.5                 | 742                   | 3.3                 |
| 2005 | 431  | 1.9                 | 362   | 1.6                 | 793                   | 3.5                 |
| 2006 | 459  | 1.9                 | 390   | 1.6                 | 850                   | 3.5                 |
| 2007 | 492  | 2.0                 | 422   | 1.7                 | 914                   | 3.7                 |
| 2008 | 528  | 2.0                 | 457   | 1.8                 | 985                   | 3.8                 |
| 2009 | 567  | 2.1                 | 496   | 1.8                 | 1,063                 | 3.9                 |
| 2010 | 611  | 2.1                 | 538   | 1.9                 | 1,149                 | 4.0                 |
| 2015 | 888  | 2.3                 | 808   | 2.1                 | 1,696                 | 4.4                 |
| 2020 | 1,240  | 2.4                 | 1,156   | 2.3                 | 2,396                 | 4.7                 |
| 2025 | 1,651  | 2.4                 | 1,564   | 2.3                 | 3,215                 | 4.7                 |
| 2050 | 4,847  | 2.7                 | 4,653   | 2.6                 | 9,500                 | 5.3                 |

**B. GIS and Allowance**

The actual 2004 recipient rates for GIS and Allowance for each age, sex, type and level of benefit are used as the starting point for determining the best-estimate assumption. The formula used in the projection of GIS and Allowance recipient rates takes into account the assumption that each new cohort of beneficiaries will be somewhat wealthier than the preceding one and thus a smaller percentage of OAS beneficiaries are expected to become GIS or Allowance beneficiaries over the projection period.

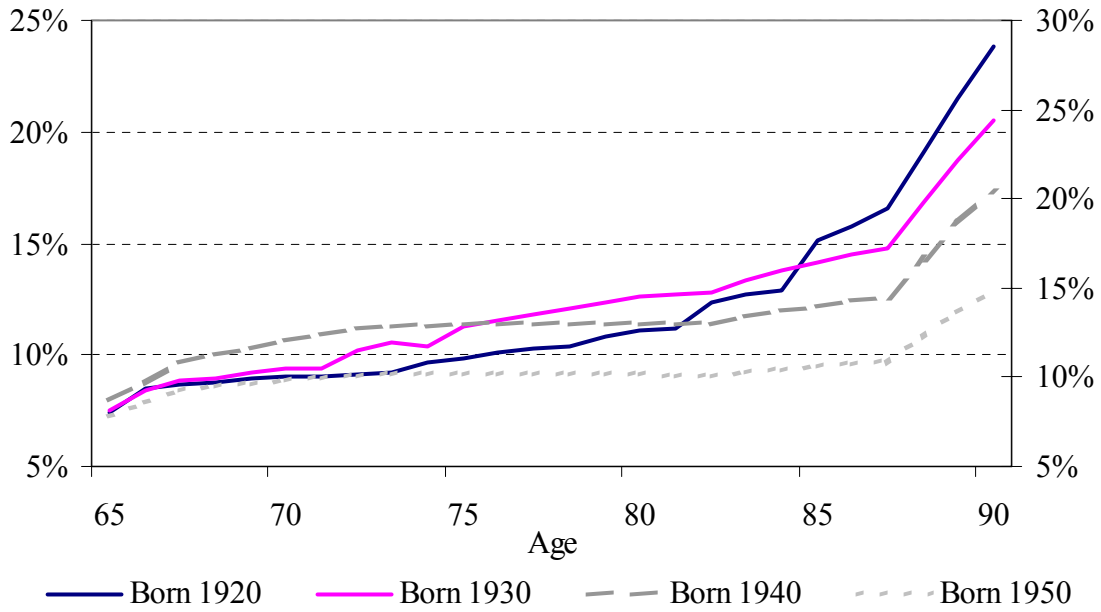
For this report, the experience adjustment factors used in the projection formula were developed to adjust the formula so that characteristics and trends of historical recipient rates by age, sex, type and level of benefit observed over the last five years would be reproduced more closely. The factors were used for the first ten years of the projection period. Given the additive nature of the experience adjustment factors, minimum values of recipient rates were set in order to eliminate the possibility of negative recipient rates. Minimum recipient rates were set by type of benefit in relation to the lowest prevailing recipient rates in year 2004 at the benefit level category for a given type of benefit.

The change in the assumed distribution by level of benefit is also automatically taken into account by the formula, as is the increasing pattern of recipient rates by age. Table 32 presents the projected GIS and Allowance recipient rates for cohorts reaching age 65 by sex, type and level of benefit. Charts 15 through 18 present recipient rates by year of birth. Charts 19 and 20 present the distribution of recipient rates by level of benefit for years 2004, 2025 and 2050.

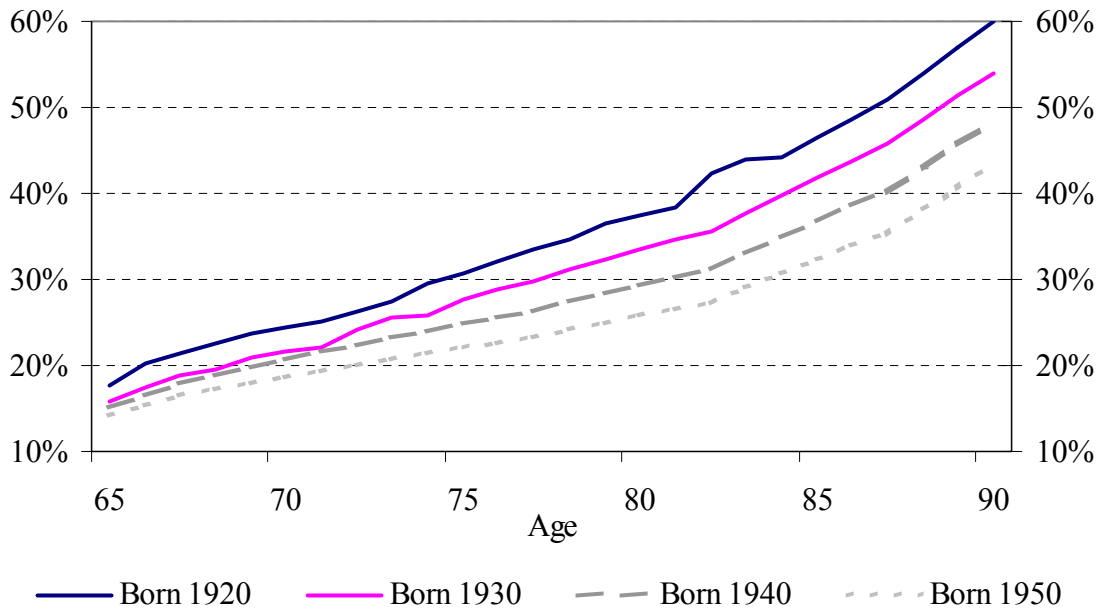
**Table 32 GIS and Allowance Recipient Rates (%)**

| Age                  | Cohort Reaching Age 65 in |            |             |             |            |             |             |            |             |
|----------------------|---------------------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|
|                      | 2004                      |            |             | 2025        |            |             | 2050        |            |             |
|                      | Partial                   | Full       | Total       | Partial     | Full       | Total       | Partial     | Full       | Total       |
| <b>GIS - Males</b>   |                           |            |             |             |            |             |             |            |             |
| 65                   | 18.8                      | 4.7        | 23.4        | 15.5        | 4.1        | 19.6        | 11.5        | 3.2        | 14.6        |
| 70                   | 23.9                      | 5.1        | 29.0        | 18.4        | 4.1        | 22.5        | 13.4        | 3.1        | 16.5        |
| 75                   | 22.9                      | 4.8        | 27.7        | 17.1        | 3.7        | 20.8        | 12.2        | 2.7        | 14.9        |
| 80                   | 20.3                      | 4.3        | 24.6        | 14.9        | 3.2        | 18.1        | 10.4        | 2.3        | 12.7        |
| 85                   | 20.5                      | 3.8        | 24.3        | 14.7        | 2.8        | 17.5        | 10.0        | 2.0        | 12.0        |
| 90+                  | 26.2                      | 2.7        | 29.0        | 18.9        | 2.1        | 21.0        | 12.8        | 1.5        | 14.4        |
| <b>All Ages</b>      | <b>22.2</b>               | <b>4.6</b> | <b>26.8</b> | <b>16.8</b> | <b>3.5</b> | <b>20.3</b> | <b>12.0</b> | <b>2.6</b> | <b>14.5</b> |
| <b>GIS - Females</b> |                           |            |             |             |            |             |             |            |             |
| 65                   | 22.8                      | 5.3        | 28.1        | 18.4        | 4.5        | 22.9        | 13.3        | 3.3        | 16.6        |
| 70                   | 27.4                      | 6.3        | 33.7        | 21.1        | 4.9        | 26.0        | 15.4        | 3.6        | 19.0        |
| 75                   | 28.7                      | 6.6        | 35.3        | 21.7        | 5.0        | 26.7        | 15.7        | 3.6        | 19.3        |
| 80                   | 30.6                      | 6.0        | 36.6        | 23.0        | 4.5        | 27.5        | 16.5        | 3.2        | 19.7        |
| 85                   | 36.5                      | 5.1        | 41.6        | 27.7        | 3.9        | 31.6        | 20.0        | 2.8        | 22.8        |
| 90+                  | 46.2                      | 4.4        | 50.6        | 36.8        | 3.4        | 40.2        | 28.2        | 2.5        | 30.6        |
| <b>All Ages</b>      | <b>31.2</b>               | <b>5.8</b> | <b>37.0</b> | <b>24.2</b> | <b>4.5</b> | <b>28.7</b> | <b>18.0</b> | <b>3.2</b> | <b>21.2</b> |
|                      |                           |            |             |             |            |             |             |            |             |
|                      | Cohort Reaching Age 60 in |            |             |             |            |             |             |            |             |
|                      | 2004                      |            |             | 2025        |            |             | 2050        |            |             |
| Allowance - Males    | Partial                   | Full       | Total       | Partial     | Full       | Total       | Partial     | Full       | Total       |
| 60                   | 0.4                       | 0.1        | 0.5         | 0.3         | 0.1        | 0.3         | 0.2         | 0.0        | 0.2         |
| 61                   | 0.6                       | 0.1        | 0.7         | 0.4         | 0.1        | 0.4         | 0.2         | 0.1        | 0.3         |
| 62                   | 0.8                       | 0.1        | 0.9         | 0.5         | 0.0        | 0.5         | 0.3         | 0.0        | 0.3         |
| 63                   | 1.2                       | 0.1        | 1.3         | 0.8         | 0.0        | 0.8         | 0.5         | 0.0        | 0.5         |
| 64                   | 2.0                       | 0.1        | 2.0         | 1.2         | 0.1        | 1.2         | 0.7         | 0.0        | 0.7         |
| <b>All Ages</b>      | <b>1.0</b>                | <b>0.1</b> | <b>1.1</b>  | <b>0.6</b>  | <b>0.1</b> | <b>0.7</b>  | <b>0.4</b>  | <b>0.0</b> | <b>0.4</b>  |
| Allowance - Females  |                           |            |             |             |            |             |             |            |             |
| 60                   | 5.7                       | 0.5        | 6.2         | 3.2         | 0.3        | 3.5         | 1.9         | 0.2        | 2.2         |
| 61                   | 7.9                       | 0.6        | 8.6         | 4.8         | 0.5        | 5.3         | 3.0         | 0.3        | 3.3         |
| 62                   | 10.3                      | 0.6        | 10.9        | 6.4         | 0.4        | 6.7         | 3.9         | 0.3        | 4.1         |
| 63                   | 13.0                      | 0.7        | 13.8        | 8.2         | 0.5        | 8.7         | 4.9         | 0.3        | 5.3         |
| 64                   | 15.8                      | 0.8        | 16.6        | 10.0        | 0.5        | 10.5        | 6.0         | 0.4        | 6.3         |
| <b>All Ages</b>      | <b>10.5</b>               | <b>0.6</b> | <b>11.2</b> | <b>6.5</b>  | <b>0.4</b> | <b>6.9</b>  | <b>3.9</b>  | <b>0.3</b> | <b>4.2</b>  |

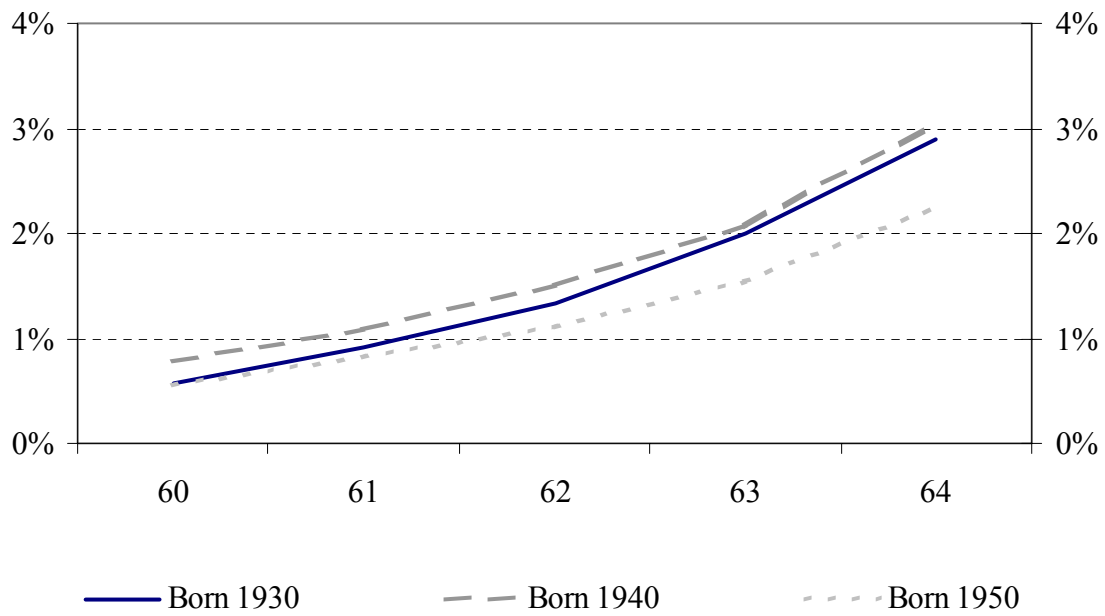
**Chart 15 GIS Single Recipient Rates (Males)**



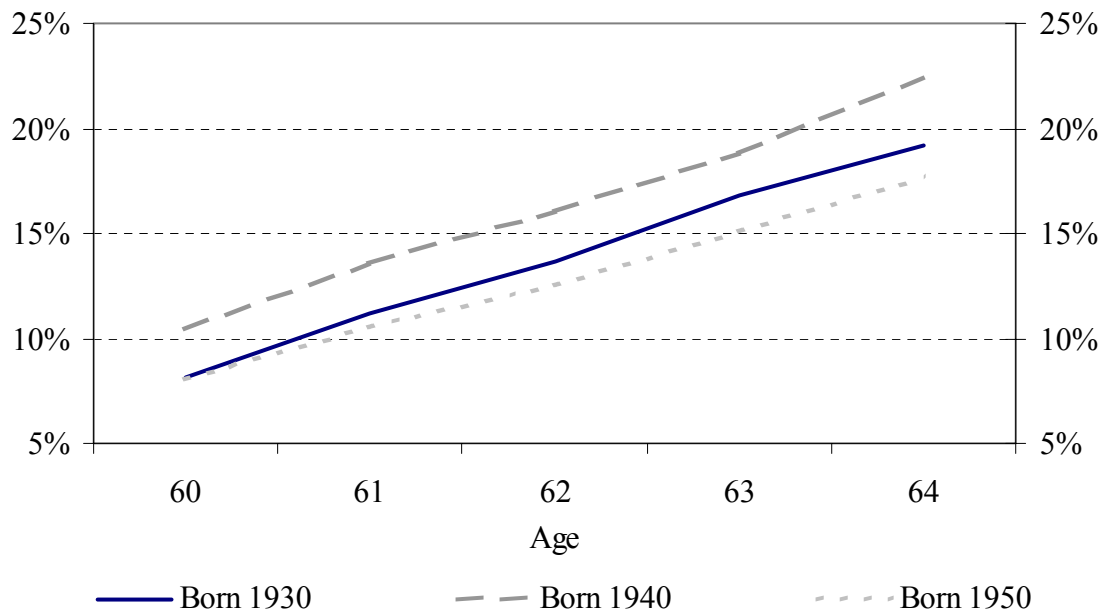
**Chart 16 GIS Single Recipient Rates (Females)**



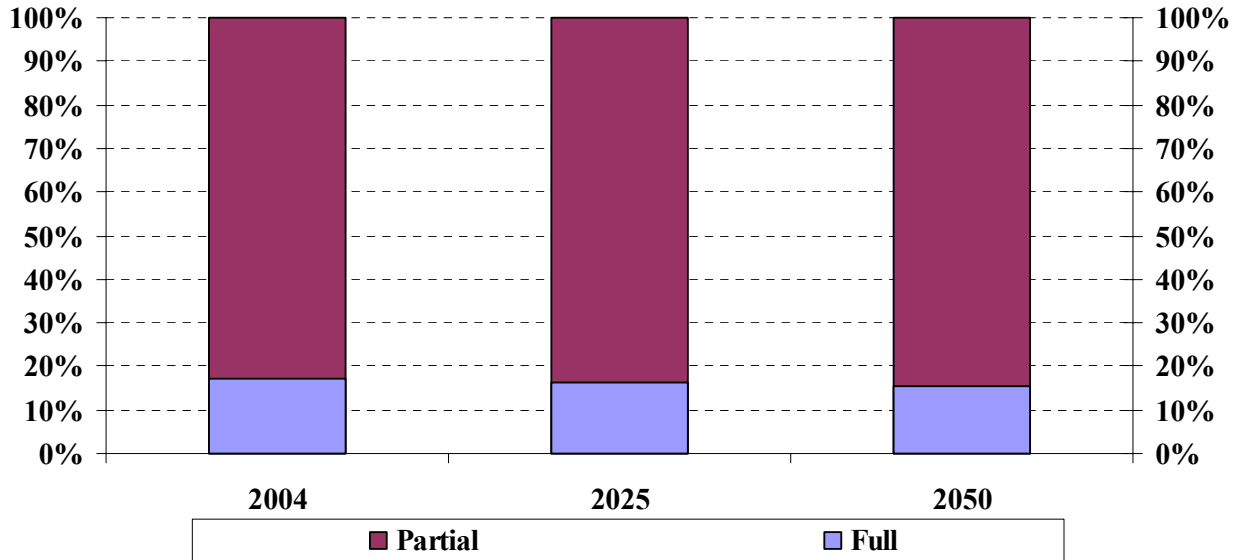
**Chart 17 Allowance Recipient Rates (Males)**



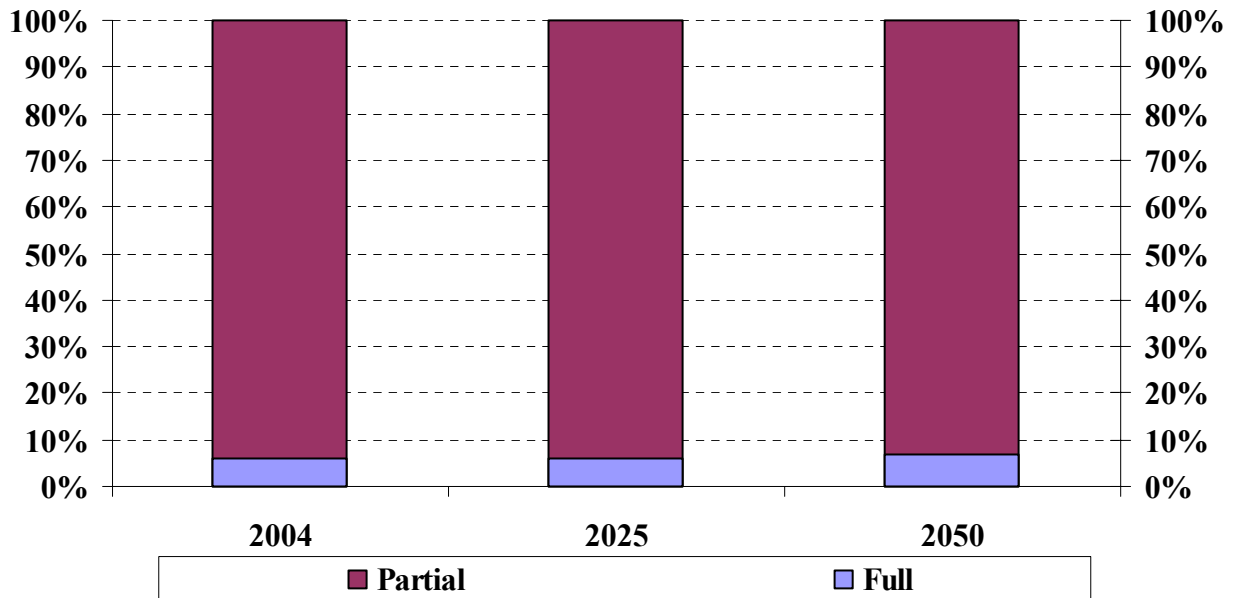
**Chart 18 Allowance Recipient Rates (Females)**



**Chart 19 GIS Recipient Rates by Level of Benefit**



**Chart 20 Allowance Recipient Rates by Level of Benefit**



### C. Average Benefit in Relation to Maximum Benefits

For each cell, determined by age group, sex, type of benefit and amount category, the average benefit paid was compared to the maximum benefit rate. In most cases, the averages were close to the midpoint of the amount category and did not vary significantly from year to year.

Therefore, except for the “100% and over” category for GIS, it was assumed that these averages would remain constant in future years, in accordance with their average levels over the most recent five-year period.

For GIS it is possible for a beneficiary to receive more than 100% of the maximum benefit if receiving a partial basic pension. In these cases, the maximum GIS benefit is increased by the difference between the full and partial basic pension. For this purpose, it was assumed that the average benefit as a percentage of the maximum would be kept at the 2000-2004 levels throughout the projection period. Table 33 presents the projected maximum benefits by type, while Table 34 presents the assumed benefit as a percentage of the maximum for each of the level and type of benefit.

**Table 33 Projected Maximum Monthly Benefits**

| Year<br>(1 July) | OAS<br>(\$) | GIS*           |                 | Allowance*      |                  |
|------------------|-------------|----------------|-----------------|-----------------|------------------|
|                  |             | Single<br>(\$) | Married<br>(\$) | Regular<br>(\$) | Survivor<br>(\$) |
| <b>2004</b>      | 466.63      | 554.59         | 361.24          | 827.87          | 913.99           |
| <b>2005</b>      | 475.96      | 565.68         | 368.46          | 844.43          | 932.27           |
| <b>2006</b>      | 485.48      | 595.00         | 390.33          | 875.82          | 968.92           |
| <b>2007</b>      | 495.19      | 624.90         | 412.64          | 907.83          | 1,006.29         |
| <b>2008</b>      | 505.10      | 637.39         | 420.89          | 925.99          | 1,026.42         |
| <b>2009</b>      | 515.54      | 650.57         | 429.59          | 945.13          | 1,047.64         |
| <b>2010</b>      | 526.71      | 664.67         | 438.90          | 965.61          | 1,070.34         |
| <b>2015</b>      | 594.96      | 750.80         | 495.78          | 1,090.74        | 1,209.03         |
| <b>2020</b>      | 679.73      | 857.78         | 566.42          | 1,246.15        | 1,381.31         |
| <b>2025</b>      | 776.59      | 980.00         | 647.13          | 1,423.72        | 1,578.13         |
| <b>2030</b>      | 887.25      | 1,119.64       | 739.34          | 1,626.58        | 1,803.00         |
| <b>2050</b>      | 1,511.65    | 1,907.60       | 1,259.65        | 2,771.31        | 3,071.88         |
| <b>2075</b>      | 2,942.47    | 3,713.19       | 2,451.95        | 5,394.42        | 5,979.49         |

\* The figures presented in Table 34 reflect the impacts of Part 23 of Bill C-43, which increase the single’s GIS maximum monthly benefit by \$18 and the married rate by \$14.50 effective 1 January 2006 and by an additional \$18 and \$14.50 effective 1 January 2007. Corresponding increases are also applicable for the Allowance maximum rates.



**Table 34 Average Benefits as Percentage of Maximum Rates**

|                                   | Males   |        |        |        |        |       |
|-----------------------------------|---------|--------|--------|--------|--------|-------|
|                                   | 0-19%   | 20-39% | 40-59% | 60-79% | 80-99% | 100%* |
| <b>OAS</b>                        | 10.6    | 27.0   | 49.2   | 68.9   | 88.6   | 100.0 |
| <b>GIS-Single</b>                 | 11.2    | 30.8   | 50.1   | 69.9   | 90.5   | 123.1 |
| <b>GIS-Spouse a pensioner</b>     | 11.3    | 30.3   | 49.8   | 68.8   | 89.3   | 173.6 |
| <b>GIS-Spouse not a pensioner</b> | 11.0    | 28.6   | 50.0   | 69.6   | 89.8   | 121.7 |
| <b>GIS-Spouse with Allowance</b>  | 0.0     | 0.0    | 45.5   | 69.8   | 89.8   | 125.8 |
| <b>Allowance-Regular</b>          | 10.3    | 30.1   | 47.5   | 69.7   | 90.8   | 100.0 |
| <b>Allowance-Survivor</b>         | 8.9     | 31.1   | 48.6   | 69.7   | 90.4   | 100.0 |
|                                   | Females |        |        |        |        |       |
|                                   | 0-19%   | 20-39% | 40-59% | 60-79% | 80-99% | 100%* |
| <b>OAS</b>                        | 9.9     | 26.8   | 49.2   | 68.8   | 88.5   | 100.0 |
| <b>GIS-Single</b>                 | 11.2    | 30.7   | 50.6   | 69.7   | 90.6   | 124.6 |
| <b>GIS-Spouse a pensioner</b>     | 11.2    | 30.3   | 49.8   | 68.8   | 89.3   | 171.2 |
| <b>GIS-Spouse not a pensioner</b> | 11.0    | 29.0   | 50.8   | 70.4   | 91.8   | 115.4 |
| <b>GIS-Spouse with Allowance</b>  | 0.0     | 0.0    | 45.4   | 70.2   | 89.6   | 116.8 |
| <b>Allowance-Regular</b>          | 10.6    | 30.0   | 47.4   | 69.4   | 90.7   | 100.0 |
| <b>Allowance-Survivor</b>         | 8.0     | 31.1   | 48.5   | 69.6   | 90.6   | 100.0 |

\* The proportion exceeds 100% for GIS benefits because the GIS maximum is raised for individuals receiving a partial OAS pension, to the extent that such pension falls short of a full OAS pension.

## V. Expenditures

### A. Benefits

The expenditure for each year for a given type of benefit was computed as the sum, over all relevant population cells, of the product of:

- the population as at 1 July (by age and sex);
- the recipient rates (varies by type of benefit, level of benefit, age, sex and calendar year);
- the average benefit of those in the level-of-benefit cell as a percentage of the maximum benefit (varies by type of benefit, age, sex and calendar year); and
- 12 times the maximum benefit as at 1 July.

As part of the methodology validation process, the number of beneficiaries and amounts of total annual benefits computed as above were compared to the actual results for 1983 through 2004 by type of benefit. Based on these comparisons, as described below, adjustments were made to the projected results.

The comparisons revealed that the actual numbers of beneficiaries tend to be slightly lower than the calculated numbers. Therefore, the numbers of beneficiaries projected as described above were multiplied by experience adjustment factors. Furthermore, even after adjusting the projected numbers of beneficiaries by the experience adjustment factors, the calculated total annual benefits tended to be lower than the actual expenditures. Therefore, the projected amounts of benefits were also multiplied by experience adjustment factors.

The resulting experience adjustment factors by type of benefit are presented in Table 35 and correspond to the historical actual-to-expected ratio over the most recent three years adjusted to reflect as closely as possible actual results for 2004.

**Table 35 Experience Adjustment Factors**

|                      | OAS   | GIS    |            |                | Allowance         |         |          |
|----------------------|-------|--------|------------|----------------|-------------------|---------|----------|
|                      |       | Single | Sp. a Pen. | Sp. Not a Pen. | Sp. Has Allowance | Regular | Survivor |
| <b>Beneficiaries</b> | 0.999 | 0.987  | 0.981      | 0.924          | 0.980             | 0.976   | 0.979    |
| <b>Benefits</b>      | 1.007 | 1.018  | 1.024      | 1.098          | 1.037             | 1.000   | 1.005    |

Detailed tables for the projected number of beneficiaries and total expenditures by sex, type and level of benefits are presented in Appendix E.

**B. Administrative expenses**

Historically, annual administrative expenses have averaged about 0.37% of total annual benefit payments. This has been assumed to continue throughout the projection period.

## Appendix C – Sensitivity Tests

This actuarial report is based on the projection of expenditures and cost measurement bases over a long period of time. The information required by statute, which is presented in Section IV of this report, has been derived using best-estimate assumptions regarding future demographic and economic trends. The key best-estimate assumptions, i.e. those for which changes within a reasonable range have the most significant impact on the long-term financial results, are described in Section III of this report.

Both the length of the projection period and the number of assumptions required ensure that actual future experience will not develop precisely in accordance with the best-estimate assumptions. For this purpose, individual sensitivity tests have been performed, consisting of projections of financial results using alternative assumptions.

The sensitivity tests were performed by varying each of the eight key assumptions individually with the remaining assumptions being maintained at their best-estimate levels. Two tests were performed with respect to each of the assumptions. The alternative assumptions selected are intended to represent a wide range of potential long-term experience. However, the results cannot properly be combined because a change in any particular assumption may impact on another to various degrees.

Each of these sensitivity tests was categorized as either a low-cost scenario or a high-cost scenario. In the low-cost scenarios, the alternative assumptions have the effect of reducing the ratios of expenditures to GDP. Conversely, in the high-cost scenarios, the assumptions would increase the cost ratios. Table 36 summarises the alternative assumptions used in the sensitivity tests. It is followed by a brief discussion of each assumption and the impact its variation has on the results.

**Table 36 Sensitivity-Test Assumptions**

|              |                                    | <b>Low-Cost</b>                 | <b>Best-Estimate</b>            | <b>High-Cost</b>                              |
|--------------|------------------------------------|---------------------------------|---------------------------------|---|
| <b>I.</b>    | Fertility rate                     | 1.90                            | 1.60                            | 1.30  |
| <b>II.</b>   | Net migration rate                 | 0.64%                           | 0.54%                           | 0.44%   |
| <b>III.</b>  | Mortality rates                    | Life expectancy at 65<br>(2050) | Life expectancy at 65<br>(2050) | Life expectancy at 65<br>(2050)               |
|              |                                    | Males 18.7                      | Males 20.0                      | Males 21.2                                    |
|              |                                    | Females 21.4                    | Females 22.6                    | Females 23.8                                  |
| <b>IV.</b>   | Unemployment rate                  | 4.5%                            | 6.5%                            | 8.5%  |
|              | Participation rates<br>(age 15-69) | 81% (2030)                      | 73% (2030)                      | 71% (2030)                                    |
| <b>V.</b>    | Real-wage differential             | 2.0%                            | 1.2%                            | 0.5%  |
| <b>VI.</b>   | Price increases                    | 3.7%                            | 2.7%                            | 1.7%  |
| <b>VII.</b>  | Recipient rates<br>(GIS-Allowance) | <u>2050</u>                     | <u>2050</u>                     | <u>2050</u>                                   |
|              |                                    | GIS: 17.5%                      | GIS: 21.9%                      | GIS: 26.3%                                    |
|              |                                    | Allowance: 2.0%                 | Allowance: 2.5%                 | Allowance: 3.0%                               |
| <b>VIII.</b> | Benefit indexation                 | CPI less 1%                     | CPI                             | CPI plus 60% of the<br>real-wage differential |

## **I. Fertility Rate**

The best-estimate assumption is that the total fertility rate for Canada will increase slightly from its 2001 level of 1.51 to an ultimate level of 1.60 in 2016. This lies between the medium and high assumptions adopted by Statistics Canada for its most recent population projections.

The low-cost assumption has the fertility rate increasing to an ultimate level of 1.90 in 2016. This is consistent with Statistics Canada's high assumption and represents a return to the levels typical of the early 1970s. Under this scenario, the population grows to a level in 2050 that is 10.5% higher than under the best-estimate assumption.

The high-cost assumption has the fertility rate decreasing to an ultimate level of 1.30 in 2016. This is consistent with Statistics Canada's low assumption and represents a continuation of the historical trend of decreases. Under this scenario, the population grows much more slowly, to a level in 2050 that is 9.7% lower than under the best-estimate assumption. Changes in the fertility rate have a small short-term impact on the CPP's financial position. However, the long-term impact of changes may be significant.

## II. Net Migration Rate

An ultimate best-estimate assumption of 0.54% of the population has been established for 2020 and thereafter. This level is reached in two steps; first a level of 0.50% is kept constant from 2004 until 2015, then the ultimate level of 0.54% is gradually reached in 2020. This is consistent with experience over the last 15 to 25 years and with the ultimate migration level between the medium and high Statistics Canada population projections.

The low-cost assumption has net migration increasing to an ultimate level of 0.64% of the population in 2020. Under this scenario, the population grows to a level in 2050 that is 4.5% higher than under the best-estimate assumption.

The high-cost assumption has net migration decreasing to an ultimate level of 0.44% of the population in 2020. Under this scenario, the population grows much more slowly, to a level in 2050 that is 4.3% lower than under the best-estimate assumption.

## III. Mortality Rates

Mortality improvements are expected to continue in the future. The best-estimate ultimate rates of improvement were established by adjusting the results of a detailed study prepared by the Office of the Chief Actuary of United States Social Security Administration regarding trends in mortality by age, sex and cause of death to reflect, in part, historical differences in mortality improvements between Canada and the United States. Rates of improvement are kept at their current levels for the first five years of projections and are then graded down to ultimate values by 2026.

For the low-cost scenario, mortality is assumed to improve less rapidly. Rates of improvement were assumed to grade down from recent levels to zero by 2026. Under this scenario, the population grows to a level in 2050 that is 1.7% lower than under the best-estimate assumption.

For the high-cost scenario, mortality is assumed to improve more rapidly. Rates of improvement were assumed to grade down from recent levels to 200% of the best-estimate ultimate levels by 2026. Under this scenario, the population grows to a level in 2050 that is 1.7% higher than under the best-estimate assumption.

The different rates of improvement result in the life expectancies presented in Table 37.

**Table 37 Life Expectancy in 2050 Under Alternative Assumptions\***

|                  |         | Low-Cost | Best-Estimate | High-Cost |
|------------------|---------|----------|---------------|-----------|
| <b>At Birth</b>  | Males   | 80.1     | 82.0          | 83.9      |
|                  | Females | 83.6     | 85.3          | 86.9      |
| <b>At Age 65</b> | Males   | 18.7     | 20.0          | 21.2      |
|                  | Females | 21.4     | 22.6          | 23.8      |

\* Calculated as if the mortality rates assumed for 2050 were applicable in all subsequent years.

#### **IV. Unemployment Rate – Participation Rates**

Employment levels are reflected in the actuarial projection model through the assumption made regarding the level of the labour force and job creation rates, by year, age and sex. These rates vary not only with the rate of unemployment, but also reflect trends in increased workforce participation by women, longer periods of formal education among young adults and the trends in retirement patterns of older workers. The ultimate level of unemployment assumed to apply in 2020 and thereafter is 6.5%.

For the low-cost scenario, the job creation rates are assumed to increase more rapidly, which results in an ultimate level of unemployment rate of 4.5% in 2020. For the high-cost scenario, the job creation rates are assumed to increase more slowly, which results in an ultimate level of unemployment rate of 8.5% in 2020.

Participation rates are used to estimate the active population. The best-estimate scenario divides the projection period into three periods, i.e. 2004 to 2010, 2010 to 2020 and 2020 to 2030. During the first period, the labour force participation rate for ages 15 to 69 decreases slightly from about 75% in 2003 to 74% in 2010. For 2010 to 2020, the participation rates continue to increase to compensate for the labour shortage, particularly at ages below 55. For 2020 to 2030, the baby boomers will have reached normal retirement age; combined with the projected low growth in the population, this leads to downward pressure on the ratio of active to working-age persons. For this reason, the participation rates of those aged 55 and over, especially for those aged 60 to 64, are increased to partially offset the decrease in the overall participation rate. This results in a slight increase in the active population over that period.

For the low-cost scenario, male participation rates are assumed to reach their highest historical level by 2030 and females are assumed over the same period to reach the level of males. This results in an overall participation rate of 81% for those aged 15 to 69 in 2030.

For the high-cost scenario, male and female participation rates are assumed to remain constant at their 2003 levels. This results in an overall participation rate of 71% for those aged 15 to 69 in 2030.

#### **V. Real-Wage Differential**

Wage increases impact the financial balance of the Old Age Security program in two ways. In the short term, an increase in the average wage translates into higher combined CPP/QPP employment earnings, contributory earnings and GDP, with little immediate impact on benefits. Accordingly, this will result in lower cost ratios relative to these measurement bases. Over the longer term, higher average earnings may be expected to result in higher incomes among the retiree population and reduce the amounts of income-tested benefits.

The long-term projected financial position of the Old Age Security program is more dependent on the differential between the assumed annual rates of earnings increases and price increases (the real-wage differential) than on the absolute level of wage increases assumed. An ultimate real-wage differential of 1.2% has been assumed in years 2012 and thereafter for the best-estimate projections. Combined with the best-estimate price increase assumption of 2.7%, it results in assumed nominal annual increases in wages of 3.9% in

2015 and thereafter. During the initial years of the projection period, the real-wage differential is assumed to increase uniformly from 0.1% in 2004 to its ultimate level.

For the low-cost scenario, the assumed real-wage differential increases to an ultimate level of 2.0% in 2012. This corresponds to the highest real-wage differential ascertained from a series of economic forecasts and is much higher than recent experience.

For the high-cost scenario, the assumed real-wage differential increases to an ultimate level of 0.5% in 2006. While much lower than long-term historical averages, it nevertheless represents an improvement from shorter-term historical averages.

## **VI. Price Increases**

An ultimate annual rate of price increase of 2.7% has been assumed for the best-estimate projections. The rate of price increase is assumed at 2.0% from 2004 to 2008 and is then assumed to increase uniformly to its ultimate level of 2.7% in 2015.

For the low-cost scenario, the annual rate of price increase is assumed to rise to an ultimate level of 3.7% in 2015. This level of inflation is comparable to long-term historical averages. Although a higher rate of increase in prices results in higher OAS expenditures, it also results in higher combined CPP/QPP contributory earnings, total employment earnings and GDP (this is because the same real-wage differential is added to a higher base of inflation, producing a higher nominal rate of wage increase). The net effect is a decrease in the cost ratios.

For the high-cost scenario, the annual rate of price increase is assumed to be 1.7% for years 2004 and thereafter. This level of inflation is comparable to that of the 1960s and 1990s.

## **VII. Recipient Rates**

The best-estimate projection uses a formula described in Appendix B to project GIS and Allowance recipient rates. For the low-cost scenario, the same formula is used except that a 20% reduction is applied to the resulting recipient rates for GIS and Allowance. The reduction is phased in over three years and is maintained thereafter. It results in total GIS and Allowance benefits that are about 20% lower than in the best-estimate scenario.

For the high-cost scenario, the same formula is used except that a 20% increase is applied to the resulting recipient rates for total GIS and Allowance. The increase is phased in over three years and is maintained thereafter. It results in total GIS and Allowance benefits that are about 20% higher than in the best-estimate scenario.

## **VIII. Benefit Indexation**

The best-estimate projections are based on the plan provision for benefit rates to be indexed quarterly in accordance with price increases. Over time, indexing benefit rates more slowly than the rate of growth in average employment earnings means that benefits will replace a decreasing share of individuals' pre-retirement earnings. In the past, this issue has been addressed through occasional legislation providing ad hoc increases in the benefit rates.

For the low-cost scenario, the benefit indexation is assumed at CPI minus 1%.

For the high-cost scenario, the benefit rates are increased to partially reflect the growth in real wages. The assumption made for this test is that benefit rates would be indexed at rates equal to the assumed rate of growth in prices plus 60% of the assumed real-wage differential. Accordingly, the ultimate annual benefit indexation rate is assumed to be 3.4% instead of 2.7% under the best-estimate assumptions. Over the medium term, say 30 years, the overall impact of this indexation formula on costs is roughly comparable to the indexation basis inherent in the CPP and QPP, which provide benefits based on wage increases prior to retirement and price increases thereafter.

## X1. Results

Table 38 summarizes the projected impact on the cost ratios under each of the alternative sets of assumptions.

**Table 38 Sensitivity-Test Results**

| Assumption                               | Scenario      | Expenditures as a Percentage of GDP |      |      |      |
|--|---------------|-------------------------------------|------|------|------|
|  |               | 2010                                | 2025 | 2050 | 2075 |
|  | Best-Estimate | 2.43                                | 3.04 | 2.73 | 2.01 |
| I. Fertility rate                        | Low-Cost      | 2.43                                | 3.02 | 2.50 | 1.70 |
|  | High-Cost     | 2.43                                | 3.07 | 2.99 | 2.42 |
| II. Migration rate                       | Low-Cost      | 2.41                                | 2.96 | 2.63 | 1.94 |
|  | High-Cost     | 2.44                                | 3.10 | 2.83 | 2.08 |
| III. Mortality rates                     | Low-Cost      | 2.43                                | 3.02 | 2.59 | 1.82 |
|  | High-Cost     | 2.43                                | 3.07 | 2.86 | 2.19 |
| IV. Unemployment and Participation rates | Low-Cost      | 2.35                                | 2.76 | 2.42 | 1.78 |
|  | High-Cost     | 2.47                                | 3.20 | 2.88 | 2.12 |
| V. Real-wage differential                | Low-Cost      | 2.39                                | 2.62 | 1.90 | 1.15 |
|  | High-Cost     | 2.47                                | 3.50 | 3.82 | 3.39 |
| VI. Price increases                      | Low-Cost      | 2.43                                | 3.04 | 2.73 | 2.02 |
|  | High-Cost     | 2.44                                | 3.06 | 2.73 | 2.00 |
| VII. Recipient rates (GIS-Allowance)     | Low-Cost      | 2.32                                | 2.93 | 2.64 | 1.96 |
|  | High-Cost     | 2.54                                | 3.16 | 2.81 | 2.06 |
| VII. Benefit indexation                  | Low-Cost      | 2.26                                | 2.38 | 1.64 | 0.94 |
|  | High-Cost     | 2.50                                | 3.56 | 3.91 | 3.49 |



## Appendix D - Reconciliation With Previous Report

The results presented in this report differ from those presented in the previous report for a variety of reasons. Differences between the actual experience from 2001 through 2003 and that projected in the fifth actuarial report are addressed in section I below. Since historical results provide the starting point for the projections shown in this report, these historical differences also have an effect on projected future experience. The impacts of the experience update and the other factors that have significantly changed the projected results are addressed in section II below.

### I. Financial Results - 2001 to 2003

The financial results from 2001 through 2003 are summarized in Table 39.

**Table 39 Financial Results - 2001 to 2003**  
 (\$ million)

|                                 | <b>Actual</b>    | <b>Expected</b>  | <b>Difference</b> | <b>Ratio</b> |
|---------------------------------|------------------|------------------|-------------------|--------------|
| <b>Expenditures:</b>            |                  |                  |                   |              |
| OAS                             | 61,043           | 60,549           | 494               | 1.01         |
| GIS                             | 16,287           | 16,339           | (52)              | 1.00         |
| Allowance                       | 1,198            | 1,276            | (78)              | 0.94         |
| Administrative Expenses         | 292              | 351              | (59)              | 0.83         |
| <b>Total Expenditures</b>       | <b>78,820</b>    | <b>78,515</b>    | <b>305</b>        | <b>1.00</b>  |
| <b>Gross Domestic Product</b>   | <b>3,485,000</b> | <b>3,318,000</b> | <b>167,000</b>    | <b>1.05</b>  |
| <b>Expenditures as % of GDP</b> | <b>2.26</b>      | <b>2.37</b>      | <b>(0.11)</b>     | <b>0.95</b>  |

OAS expenditures during the period were about \$500 million higher than projected. For the most part, this is because the number of OAS beneficiaries was slightly higher than projected due to life expectancy being higher than expected over that period. GIS and Allowance expenditures were about \$130 million lower than anticipated mainly due to a lower than expected number of beneficiaries.

Administrative expenses were \$59 million or 17% lower than expected over the period because of a change in the historical data-reporting basis. The expected amount of administrative expenses would have been much closer to actual if this new reporting basis had been used in the 5<sup>th</sup> OAS Actuarial report to develop the assumption in respect of administrative expenses. The assumption would have, as per this report, have been about 0.37% of benefits paid as opposed to 0.45%.

Total GDP over the period was 5% higher than projected, due to the higher-than-projected growth in the economy. As a result, overall, expenditures in relation to GDP were about 5% lower than projected, being 2.26% of GDP instead of the expected 2.37%.

## II. Changes in Projected Results - 2004 to 2075

The ratio of expenditures to GDP in a given year is an important measure of the cost of the program. One way of understanding the differences between the best-estimate projections in this report and those presented in the fourth actuarial report is by looking at the effects of various factors on these cost ratios. The most significant effects are identified in the reconciliation presented in Table 40 below.

**Table 40 Reconciliation of Costs as a Percentage of GDP**  
 (OAS, GIS and Allowance combined)

|   | 2004          | 2025          | 2050          | 2075          |
|---|---------------|---------------|---------------|---------------|
| <b>Fifth Report Rates</b>                     | <b>2.39</b>   | <b>3.00</b>   | <b>2.71</b>   | <b>2.10</b>   |
| <b>I. Program Amendments</b>                  |               |               |               |               |
| 6 <sup>th</sup> Report (Part 23 of Bill C-43) | 0.00          | 0.05          | 0.04          | 0.02          |
| <b>Subtotal:</b>                              | <b>0.00</b>   | <b>0.05</b>   | <b>0.04</b>   | <b>0.02</b>   |
| <b>II. Improvements in Methodology</b>        | <b>(0.01)</b> | <b>(0.01)</b> | <b>(0.01)</b> | <b>(0.01)</b> |
| <b>III. Experience Update (2001-2003)</b>     |               |               |               |               |
| Demographic                                   | 0.01          | 0.06          | 0.12          | 0.09          |
| Economic                                      | (0.14)        | (0.16)        | (0.17)        | (0.12)        |
| Benefits                                      | (0.01)        | (0.01)        | 0.00          | 0.00          |
| <b>Subtotal:</b>                              | <b>(0.14)</b> | <b>(0.11)</b> | <b>(0.05)</b> | <b>(0.03)</b> |
| <b>IV. Changes in Assumptions</b>             |               |               |               |               |
| Fertility                                     | 0.00          | 0.02          | 0.05          | 0.03          |
| Net migration                                 | 0.00          | (0.01)        | (0.05)        | (0.05)        |
| Mortality                                     | 0.00          | 0.03          | 0.02          | 0.00          |
| Employment                                    | (0.05)        | (0.05)        | (0.03)        | (0.03)        |
| Real-wage differential                        | 0.07          | 0.04          | (0.04)        | (0.08)        |
| Price increases                               | 0.00          | 0.00          | (0.01)        | (0.01)        |
| Recipient Rates                               | 0.00          | 0.10          | 0.15          | 0.12          |
| Other assumptions                             | 0.01          | (0.02)        | (0.05)        | (0.04)        |
| <b>Subtotal:</b>                              | <b>0.03</b>   | <b>0.11</b>   | <b>0.04</b>   | <b>(0.07)</b> |
| <b>Total of I to IV</b>                       | <b>(0.12)</b> | <b>0.04</b>   | <b>0.02</b>   | <b>(0.09)</b> |
| <b>Seventh Report Rates</b>                   | <b>2.27</b>   | <b>3.04</b>   | <b>2.73</b>   | <b>2.01</b>   |

Since the fifth actuarial report as at 31 December 2000 there was an amendment pursuant of the adoption of Part 23 of Bill C-43, which increases the maximum monthly benefit payable for GIS and Allowance effective 1 January 2006 and 1 January 2007. As a result, the cost ratios increase by 0.05% by 2025 and by 0.02% by 2075.

The methodology reflects a number of improvements from that employed in the previous report. Overall, these refinements reduced the cost ratios by 0.01%.

The primary variations in experience during 2001 to 2003 were discussed above. Overall, the effect of the experience update was a reduction in the cost ratio of about 0.14% in 2004 and an ultimate reduction of about 0.03% in 2075.

Key assumptions, and changes made from the previous report, are outlined in Section III of the report. The effects of these changes may be summarized as follows:

- The decrease in the ultimate fertility rate increases the long-term cost ratios because its effect in slowing the growth in GDP outweighs the ultimate reductions in expenditures.
- Conversely, the marginally higher assumed level of net migration slightly decreases the cost ratios, as the higher levels of GDP outweigh the ultimate increases in expenditures.
- The revised mortality assumption increased the cost ratios since individuals are expected to live longer than in the previous report.
- The increase in the assumed proportions of earners in the population decreases the cost ratios since it results in higher levels of projected GDP.
- The change in the real-wage assumption increases the cost ratios in the short term due to somewhat lower expectations over that period as compared to the previous report. On the other hand, the cost ratios decrease in the long term due to the higher ultimate real wage assumption.
- The reduction in the assumed rate of price increases between 2004 and 2015 results in almost no change in the cost ratios, because the savings due to lower increases in benefits in payment are offset by the slower growth in GDP.
- Changes to the recipient rates assumptions have increased the ultimate cost ratios.

Some of the less significant assumptions, which are described in Appendix B, were also changed. For example, the experience adjustment factors applied in the projection of earnings and GDP were revised to reflect more recent experience. Overall, the changes in these other assumptions had a small impact on projected cost ratios.

## Appendix E – Detailed Projections of Beneficiaries and Expenditures

**Table 41 Beneficiaries (Basic Pension)**  
 (thousands)

| Year | Males   |       |       | Females |       |       | Both Sexes |       |        |
|------|---------|-------|-------|---------|-------|-------|------------|-------|--------|
|      | Partial | Full  | Total | Partial | Full  | Total | Partial    | Full  | Total  |
| 2004 | 129     | 1,645 | 1,774 | 155     | 2,149 | 2,305 | 284        | 3,794 | 4,078  |
| 2005 | 137     | 1,680 | 1,817 | 165     | 2,181 | 2,346 | 302        | 3,861 | 4,162  |
| 2006 | 146     | 1,719 | 1,865 | 175     | 2,219 | 2,394 | 321        | 3,938 | 4,259  |
| 2007 | 155     | 1,762 | 1,917 | 186     | 2,257 | 2,443 | 341        | 4,019 | 4,359  |
| 2008 | 165     | 1,812 | 1,977 | 198     | 2,301 | 2,499 | 363        | 4,113 | 4,476  |
| 2009 | 176     | 1,862 | 2,038 | 210     | 2,346 | 2,555 | 385        | 4,208 | 4,593  |
| 2010 | 187     | 1,916 | 2,103 | 223     | 2,397 | 2,619 | 410        | 4,313 | 4,723  |
| 2015 | 261     | 2,287 | 2,548 | 307     | 2,756 | 3,063 | 568        | 5,043 | 5,611  |
| 2020 | 352     | 2,693 | 3,045 | 411     | 3,173 | 3,584 | 763        | 5,866 | 6,629  |
| 2025 | 449     | 3,160 | 3,609 | 524     | 3,660 | 4,184 | 973        | 6,820 | 7,793  |
| 2050 | 659     | 4,154 | 4,813 | 780     | 4,753 | 5,533 | 1,439      | 8,907 | 10,346 |
| 2075 | 726     | 4,523 | 5,249 | 856     | 5,164 | 6,020 | 1,582      | 9,687 | 11,269 |

**Table 42 Expenditures (Basic Pension)**  
 (\$ million)

| Year | Males   |         |         | Females |         |         | Both Sexes |         |         |
|------|---------|---------|---------|---------|---------|---------|------------|---------|---------|
|      | Partial | Full    | Total   | Partial | Full    | Total   | Partial    | Full    | Total   |
| 2004 | 244     | 9,274   | 9,518   | 294     | 12,119  | 12,412  | 538        | 21,393  | 21,931  |
| 2005 | 279     | 9,660   | 9,939   | 333     | 12,543  | 12,876  | 611        | 22,203  | 22,815  |
| 2006 | 316     | 10,085  | 10,401  | 375     | 13,016  | 13,392  | 691        | 23,101  | 23,792  |
| 2007 | 357     | 10,543  | 10,900  | 421     | 13,503  | 13,923  | 777        | 24,046  | 24,823  |
| 2008 | 402     | 11,060  | 11,461  | 470     | 14,044  | 14,514  | 872        | 25,103  | 25,975  |
| 2009 | 451     | 11,601  | 12,053  | 525     | 14,613  | 15,138  | 976        | 26,214  | 27,190  |
| 2010 | 507     | 12,196  | 12,703  | 585     | 15,253  | 15,838  | 1,091      | 27,449  | 28,541  |
| 2015 | 908     | 16,438  | 17,346  | 1,016   | 19,815  | 20,830  | 1,923      | 36,253  | 38,176  |
| 2020 | 1,504   | 22,118  | 23,622  | 1,654   | 26,062  | 27,716  | 3,158      | 48,180  | 51,338  |
| 2025 | 2,257   | 29,654  | 31,911  | 2,463   | 34,341  | 36,804  | 4,721      | 63,995  | 68,715  |
| 2050 | 6,482   | 75,872  | 82,355  | 7,146   | 86,815  | 93,961  | 13,628     | 162,688 | 176,316 |
| 2075 | 13,840  | 160,809 | 174,649 | 15,197  | 183,606 | 198,803 | 29,037     | 344,415 | 373,452 |

**Table 43 GIS Beneficiaries (Total)**  
 (thousands)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 443     | 86   | 528   | 789     | 166  | 955   | 1,231      | 251  | 1,483 |
| 2005 | 451     | 91   | 541   | 804     | 166  | 970   | 1,254      | 257  | 1,511 |
| 2006 | 471     | 93   | 565   | 833     | 166  | 999   | 1,304      | 259  | 1,563 |
| 2007 | 492     | 96   | 588   | 862     | 165  | 1,027 | 1,354      | 261  | 1,615 |
| 2008 | 503     | 99   | 603   | 876     | 165  | 1,042 | 1,380      | 265  | 1,644 |
| 2009 | 514     | 102  | 616   | 890     | 166  | 1,056 | 1,404      | 268  | 1,672 |
| 2010 | 525     | 105  | 630   | 903     | 167  | 1,070 | 1,428      | 272  | 1,700 |
| 2015 | 594     | 121  | 714   | 978     | 181  | 1,160 | 1,572      | 302  | 1,874 |
| 2020 | 662     | 135  | 796   | 1,059   | 199  | 1,258 | 1,720      | 334  | 2,054 |
| 2025 | 730     | 150  | 880   | 1,151   | 218  | 1,370 | 1,881      | 368  | 2,249 |
| 2050 | 704     | 141  | 846   | 1,208   | 207  | 1,415 | 1,912      | 349  | 2,260 |
| 2075 | 551     | 113  | 664   | 980     | 164  | 1,144 | 1,532      | 277  | 1,809 |

**Table 44 GIS Expenditures (Total)**  
 (\$ million)

| Year | Males   |       |        | Females |       |        | Both Sexes |        |        |
|------|---------|-------|--------|---------|-------|--------|------------|--------|--------|
|      | Partial | Full  | Total  | Partial | Full  | Total  | Partial    | Full   | Total  |
| 2004 | 1,253   | 655   | 1,908  | 2,692   | 1,370 | 4,062  | 3,945      | 2,025  | 5,970  |
| 2005 | 1,313   | 708   | 2,020  | 2,773   | 1,395 | 4,168  | 4,086      | 2,103  | 6,188  |
| 2006 | 1,454   | 763   | 2,217  | 3,025   | 1,452 | 4,477  | 4,479      | 2,215  | 6,693  |
| 2007 | 1,606   | 819   | 2,426  | 3,289   | 1,509 | 4,798  | 4,895      | 2,328  | 7,224  |
| 2008 | 1,675   | 861   | 2,536  | 3,390   | 1,541 | 4,931  | 5,065      | 2,402  | 7,467  |
| 2009 | 1,747   | 902   | 2,650  | 3,495   | 1,577 | 5,073  | 5,243      | 2,480  | 7,722  |
| 2010 | 1,823   | 946   | 2,769  | 3,609   | 1,620 | 5,229  | 5,432      | 2,567  | 7,999  |
| 2015 | 2,343   | 1,222 | 3,565  | 4,386   | 1,982 | 6,368  | 6,728      | 3,204  | 9,932  |
| 2020 | 2,997   | 1,557 | 4,554  | 5,425   | 2,490 | 7,915  | 8,422      | 4,047  | 12,469 |
| 2025 | 3,791   | 1,973 | 5,764  | 6,746   | 3,125 | 9,871  | 10,537     | 5,099  | 15,635 |
| 2050 | 7,226   | 3,648 | 10,874 | 14,279  | 5,774 | 20,053 | 21,504     | 9,422  | 30,926 |
| 2075 | 11,261  | 5,658 | 16,919 | 22,976  | 8,918 | 31,894 | 34,237     | 14,576 | 48,813 |

**Table 45 GIS Beneficiaries (Single)**  
 (thousands)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 170     | 26   | 196   | 589     | 127  | 716   | 759        | 153  | 912   |
| 2005 | 181     | 29   | 210   | 603     | 126  | 729   | 783        | 156  | 939   |
| 2006 | 192     | 30   | 222   | 626     | 124  | 751   | 818        | 154  | 972   |
| 2007 | 204     | 30   | 234   | 649     | 122  | 772   | 853        | 152  | 1,005 |
| 2008 | 211     | 31   | 242   | 661     | 121  | 783   | 873        | 152  | 1,025 |
| 2009 | 219     | 31   | 250   | 672     | 121  | 793   | 891        | 152  | 1,043 |
| 2010 | 226     | 32   | 258   | 683     | 120  | 803   | 909        | 152  | 1,061 |
| 2015 | 262     | 37   | 299   | 737     | 129  | 866   | 999        | 165  | 1,164 |
| 2020 | 295     | 41   | 336   | 796     | 141  | 937   | 1,091      | 183  | 1,273 |
| 2025 | 330     | 46   | 376   | 869     | 156  | 1,025 | 1,198      | 202  | 1,401 |
| 2050 | 348     | 48   | 396   | 982     | 158  | 1,140 | 1,330      | 206  | 1,536 |
| 2075 | 285     | 41   | 327   | 818     | 128  | 946   | 1,103      | 169  | 1,272 |

**Table 46 GIS Expenditures (Single)**  
 (\$ million)

| Year | Males   |       |       | Females |       |        | Both Sexes |       |        |
|------|---------|-------|-------|---------|-------|--------|------------|-------|--------|
|      | Partial | Full  | Total | Partial | Full  | Total  | Partial    | Full  | Total  |
| 2004 | 640     | 219   | 859   | 2,266   | 1,076 | 3,341  | 2,905      | 1,295 | 4,200  |
| 2005 | 695     | 249   | 944   | 2,340   | 1,088 | 3,427  | 3,034      | 1,337 | 4,371  |
| 2006 | 773     | 264   | 1,037 | 2,545   | 1,119 | 3,664  | 3,317      | 1,383 | 4,701  |
| 2007 | 858     | 279   | 1,138 | 2,760   | 1,150 | 3,911  | 3,619      | 1,430 | 5,048  |
| 2008 | 908     | 289   | 1,197 | 2,847   | 1,164 | 4,011  | 3,754      | 1,453 | 5,208  |
| 2009 | 959     | 300   | 1,259 | 2,937   | 1,181 | 4,118  | 3,896      | 1,481 | 5,377  |
| 2010 | 1,011   | 313   | 1,324 | 3,034   | 1,206 | 4,240  | 4,045      | 1,519 | 5,564  |
| 2015 | 1,326   | 404   | 1,730 | 3,678   | 1,454 | 5,131  | 5,004      | 1,858 | 6,862  |
| 2020 | 1,712   | 522   | 2,234 | 4,540   | 1,827 | 6,367  | 6,252      | 2,349 | 8,601  |
| 2025 | 2,193   | 671   | 2,864 | 5,655   | 2,307 | 7,963  | 7,848      | 2,978 | 10,826 |
| 2050 | 4,483   | 1,376 | 5,859 | 12,507  | 4,507 | 17,014 | 16,990     | 5,882 | 22,873 |
| 2075 | 7,265   | 2,307 | 9,572 | 20,375  | 7,121 | 27,496 | 27,640     | 9,428 | 37,068 |

**Table 47 GIS Beneficiaries (Spouse a Pensioner)**  
 (thousands)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 182     | 31   | 213   | 182     | 32   | 213   | 363        | 63   | 426   |
| 2005 | 177     | 33   | 210   | 181     | 33   | 214   | 358        | 66   | 424   |
| 2006 | 182     | 34   | 216   | 186     | 35   | 221   | 368        | 69   | 437   |
| 2007 | 186     | 36   | 222   | 191     | 36   | 227   | 377        | 72   | 449   |
| 2008 | 187     | 38   | 224   | 193     | 37   | 230   | 380        | 75   | 455   |
| 2009 | 187     | 39   | 226   | 195     | 39   | 234   | 382        | 78   | 460   |
| 2010 | 188     | 40   | 228   | 197     | 40   | 237   | 384        | 80   | 464   |
| 2015 | 200     | 44   | 245   | 215     | 45   | 260   | 415        | 90   | 505   |
| 2020 | 222     | 49   | 271   | 234     | 50   | 284   | 457        | 99   | 555   |
| 2025 | 244     | 54   | 298   | 251     | 53   | 304   | 495        | 108  | 603   |
| 2050 | 224     | 50   | 274   | 192     | 41   | 233   | 416        | 91   | 507   |
| 2075 | 162     | 37   | 199   | 133     | 28   | 161   | 296        | 65   | 361   |

**Table 48 GIS Expenditures (Spouse a Pensioner)**  
 (\$ million)

| Year | Males   |       |       | Females |       |       | Both Sexes |       |       |
|------|---------|-------|-------|---------|-------|-------|------------|-------|-------|
|      | Partial | Full  | Total | Partial | Full  | Total | Partial    | Full  | Total |
| 2004 | 347     | 243   | 590   | 347     | 243   | 590   | 695        | 485   | 1,180 |
| 2005 | 343     | 257   | 600   | 350     | 255   | 605   | 693        | 512   | 1,205 |
| 2006 | 378     | 282   | 660   | 389     | 279   | 668   | 767        | 561   | 1,328 |
| 2007 | 414     | 307   | 721   | 430     | 303   | 733   | 843        | 610   | 1,454 |
| 2008 | 419     | 326   | 745   | 440     | 321   | 761   | 859        | 647   | 1,507 |
| 2009 | 425     | 344   | 769   | 451     | 339   | 790   | 876        | 684   | 1,560 |
| 2010 | 433     | 362   | 795   | 463     | 357   | 820   | 896        | 719   | 1,615 |
| 2015 | 515     | 453   | 968   | 568     | 457   | 1,025 | 1,083      | 910   | 1,993 |
| 2020 | 654     | 571   | 1,225 | 708     | 573   | 1,280 | 1,361      | 1,144 | 2,505 |
| 2025 | 818     | 724   | 1,543 | 864     | 704   | 1,568 | 1,683      | 1,428 | 3,111 |
| 2050 | 1,455   | 1,315 | 2,770 | 1,290   | 1,042 | 2,332 | 2,746      | 2,357 | 5,102 |
| 2075 | 2,058   | 1,868 | 3,926 | 1,745   | 1,405 | 3,149 | 3,803      | 3,273 | 7,076 |

**Table 49 GIS Beneficiaries (Spouse Not a Pensioner)**  
 (thousands)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 51      | 11   | 62    | 15      | 5    | 20    | 66         | 16   | 82    |
| 2005 | 54      | 11   | 65    | 16      | 5    | 21    | 69         | 16   | 86    |
| 2006 | 56      | 11   | 68    | 17      | 5    | 21    | 73         | 16   | 89    |
| 2007 | 59      | 12   | 71    | 17      | 5    | 22    | 76         | 16   | 93    |
| 2008 | 61      | 12   | 73    | 18      | 5    | 22    | 79         | 17   | 95    |
| 2009 | 63      | 13   | 75    | 18      | 4    | 23    | 81         | 17   | 98    |
| 2010 | 64      | 13   | 77    | 18      | 4    | 23    | 83         | 17   | 100   |
| 2015 | 74      | 15   | 88    | 21      | 5    | 25    | 94         | 19   | 114   |
| 2020 | 79      | 16   | 94    | 23      | 5    | 28    | 101        | 21   | 122   |
| 2025 | 82      | 17   | 99    | 25      | 6    | 31    | 108        | 22   | 130   |
| 2050 | 62      | 12   | 73    | 26      | 6    | 32    | 88         | 18   | 106   |
| 2075 | 41      | 7    | 48    | 24      | 5    | 29    | 64         | 13   | 77    |

**Table 50 GIS Expenditures (Spouse Not a Pensioner)**  
 (\$ million)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 159     | 94   | 253   | 69      | 43   | 112   | 229        | 137  | 365   |
| 2005 | 168     | 101  | 270   | 72      | 42   | 114   | 241        | 143  | 384   |
| 2006 | 186     | 109  | 295   | 79      | 43   | 122   | 265        | 152  | 417   |
| 2007 | 205     | 117  | 322   | 86      | 43   | 129   | 291        | 160  | 451   |
| 2008 | 213     | 123  | 336   | 90      | 43   | 133   | 303        | 166  | 469   |
| 2009 | 222     | 129  | 351   | 93      | 44   | 137   | 315        | 173  | 488   |
| 2010 | 231     | 135  | 366   | 97      | 44   | 141   | 328        | 179  | 507   |
| 2015 | 296     | 175  | 471   | 120     | 52   | 172   | 416        | 227  | 643   |
| 2020 | 362     | 214  | 576   | 152     | 65   | 217   | 514        | 279  | 793   |
| 2025 | 435     | 257  | 692   | 194     | 83   | 277   | 630        | 340  | 969   |
| 2050 | 641     | 354  | 995   | 424     | 170  | 594   | 1,065      | 524  | 1,589 |
| 2075 | 826     | 441  | 1,266 | 760     | 297  | 1,056 | 1,585      | 738  | 2,323 |



**Table 51 GIS Beneficiaries (Spouse with Allowance)**  
 (thousands)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 40      | 17   | 57    | 4       | 2    | 5     | 43         | 19   | 63    |
| 2005 | 39      | 17   | 57    | 4       | 2    | 6     | 43         | 19   | 63    |
| 2006 | 41      | 18   | 59    | 4       | 2    | 6     | 45         | 20   | 65    |
| 2007 | 43      | 18   | 61    | 4       | 2    | 6     | 47         | 20   | 68    |
| 2008 | 44      | 19   | 63    | 4       | 2    | 7     | 49         | 21   | 70    |
| 2009 | 46      | 20   | 65    | 4       | 2    | 7     | 50         | 22   | 72    |
| 2010 | 47      | 20   | 67    | 5       | 2    | 7     | 51         | 22   | 74    |
| 2015 | 57      | 25   | 82    | 5       | 3    | 8     | 63         | 28   | 91    |
| 2020 | 66      | 29   | 95    | 6       | 3    | 9     | 72         | 32   | 104   |
| 2025 | 74      | 32   | 106   | 7       | 3    | 10    | 81         | 36   | 116   |
| 2050 | 71      | 31   | 102   | 6       | 3    | 9     | 77         | 34   | 112   |
| 2075 | 63      | 28   | 90    | 5       | 3    | 8     | 68         | 30   | 99    |

**Table 52 GIS Expenditures (Spouse with Allowance)**  
 (\$ million)

| Year | Males   |       |       | Females |      |       | Both Sexes |       |       |
|------|---------|-------|-------|---------|------|-------|------------|-------|-------|
|      | Partial | Full  | Total | Partial | Full | Total | Partial    | Full  | Total |
| 2004 | 107     | 99    | 205   | 10      | 9    | 19    | 116        | 108   | 225   |
| 2005 | 107     | 100   | 207   | 11      | 11   | 22    | 118        | 111   | 229   |
| 2006 | 117     | 108   | 225   | 12      | 11   | 23    | 129        | 119   | 248   |
| 2007 | 129     | 116   | 245   | 13      | 12   | 25    | 142        | 128   | 270   |
| 2008 | 135     | 122   | 257   | 13      | 13   | 26    | 149        | 135   | 283   |
| 2009 | 142     | 129   | 271   | 14      | 13   | 27    | 156        | 142   | 298   |
| 2010 | 149     | 136   | 285   | 14      | 14   | 28    | 163        | 150   | 313   |
| 2015 | 205     | 190   | 395   | 20      | 19   | 39    | 225        | 209   | 434   |
| 2020 | 269     | 250   | 519   | 25      | 25   | 50    | 294        | 275   | 569   |
| 2025 | 345     | 321   | 666   | 32      | 31   | 63    | 376        | 353   | 729   |
| 2050 | 646     | 604   | 1,250 | 57      | 56   | 113   | 703        | 660   | 1,362 |
| 2075 | 1,112   | 1,042 | 2,154 | 97      | 96   | 193   | 1,210      | 1,137 | 2,347 |

**Table 53 Allowance Beneficiaries (Total)**  
 (thousands)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 7       | 1    | 8     | 80      | 5    | 85    | 87         | 6    | 93    |
| 2005 | 8       | 1    | 8     | 82      | 5    | 87    | 89         | 6    | 95    |
| 2006 | 8       | 1    | 8     | 85      | 5    | 90    | 93         | 6    | 98    |
| 2007 | 8       | 1    | 9     | 89      | 5    | 94    | 97         | 6    | 103   |
| 2008 | 8       | 1    | 9     | 91      | 5    | 97    | 100        | 6    | 106   |
| 2009 | 9       | 1    | 9     | 94      | 6    | 100   | 103        | 6    | 109   |
| 2010 | 9       | 1    | 9     | 97      | 6    | 103   | 106        | 6    | 112   |
| 2015 | 9       | 1    | 9     | 97      | 6    | 103   | 106        | 6    | 113   |
| 2020 | 9       | 1    | 10    | 99      | 6    | 105   | 108        | 7    | 115   |
| 2025 | 9       | 1    | 9     | 95      | 6    | 100   | 103        | 6    | 110   |
| 2050 | 5       | 0    | 6     | 56      | 4    | 60    | 61         | 5    | 66    |
| 2075 | 4       | 0    | 4     | 35      | 3    | 38    | 39         | 3    | 42    |

**Table 54 Allowance Expenditures (Total)**  
 (\$ million)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 32      | 6    | 38    | 333     | 56   | 389   | 365        | 62   | 428   |
| 2005 | 33      | 7    | 40    | 348     | 58   | 406   | 381        | 64   | 445   |
| 2006 | 36      | 7    | 43    | 379     | 60   | 439   | 415        | 67   | 482   |
| 2007 | 39      | 7    | 47    | 417     | 64   | 481   | 456        | 72   | 528   |
| 2008 | 41      | 8    | 49    | 438     | 67   | 505   | 479        | 75   | 553   |
| 2009 | 43      | 8    | 50    | 460     | 69   | 529   | 503        | 77   | 579   |
| 2010 | 45      | 8    | 53    | 486     | 72   | 558   | 531        | 80   | 611   |
| 2015 | 51      | 9    | 60    | 557     | 83   | 639   | 608        | 92   | 699   |
| 2020 | 61      | 11   | 72    | 654     | 99   | 752   | 714        | 110  | 824   |
| 2025 | 68      | 12   | 81    | 718     | 110  | 828   | 786        | 122  | 909   |
| 2050 | 83      | 18   | 100   | 862     | 150  | 1,012 | 945        | 167  | 1,112 |
| 2075 | 111     | 28   | 139   | 1,119   | 219  | 1,337 | 1,230      | 247  | 1,477 |

**Table 55 Allowance Beneficiaries (Regular)**  
 (thousands)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 5       | 0    | 5     | 55      | 2    | 57    | 61         | 2    | 63    |
| 2005 | 5       | 0    | 5     | 58      | 2    | 59    | 63         | 2    | 65    |
| 2006 | 5       | 0    | 6     | 60      | 2    | 62    | 66         | 2    | 68    |
| 2007 | 6       | 0    | 6     | 64      | 2    | 66    | 70         | 2    | 72    |
| 2008 | 6       | 0    | 6     | 66      | 2    | 69    | 72         | 2    | 75    |
| 2009 | 6       | 0    | 6     | 69      | 2    | 71    | 75         | 2    | 77    |
| 2010 | 6       | 0    | 6     | 71      | 2    | 74    | 77         | 2    | 80    |
| 2015 | 6       | 0    | 6     | 71      | 2    | 74    | 77         | 2    | 80    |
| 2020 | 6       | 0    | 6     | 71      | 2    | 74    | 77         | 2    | 80    |
| 2025 | 6       | 0    | 6     | 67      | 2    | 69    | 72         | 2    | 75    |
| 2050 | 3       | 0    | 3     | 35      | 1    | 36    | 38         | 1    | 39    |
| 2075 | 2       | 0    | 2     | 19      | 1    | 20    | 21         | 1    | 21    |

**Table 56 Allowance Expenditures (Regular)**  
 (\$ million)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 19      | 2    | 21    | 198     | 19   | 216   | 217        | 21   | 238   |
| 2005 | 20      | 2    | 22    | 210     | 20   | 230   | 230        | 22   | 252   |
| 2006 | 22      | 2    | 24    | 232     | 21   | 253   | 253        | 24   | 277   |
| 2007 | 24      | 3    | 26    | 259     | 23   | 281   | 282        | 25   | 307   |
| 2008 | 24      | 3    | 27    | 273     | 24   | 298   | 298        | 27   | 325   |
| 2009 | 25      | 3    | 28    | 289     | 25   | 314   | 314        | 28   | 342   |
| 2010 | 26      | 3    | 29    | 306     | 27   | 333   | 332        | 29   | 362   |
| 2015 | 29      | 3    | 32    | 347     | 30   | 378   | 376        | 33   | 409   |
| 2020 | 34      | 3    | 37    | 397     | 34   | 431   | 430        | 38   | 468   |
| 2025 | 37      | 3    | 40    | 423     | 37   | 460   | 460        | 40   | 500   |
| 2050 | 38      | 5    | 43    | 431     | 37   | 468   | 469        | 42   | 511   |
| 2075 | 43      | 9    | 52    | 458     | 40   | 498   | 501        | 49   | 550   |

**Table 57 Allowance Beneficiaries (Survivor)**  
 (thousands)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 2       | 0    | 3     | 24      | 3    | 28    | 26         | 4    | 30    |
| 2005 | 2       | 0    | 3     | 24      | 3    | 27    | 26         | 4    | 30    |
| 2006 | 2       | 0    | 3     | 24      | 3    | 28    | 27         | 4    | 30    |
| 2007 | 2       | 0    | 3     | 25      | 3    | 28    | 27         | 4    | 31    |
| 2008 | 3       | 0    | 3     | 25      | 3    | 28    | 28         | 4    | 31    |
| 2009 | 3       | 0    | 3     | 25      | 3    | 29    | 28         | 4    | 32    |
| 2010 | 3       | 0    | 3     | 26      | 3    | 29    | 29         | 4    | 32    |
| 2015 | 3       | 0    | 3     | 26      | 4    | 30    | 29         | 4    | 33    |
| 2020 | 3       | 0    | 4     | 28      | 4    | 32    | 31         | 4    | 35    |
| 2025 | 3       | 0    | 4     | 28      | 4    | 32    | 31         | 4    | 35    |
| 2050 | 2       | 0    | 3     | 21      | 3    | 24    | 23         | 3    | 27    |
| 2075 | 2       | 0    | 2     | 16      | 2    | 19    | 18         | 3    | 21    |

**Table 58 Allowance Expenditures (Survivor)**  
 (\$ million)

| Year | Males   |      |       | Females |      |       | Both Sexes |      |       |
|------|---------|------|-------|---------|------|-------|------------|------|-------|
|      | Partial | Full | Total | Partial | Full | Total | Partial    | Full | Total |
| 2004 | 13      | 4    | 17    | 136     | 37   | 173   | 149        | 41   | 190   |
| 2005 | 13      | 4    | 18    | 138     | 38   | 176   | 152        | 42   | 194   |
| 2006 | 15      | 4    | 19    | 147     | 39   | 186   | 162        | 44   | 205   |
| 2007 | 16      | 5    | 21    | 158     | 41   | 200   | 174        | 46   | 220   |
| 2008 | 17      | 5    | 22    | 164     | 43   | 207   | 181        | 48   | 229   |
| 2009 | 17      | 5    | 23    | 171     | 44   | 215   | 189        | 49   | 238   |
| 2010 | 19      | 5    | 24    | 180     | 45   | 225   | 198        | 51   | 249   |
| 2015 | 22      | 6    | 28    | 209     | 52   | 262   | 231        | 59   | 290   |
| 2020 | 27      | 8    | 35    | 257     | 64   | 321   | 284        | 72   | 356   |
| 2025 | 32      | 9    | 40    | 295     | 74   | 369   | 327        | 82   | 409   |
| 2050 | 45      | 13   | 58    | 431     | 112  | 543   | 476        | 125  | 601   |
| 2075 | 68      | 20   | 88    | 661     | 179  | 839   | 729        | 198  | 927   |

## Appendix F – Financial Results Excluding Part 23 of Bill C-43

**Table 59 Beneficiaries (excluding Part 23 of Bill C-43)**

| Year | Number of Beneficiaries |                    |                  | Recipient Rates* |            |          |
|------|-------------------------|--------------------|------------------|------------------|------------|----------|
|      | OAS<br>(thousands)      | GIS<br>(thousands) | A<br>(thousands) | OAS<br>(%)       | GIS<br>(%) | A<br>(%) |
| 2004 | 4,078                   | 1,483              | 93               | 98.5             | 35.8       | 6.4      |
| 2005 | 4,162                   | 1,511              | 95               | 98.7             | 35.8       | 6.2      |
| 2006 | 4,259                   | 1,538              | 97               | 98.8             | 35.7       | 6.1      |
| 2007 | 4,359                   | 1,563              | 100              | 98.8             | 35.4       | 5.9      |
| 2008 | 4,476                   | 1,591              | 103              | 98.9             | 35.2       | 5.7      |
| 2009 | 4,593                   | 1,618              | 106              | 98.9             | 34.8       | 5.6      |
| 2010 | 4,723                   | 1,644              | 109              | 99.1             | 34.5       | 5.5      |
| 2011 | 4,864                   | 1,672              | 111              | 99.1             | 34.1       | 5.5      |
| 2012 | 5,056                   | 1,710              | 110              | 99.2             | 33.5       | 5.3      |
| 2013 | 5,244                   | 1,746              | 108              | 99.3             | 33.1       | 5.2      |
| 2014 | 5,425                   | 1,780              | 108              | 99.3             | 32.6       | 5.0      |
| 2015 | 5,611                   | 1,813              | 109              | 99.4             | 32.1       | 4.9      |
| 2016 | 5,800                   | 1,845              | 110              | 99.4             | 31.6       | 4.8      |
| 2017 | 5,991                   | 1,878              | 111              | 99.5             | 31.2       | 4.7      |
| 2018 | 6,193                   | 1,912              | 112              | 99.6             | 30.7       | 4.6      |
| 2019 | 6,406                   | 1,949              | 112              | 99.6             | 30.3       | 4.5      |
| 2020 | 6,629                   | 1,987              | 112              | 99.6             | 29.9       | 4.4      |
| 2021 | 6,853                   | 2,024              | 111              | 99.7             | 29.4       | 4.3      |
| 2022 | 7,085                   | 2,062              | 111              | 99.7             | 29.0       | 4.3      |
| 2023 | 7,320                   | 2,101              | 110              | 99.8             | 28.6       | 4.2      |
| 2024 | 7,555                   | 2,138              | 109              | 99.8             | 28.2       | 4.1      |
| 2025 | 7,793                   | 2,176              | 107              | 99.8             | 27.9       | 4.0      |
| 2026 | 8,031                   | 2,213              | 103              | 99.9             | 27.5       | 4.0      |
| 2027 | 8,259                   | 2,247              | 100              | 99.9             | 27.2       | 3.9      |
| 2028 | 8,489                   | 2,280              | 95               | 100.0            | 26.9       | 3.9      |
| 2029 | 8,704                   | 2,310              | 90               | 100.0            | 26.5       | 3.8      |
| 2030 | 8,896                   | 2,334              | 85               | 100.0            | 26.2       | 3.6      |
| 2031 | 9,050                   | 2,350              | 83               | 100.1            | 26.0       | 3.5      |
| 2032 | 9,172                   | 2,358              | 81               | 100.1            | 25.7       | 3.5      |
| 2033 | 9,280                   | 2,362              | 79               | 100.2            | 25.5       | 3.4      |
| 2034 | 9,381                   | 2,363              | 78               | 100.2            | 25.2       | 3.4      |
| 2035 | 9,479                   | 2,363              | 76               | 100.3            | 25.0       | 3.3      |
| 2040 | 9,801                   | 2,320              | 72               | 100.4            | 23.8       | 2.9      |
| 2045 | 10,058                  | 2,254              | 70               | 100.3            | 22.5       | 2.7      |
| 2050 | 10,346                  | 2,187              | 64               | 100.3            | 21.2       | 2.4      |
| 2055 | 10,591                  | 2,099              | 60               | 100.3            | 19.9       | 2.2      |
| 2060 | 10,895                  | 2,018              | 52               | 100.3            | 18.6       | 2.0      |
| 2065 | 11,080                  | 1,929              | 46               | 100.4            | 17.5       | 1.9      |
| 2070 | 11,162                  | 1,836              | 43               | 100.4            | 16.5       | 1.7      |
| 2075 | 11,269                  | 1,750              | 41               | 100.4            | 15.6       | 1.5      |

\* The overall projected basic OAS pension recipient rates and number of beneficiaries are on a gross basis (i.e. before application of the clawback provision). All recipient rates include benefits paid outside Canada and for this reason may exceed 100%.

**Table 60 Expenditures and Average Annual Benefits (excluding Part 23 of Bill C-43)**

| Year | Expenditures* (\$ million) |        |       |                         |         | Average Annual Benefit* (\$) |        |        |
|------|----------------------------|--------|-------|-------------------------|---------|------------------------------|--------|--------|
|      | OAS                        | GIS    | A     | Administrative Expenses | Total   | OAS                          | GIS    | A      |
| 2004 | 21,931                     | 5,970  | 428   | 105                     | 28,434  | 5,378                        | 4,026  | 4,615  |
| 2005 | 22,815                     | 6,188  | 445   | 109                     | 29,557  | 5,481                        | 4,095  | 4,691  |
| 2006 | 23,793                     | 6,379  | 464   | 113                     | 30,749  | 5,587                        | 4,149  | 4,788  |
| 2007 | 24,823                     | 6,573  | 489   | 118                     | 32,003  | 5,694                        | 4,206  | 4,884  |
| 2008 | 25,975                     | 6,792  | 513   | 123                     | 33,403  | 5,804                        | 4,269  | 4,993  |
| 2009 | 27,190                     | 7,021  | 538   | 129                     | 34,878  | 5,919                        | 4,340  | 5,095  |
| 2010 | 28,541                     | 7,270  | 566   | 135                     | 36,512  | 6,044                        | 4,422  | 5,199  |
| 2011 | 30,040                     | 7,546  | 593   | 141                     | 38,320  | 6,176                        | 4,513  | 5,320  |
| 2012 | 31,948                     | 7,892  | 601   | 150                     | 40,591  | 6,319                        | 4,614  | 5,483  |
| 2013 | 33,933                     | 8,254  | 610   | 158                     | 42,955  | 6,471                        | 4,726  | 5,627  |
| 2014 | 35,983                     | 8,631  | 627   | 167                     | 45,408  | 6,632                        | 4,848  | 5,780  |
| 2015 | 38,176                     | 9,026  | 649   | 177                     | 48,028  | 6,804                        | 4,980  | 5,945  |
| 2016 | 40,499                     | 9,442  | 673   | 187                     | 50,801  | 6,983                        | 5,116  | 6,117  |
| 2017 | 42,932                     | 9,874  | 699   | 198                     | 53,703  | 7,166                        | 5,257  | 6,290  |
| 2018 | 45,538                     | 10,330 | 725   | 209                     | 56,802  | 7,353                        | 5,402  | 6,472  |
| 2019 | 48,339                     | 10,818 | 746   | 222                     | 60,125  | 7,546                        | 5,551  | 6,665  |
| 2020 | 51,338                     | 11,334 | 765   | 235                     | 63,672  | 7,744                        | 5,704  | 6,862  |
| 2021 | 54,461                     | 11,864 | 787   | 248                     | 67,360  | 7,947                        | 5,861  | 7,057  |
| 2022 | 57,789                     | 12,421 | 804   | 263                     | 71,277  | 8,156                        | 6,023  | 7,266  |
| 2023 | 61,278                     | 13,000 | 821   | 278                     | 75,377  | 8,371                        | 6,188  | 7,477  |
| 2024 | 64,902                     | 13,595 | 836   | 294                     | 79,627  | 8,591                        | 6,359  | 7,694  |
| 2025 | 68,715                     | 14,215 | 844   | 310                     | 84,084  | 8,818                        | 6,534  | 7,921  |
| 2026 | 72,684                     | 14,854 | 844   | 327                     | 88,709  | 9,050                        | 6,713  | 8,155  |
| 2027 | 76,720                     | 15,496 | 838   | 344                     | 93,398  | 9,289                        | 6,897  | 8,385  |
| 2028 | 80,935                     | 16,157 | 822   | 362                     | 98,276  | 9,535                        | 7,086  | 8,641  |
| 2029 | 85,184                     | 16,818 | 802   | 380                     | 103,184 | 9,787                        | 7,280  | 8,906  |
| 2030 | 89,364                     | 17,462 | 784   | 398                     | 108,008 | 10,045                       | 7,480  | 9,177  |
| 2031 | 93,299                     | 18,059 | 779   | 415                     | 112,552 | 10,310                       | 7,685  | 9,434  |
| 2032 | 97,050                     | 18,617 | 784   | 431                     | 116,882 | 10,581                       | 7,896  | 9,694  |
| 2033 | 100,780                    | 19,158 | 791   | 447                     | 121,176 | 10,861                       | 8,112  | 9,968  |
| 2034 | 104,574                    | 19,695 | 798   | 463                     | 125,530 | 11,148                       | 8,334  | 10,259 |
| 2035 | 108,472                    | 20,237 | 802   | 479                     | 129,990 | 11,444                       | 8,563  | 10,567 |
| 2040 | 127,935                    | 22,752 | 874   | 561                     | 152,122 | 13,053                       | 9,806  | 12,199 |
| 2045 | 149,977                    | 25,307 | 984   | 652                     | 176,920 | 14,911                       | 11,226 | 14,090 |
| 2050 | 176,316                    | 28,122 | 1,036 | 760                     | 206,234 | 17,042                       | 12,861 | 16,295 |
| 2055 | 206,208                    | 30,937 | 1,123 | 882                     | 239,150 | 19,471                       | 14,742 | 18,824 |
| 2060 | 242,335                    | 34,093 | 1,136 | 1,027                   | 278,591 | 22,243                       | 16,894 | 21,767 |
| 2065 | 281,443                    | 37,336 | 1,155 | 1,184                   | 321,118 | 25,400                       | 19,352 | 25,167 |
| 2070 | 323,788                    | 40,694 | 1,248 | 1,353                   | 367,083 | 29,007                       | 22,166 | 29,075 |
| 2075 | 373,452                    | 44,427 | 1,379 | 1,551                   | 420,809 | 33,141                       | 25,386 | 33,612 |

\* The projected basic OAS pension expenditures and average benefit are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.

**Table 61 Expenditures as Percentage of GDP (excluding Part 23 of Bill C-43)**

| Year | Gross Domestic<br>Product<br>(\$ billion) | Expenditures as % of Gross Domestic Product* |            |          |                                   | Total<br>(%) |
|------|---|--|------------|----------|-----------------------------------|--------------|
|      |   | OAS<br>(%)                                   | GIS<br>(%) | A<br>(%) | Administrative<br>Expenses<br>(%) |              |
| 2004 | 1,253                                     | 1.75   | 0.48       | 0.03     | 0.01                              | 2.27         |
| 2005 | 1,291                                     | 1.77   | 0.48       | 0.03     | 0.01                              | 2.29         |
| 2006 | 1,332                                     | 1.79   | 0.48       | 0.03     | 0.01                              | 2.31         |
| 2007 | 1,375                                     | 1.81   | 0.48       | 0.04     | 0.01                              | 2.33         |
| 2008 | 1,421                                     | 1.83   | 0.48       | 0.04     | 0.01                              | 2.35         |
| 2009 | 1,475                                     | 1.84   | 0.48       | 0.04     | 0.01                              | 2.37         |
| 2010 | 1,534                                     | 1.86   | 0.47       | 0.04     | 0.01                              | 2.38         |
| 2011 | 1,597                                     | 1.88   | 0.47       | 0.04     | 0.01                              | 2.40         |
| 2012 | 1,665                                     | 1.92   | 0.47       | 0.04     | 0.01                              | 2.44         |
| 2013 | 1,737                                     | 1.95   | 0.48       | 0.04     | 0.01                              | 2.47         |
| 2014 | 1,813                                     | 1.98   | 0.48       | 0.03     | 0.01                              | 2.50         |
| 2015 | 1,893                                     | 2.02   | 0.48       | 0.03     | 0.01                              | 2.54         |
| 2016 | 1,977                                     | 2.05   | 0.48       | 0.03     | 0.01                              | 2.57         |
| 2017 | 2,061                                     | 2.08   | 0.48       | 0.03     | 0.01                              | 2.61         |
| 2018 | 2,147                                     | 2.12   | 0.48       | 0.03     | 0.01                              | 2.65         |
| 2019 | 2,235                                     | 2.16   | 0.48       | 0.03     | 0.01                              | 2.69         |
| 2020 | 2,325                                     | 2.21   | 0.49       | 0.03     | 0.01                              | 2.74         |
| 2021 | 2,416                                     | 2.25   | 0.49       | 0.03     | 0.01                              | 2.79         |
| 2022 | 2,509                                     | 2.30   | 0.50       | 0.03     | 0.01                              | 2.84         |
| 2023 | 2,606                                     | 2.35   | 0.50       | 0.03     | 0.01                              | 2.89         |
| 2024 | 2,707                                     | 2.40   | 0.50       | 0.03     | 0.01                              | 2.94         |
| 2025 | 2,811                                     | 2.44   | 0.51       | 0.03     | 0.01                              | 2.99         |
| 2026 | 2,922                                     | 2.49   | 0.51       | 0.03     | 0.01                              | 3.04         |
| 2027 | 3,038                                     | 2.53   | 0.51       | 0.03     | 0.01                              | 3.07         |
| 2028 | 3,159                                     | 2.56   | 0.51       | 0.03     | 0.01                              | 3.11         |
| 2029 | 3,286                                     | 2.59   | 0.51       | 0.02     | 0.01                              | 3.14         |
| 2030 | 3,419                                     | 2.61   | 0.51       | 0.02     | 0.01                              | 3.16         |
| 2031 | 3,558                                     | 2.62   | 0.51       | 0.02     | 0.01                              | 3.16         |
| 2032 | 3,705                                     | 2.62   | 0.50       | 0.02     | 0.01                              | 3.15         |
| 2033 | 3,859                                     | 2.61   | 0.50       | 0.02     | 0.01                              | 3.14         |
| 2034 | 4,021                                     | 2.60   | 0.49       | 0.02     | 0.01                              | 3.12         |
| 2035 | 4,189                                     | 2.59   | 0.48       | 0.02     | 0.01                              | 3.10         |
| 2040 | 5,148                                     | 2.49   | 0.44       | 0.02     | 0.01                              | 2.95         |
| 2045 | 6,296                                     | 2.38   | 0.40       | 0.02     | 0.01                              | 2.81         |
| 2050 | 7,670                                     | 2.30   | 0.37       | 0.01     | 0.01                              | 2.69         |
| 2055 | 9,341                                     | 2.21   | 0.33       | 0.01     | 0.01                              | 2.56         |
| 2060 | 11,405                                    | 2.12   | 0.30       | 0.01     | 0.01                              | 2.44         |
| 2065 | 14,004                                    | 2.01   | 0.27       | 0.01     | 0.01                              | 2.29         |
| 2070 | 17,238                                    | 1.88   | 0.24       | 0.01     | 0.01                              | 2.13         |
| 2075 | 21,181                                    | 1.76   | 0.21       | 0.01     | 0.01                              | 1.99         |

\* The projected basic OAS pension expenditures are on a gross basis (i.e. before application of the clawback provision). All expenditures include benefits paid outside Canada.

## **Appendix G – Acknowledgements**

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