

# **Actuarial Report**

**As at 31 July 2002**

**on the**

## **CANADA STUDENT LOANS PROGRAM**



Office of the Superintendent of  
Financial Institutions Canada

Office of the Chief Actuary

Bureau du surintendant des  
institutions financières Canada

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14 May 2003

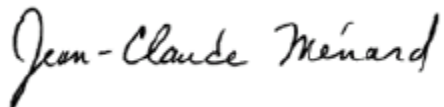
The Honourable Jane Stewart, P.C., M.P.  
Minister of Human Resources Development  
Gatineau, Canada

The Honourable John Manley, P.C., M.P.  
Minister of Finance  
Ottawa, Canada

Dear Ministers:

Pursuant to a request from the Assistant Deputy Minister, Human Resources Development Canada in September 2000, I am pleased to submit the second actuarial report as at 31 July 2002 on the Canada Student Loans Program established under the *Canada Student Loans Act* and the *Canada Student Financial Assistance Act*.

Yours sincerely,



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



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## **I- Executive Summary**

Effective 1 August 2000, the Government redesigned the delivery of the Canada Student Loans Program (CSLP) and moved the Program from one delivered by chartered banks to one directly financed by the Government. As part of this redesign, the Office of the Chief Actuary was given a mandate to conduct an actuarial review to provide a precise assessment of the current costs of the CSLP, a long-term (25 years) forecast of these costs, a portfolio projection, and a discussion of all the assumptions underlying the results of the review.

### **A - Purpose of the Report**

This is the second actuarial report on the CSLP established under the *Canada Student Loans Act* and the *Canada Student Financial Assistance Act*. It presents the results of an actuarial review of the CSLP as at 31 July 2002 and includes projections of future costs of the Program through the loan year 2026-27. An actuarial review of the CSLP is planned annually to provide an evaluation of the Program's overall financial costs and to increase the level of information to the Minister of Human Resources Development, the Minister of Finance, Parliament and the public.

In accordance with accepted actuarial practice, the main purpose of this actuarial report is to show estimates of:

- the number of students in the CSLP and new loans issued;
- projections of the portfolio of loans in-study, loans in repayment and Program cost elements by type of financial arrangement or regime. Also included are projections of the provisions and allowances under the new regime in effect since August 2000; and
- projections of the net cost of the new regime as well as the remaining net cost for the pre-2000 regimes.

### **B - Scope of the Report**

This valuation report is based on the Program provisions as described in Appendix 1. After a short discussion of our best-estimate assumptions in section A of the Main Report, section B presents projections of new loans issued, the number of eligible students to receive a loan and the average amount of new loans issued. Section C includes projections of the portfolio by type of regime. Section D contains projections for the operation of this Program, such as revenues and expenses for all three types of regimes. These are followed by a conclusion of our actuarial review and the actuarial opinion regarding this review.

The various appendices provide supplemental information on Program provisions, description of data, assumptions and methods employed and the sensitivity tests conducted.

## C - Main Findings

The results in this report present an overview of the Government's cost in being involved in the new Direct Loan Regime of the Canada Student Loans Program. The following summarizes the main findings of the report.

- The number of students receiving a CSLP loan in a year is expected to increase from 332,000 to 443,000 over the projection period. This represents an increase in the participation of the students in the CSLP from 42% to 58%.
- The total growth rate of new loans issued averages 2.0% a year during the projection period. It is composed of an average annual increase of 1.2% in the number of students in the CSLP and a 0.8% increase in the average loan size caused by keeping the weekly loan limit constant.
- The total amount of new loans issued increases from \$1.5 billion in the loan year 2001-02 to \$2.5 billion at the end of the projection period in 2026-27.
- The portfolio of student loans increases from \$9.8 billion to \$19.0 billion in 2026-27. In constant dollars, the portfolio is projected to decrease slightly during the same period from \$9.8 billion to \$9.7 billion. Moreover, by August 2018, the entire portfolio consists of loans issued in the Direct Loan Regime.
- The total net cost, which is defined as the difference between the expenses and the revenues of the Government's involvement in the CSLP, is expected to grow from \$826 million to \$1.3 billion in 2026-27. This represents an average annual increase in cost to the Government of 1.7%. The cost of the Government's involvement in constant 2002 dollars is expected to decrease from \$826 million to \$652 million. This represents an average annual decrease of 0.9% in constant dollars.
- In the projections, the percentage of students eligible who are at the loan limit increases from 45% to 84% in 2026-27. This demonstrates that an increase in the loan limit would have a significant impact on the long-term cost of the Program.
- A one-time increase of \$100 to the weekly loan limit (\$165 to \$265) in the loan year 2003-04, and maintained at that level thereafter, is included in Appendix 4 as a sensitivity test. In that test:
  - an additional \$330 million (19% increase) of new loans is issued in 2003-04 and an additional \$973 million (39% increase) in 2026-27; and
  - the portfolio reaches \$26.3 billion instead of the expected \$19.0 billion in the loan year 2026-27 and the total net cost for the Government's involvement in the CSLP increases by \$255 million (20% increase) in the loan year 2026-27.

## II- Main Report

The Canada Student Loans Program has been in effect since 1964 and provides Canadians with financial assistance to pursue a post-secondary education. Historically, two successive acts were established to permit the Minister to provide loans to eligible students under the Program. The *Canada Student Loans Act* was established applying to loan years preceding August 1995. The *Canada Student Financial Assistance Act* replaced the previous act for loan years after July 1995.

On 1 August 2000, the Government redesigned the delivery of the Program to disburse loans directly to students. The Office of the Chief Actuary was given the mandate to provide an assessment of the current costs of the CSLP, a long-term (25 years) forecast of these costs, a portfolio projection, as well as a discussion of all the assumptions underlying the results of the review.

The first section of the report provides a discussion on assumptions that reflects our best judgement; these assumptions are referred to in this report as the “best-estimate” assumptions. They are determined by putting more emphasis on elements affecting the growth of new loans issued and loan repayment assistance.

The projection of loans issued to eligible students for each loan year is presented in section B. This includes a projection of the student population (ages 18 to 34) to determine the future number of students enrolled in post-secondary education and eligible to qualify for a loan under the CSLP. A long-term demographic and economic context of the aging of the population and anticipated labour shortage serve as a basis for the examination of key elements that affect eligibility, such as the evolution of the projected student population, youth participation in the labour force, enrolment rate in post-secondary education, and the elimination of Grade 13 in Ontario.

The projection of the portfolio of loans for each arrangement is provided in section C and the forecast of the net cost of the CSLP is presented in section D. For the Government, there are higher public debt charges following the implementation of the new Direct Loan arrangement. The costs related to this Program include the interest subsidy on in-study loans, provisions for interest relief, debt reduction and bad debt (principal and interest), Canada Study Grants, alternative payments, loans forgiven, recovery costs and administration expenses. The costs are reduced by an estimation of the net interest revenues coming from students’ interest payments, interest relief payments, interest accrued on defaulted loans during the first three years and interest from recoveries for loans disbursed after 1 August 2000.

The actuarial estimates in this report are based on the current provisions of the Program as described in Appendix 1. The other appendices contain a more detailed description of the assumptions, the methodology, and sensitivity tests and results for changes in assumptions and projections, such as changes in the loan ceiling, interest rates and net default rates.

## **A - Best-estimate Assumptions**

Several economic and demographic assumptions are needed to determine future long-term costs of the CSLP. The projections included in this report cover a period of 25 years, and the assumptions are determined by putting as much emphasis on historical trends as on short-term experience. These assumptions reflect our best judgement and are referred to as the “best-estimate” assumptions. Some of the assumptions are based on those used by the Office of the Chief Actuary for the actuarial report on the Canada Pension Plan (CPP), adjusted to reflect loan year periods and current economic and demographic experience.

The assumptions were chosen to form a coherent whole, taking into account certain interrelationships among them. The following sections present the assumptions used as well as their future evolution.

### **1. Demographic Assumptions**

The demographic projections start with the Canadian and Québec population on 1 July 2000, to which are applied future fertility, mortality and migration assumptions. The population is adjusted to exclude the non-participating province of Québec and territories of the Northwest Territories and Nunavut, respectively. The CPP population projections are essential in determining the future number of students enrolled in and pursuing a post-secondary education.

### **2. Economic Assumptions**

The main economic assumptions related to the CSLP are the evolution of the labour force, inflation, tuition fees, wage increases, as well as the cost of borrowing for both students and the Government.

#### **a) Evolution of the Labour Force**

The “baby-boom” generation has and continues to exert a major influence on various aspects of society. The “baby-boom” generation represents a large cohort born between the mid-1940s and the mid-1960s. This generation has exerted the strongest single influence on Canadian demographics over the last several decades. The aging of this generation will have significant influences over the next 25 years, such as slowing down the natural population growth and changing the composition of the labour force.

The entry of the “baby-boom” generation into the labour market has influenced the school-to-work transition over the last 20 years. In the 1990s, youths aged 15 to 24 were more likely to be in school than were youths of previous decades, and because of poor labour market conditions they were less likely to find work.

During the last decade, poor labour market conditions have caused the school-to-work transition period to increase. Until recently, it was difficult for a great number of youths to find work. One of the key elements underlying the best-estimate economic assumptions relates to the expected labour shortage. This shortage will result from the aging of the population, the retirement of the “baby-boom” generation and the impact of these on the labour force growth and distribution.

Starting in 2011, a decline in the labour force growth rate for the population aged 18 to 34 will create more working opportunities and should reduce the school-to-work transition period for this group. The proportion of individuals aged 18 to 34 participating in the labour force is set to increase from 80.0% in the loan year 2002-03 to 82.3% in 2026-27. Therefore, youths will join the labour market sooner, thus reducing the proportion of the population inclined to remain within the educational system.

b) Inflation, Tuition Fees and Wage Increases

The desire of the Bank of Canada and the Federal Government to keep inflation between 1% and 3% suggests that the rate of inflation will be weak in the coming years. Hence, the annual inflation rate is assumed to be 2.7% in 2002-03, and 2.0% for years 2003-05. From 2005-06, the rate is then uniformly increased to its ultimate level of 3.0% in 2015-16.

Student expenses are used in needs assessment to determine the maximum amount of loan that can be issued. These expenses include food, shelter, transportation and clothing, all of which tend to vary with consumer prices. As a result, the future anticipated rate of inflation is used to project these expenses.

Tuition fees are treated separately from other expenses since their evolution is, in part, a result of government policies. An initial estimate for tuition growth is 9.6% in the loan year 2002-03 and is set at 4.0% for loan years 2003-04 to 2005-06 inclusive, based on stated intentions in provincial budgets and actual tuition growth as reported in news releases. In the past, government budgetary cost pressures caused tuition fees to rise more quickly than inflation. Since similar budgetary pressures are expected in the future with the aging of population, tuition fees are indexed to the rate of inflation plus 3.0% for the long-term, in accordance with past experience.

Future student resources, including wages and parental contributions, are influenced by the rate of increase of average annual earnings and increases in productivity. The rate of earnings increase is also related to changes in the manpower supply in the labour force. An increase in productivity and a decline in the labour force growth rate, especially after 2011-12, are assumed to force a relatively higher real wage growth. In 2002-03, the real growth in

average earnings is estimated to be -1.6%. From 2003-04, the real growth in average earnings increases gradually, reaching 1.1% by 2015-16.

c) Cost of Borrowing

Since August 2000, the student is indebted to the Government and, as a result, the Government bears the interest risk associated with the cost of borrowing for the whole duration of the loans. The loan's duration is a combination of two periods. First, a student is in school and receives an interest subsidy for an average of three years, after which time the student enters a period of repayment for the next ten years. The historic 10-year Government of Canada bond yield net of inflation is used as a benchmark to calculate the real cost of borrowing for the Government. The real cost is 3.8% in the loan year 2001-02, decreases to 2.2% in 2002-03, and then increases thereafter, gradually reaching 3.0% in 2013-14. The Government's cost consists of the real cost of borrowing and the rate of inflation as summarized in Table 1.

**Table 1 Borrowing Costs**

<b>Loan Year</b>	<b>Inflation (%)</b>	<b>Real Government Cost of Borrowing (%)</b>	<b>Government Cost of Borrowing (%)</b>	<b>Real Prime Rate (%)</b>	<b>Student Cost of Borrowing (%)</b>
	(1)	(2)	(1) + (2)	(3)	(1) + (3) + 250 pts
2001 - 2002	1.6	3.8	5.4	2.7	6.8
2002 - 2003	2.7	2.2	4.9	1.9	7.1
2003 - 2004	2.0	2.7	4.7	2.9	7.4
2004 - 2005	2.0	2.7	4.7	2.9	7.4
2005 - 2006	2.1	2.7	4.8	2.9	7.5
2006 - 2007	2.2	2.8	4.9	3.0	7.6
2007 - 2008	2.3	2.8	5.0	3.0	7.7
2008 - 2009	2.4	2.8	5.2	3.0	7.9
2009 - 2010	2.5	2.8	5.3	3.0	8.0
2010 - 2011	2.6	2.9	5.4	3.1	8.1
2011 - 2012	2.7	2.9	5.6	3.1	8.3
2012 - 2013	2.8	2.9	5.7	3.1	8.4
2013 - 2014	2.9	3.0	5.8	3.2	8.5
2014 - 2015	3.0	3.0	5.9	3.2	8.6
2015+	3.0	3.0	6.0	3.2	8.7

The historical prime rate is used as the benchmark to calculate the interest charged to students during repayment. The real prime rate is 2.7% for 2001-02 and is set to revert to its long-term average of 3.2%. The total student cost of borrowing, used to calculate the interest revenues and the cost of interest relief, is determined by adding to the real prime rate the inflation rate and 250 basis points. The student cost of borrowing is presented in the last column of Table 1.

### 3. Provision Assumptions

As of August 2000, the CSLP is directly delivered and financed by the Government. Three separate provisions have been established. For that reason, specific assumptions are made concerning the provision rate charged to newly issued loans to cover future losses. Specifically, assumptions are made for the provision rates charged to income related to future bad debts, debt reduction in repayment (DRR) and interest relief. A new provision for bad debt – interest must be set on newly impaired loans, because interest is accrued on impaired loans for three years and is accounted for as revenue.

In the previous report, the provision rate for bad debt was established at 11.3% on loans issued, and the DRR provision rate was set at 0.7%. It is assumed that these two provision rates will remain constant in the future.

**Table 2 Provision Assumptions**

Type of Provision	Assumptions		
	2002-2003	...	2014-2015
	(%)		(%)
<b>On new loans issued</b>			
Bad debt – principal	11.3		11.3
Debt reduction in repayment	<u>0.7</u>		<u>0.7</u>
<b>Subtotal</b>	<b>12.0</b>		<b>12.0</b>
Interest relief	<u>3.2</u>	...	<u>3.9</u>
<b>Total</b>	<b>15.2</b>	...	<b>15.9</b>
<b>On newly impaired loans</b>			
Bad debt – interest	<b>11.9</b>	...	<b>14.2</b>

Based on updated experience on the interest relief benefit being used by students experiencing financial difficulty and the recent decline in interest rates, the provision rate for interest relief is reduced from 5% to 2.6% for the loan year 2000-01, 3.0% for 2001-02 and 3.2% for 2002-03. Using our best-estimate assumption of rising future interest rates, the provision rate for interest relief is projected to increase to 3.9% by 2011. As a result of the decrease in the provision rates, the interest relief allowance must be reduced by \$68 million as of 31 July 2002. Effectively, the Government reduces this allowance by \$94 million in March 2003.

In the loan year 2001-02, the number of interest relief recipients has decreased by about 12%. However, the number of students using the interest relief benefit is projected to remain relatively stable in the future. The potential enhanced future economic environment will put downward pressure on the need for interest relief benefits, which should be counterbalanced by better communication to students leading to their increased awareness of the existence of the interest relief benefit.

Table 3 contains a summary of the best-estimate assumptions described previously.

**Table 3 Best-estimate Assumptions**

1. Total fertility rate for Canada	1.64 per woman
2. Mortality	1990-92 Life Tables for Canada with future improvements
3. Net migration rate	0.50% of the population graded to 0.52% in 2020+
4. Youth participation rate (participating provinces/territory, ages 18-34)	80.0% (2002-03) 82.3% (2026-27)
5. Real wage differential	-1.6% (2002-03) 0.6% (2003-04) ⋮ 1.1% (2015+)
6. Inflation	2.7% (2002-03) 2.0% (2003-05) ⋮ 3.0% (2015+)
7. Tuition fee increases	9.6% (2002-03) 4.0% (2003-06) ⋮ CPI + 3.0% (2010+)
8. Government cost of borrowing	4.9% (2002-03) ⋮ 6.0% (2015+)
9. Student borrowing cost	7.1% (2002-03) ⋮ 8.7% (2015+)
10. Bad debt provision - principal	11.3% (2002+)
11. Bad debt provision - interest	11.9% (2002-03) ⋮ 14.2% (2014+)
12. DRR provision	0.7% (2002+)
13. Interest relief provision	3.2% (2002-03) - One-time reduction to the interest relief allowance of \$68 million reflected in 2002-03 income ⋮ 3.9% (2011+) - Increase caused by rising future interest rates



## **B - Projections of New Loans Issued**

The projected aging of the population combined with the retirement of the “baby-boom” generation over the next decades will create significant social and economic changes. The evolution of the working-age population, especially the active population (those who are employed or who are seeking employment), will be quite different from what has historically been observed. The projected scenario establishes the student population that will be used throughout this report. This projection of full-time post-secondary students is used to estimate the number of CSLP recipients.

### **1. Projection of Post-secondary Enrolment**

The projection of the number of full-time students in post-secondary institutions must first be determined, since the number of students is linked to the potential demand for the CSLP. The enrolment of students in post-secondary education is expected to show a slight decrease over the next 25 years. The enrolment decreases after 2015 because of the anticipated labour shortage impact. Demographics, post-secondary enrolment and the phasing out of Grade 13 in Ontario will each have an impact on the progression of full-time students attending post-secondary institutions.

#### **a) Demographic Projections**

The population in the age range 18-34 is used to project the number of students enrolled in post-secondary institutions. An age distribution of students in the CSLP is applied to this population to derive the future enrolment in post-secondary institutions. The evolution of this population is practically known since it originates from individuals born after 1967.

In the first 14 years of the projection, children of the “baby-boom” generation, called the “echo”, are expected to contribute to the increase in the population for ages 18-34. The “baby-boom” generation is more numerous and, consequently, had more children than the previous generation, notwithstanding a lower fertility rate. In the last 11 years of the projection, the population aged 18-34 decreases. Overall, as Table 4 shows, a slight increase over the 25-year period in the population aged 18-34 is expected.

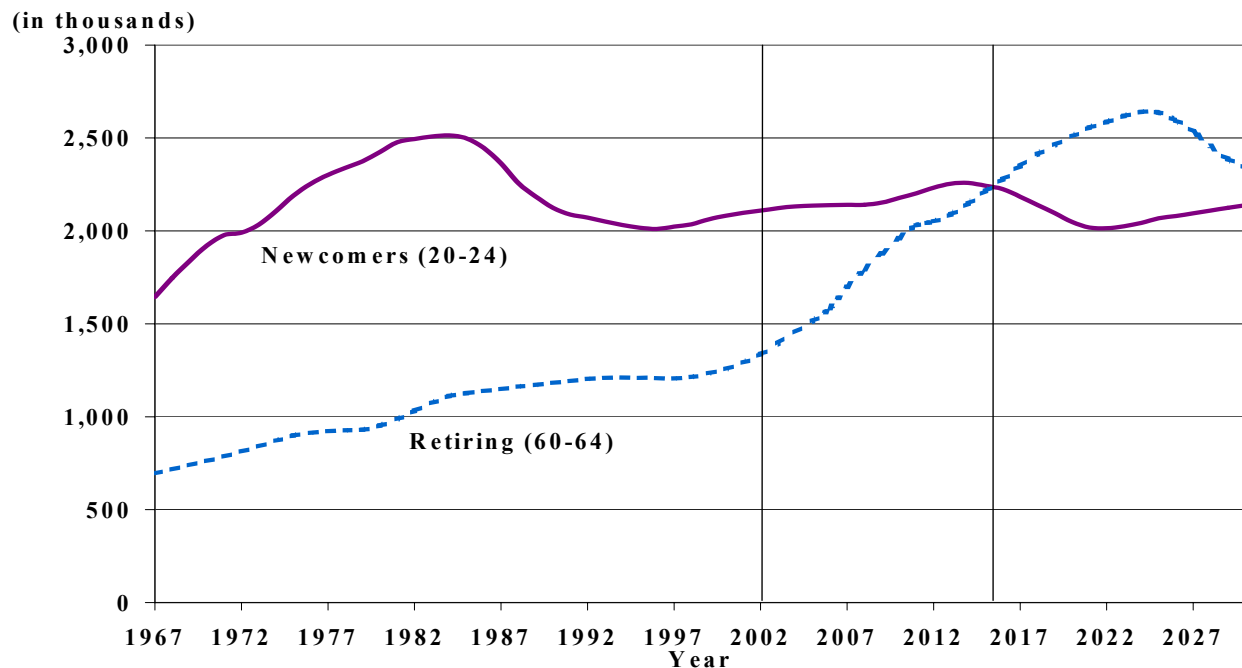
**Table 4 Population and Post-secondary Enrolment of Participating Provinces**

<b>Loan Year</b>	<b>Population of Canada Less Québec, NWT and Nunavut (18 – 34) (Thousands)</b>	<b>Not Participating in Labour Force (18 – 34) (Thousands)</b>	<b>Students Enrolled Full-time (Thousands)</b>	<b>Increase (Thousands)</b>	<b>Growth Rate (%)</b>
2001 - 2002	5,586	1,138	794	-	-
2002 - 2003	5,610	1,120	785	-8.7	-1.1
2003 - 2004	5,641	1,131	839	54.1	6.9
2004 - 2005	5,670	1,137	841	1.9	0.2
2005 - 2006	5,691	1,134	825	-16.7	-2.0
2006 - 2007	5,709	1,129	806	-19.0	-2.3
2007 - 2008	5,749	1,137	804	-1.3	-0.2
2008 - 2009	5,802	1,158	819	14.9	1.8
2009 - 2010	5,857	1,174	830	10.5	1.3
2010 - 2011	5,902	1,182	835	5.2	0.6
2011 - 2012	5,940	1,179	835	0.1	0.0
2012 - 2013	5,975	1,180	839	4.5	0.5
2013 - 2014	6,011	1,185	848	9.0	1.1
2014 - 2015	6,041	1,188	856	7.4	0.9
2015 - 2016	6,045	1,171	842	-14.0	-1.6
2016 - 2017	6,041	1,144	817	-24.6	-2.9
2017 - 2018	6,035	1,124	799	-18.8	-2.3
2018 - 2019	6,020	1,102	779	-20.0	-2.5
2019 - 2020	6,016	1,095	776	-2.9	-0.4
2020 - 2021	6,011	1,091	775	-0.5	-0.1
2021 - 2022	6,006	1,082	768	-7.1	-0.9
2022 - 2023	6,005	1,076	765	-3.4	-0.4
2023 - 2024	6,008	1,072	763	-1.5	-0.2
2024 - 2025	6,003	1,067	763	0.0	0.0
2025 - 2026	5,989	1,063	765	1.6	0.2
2026 - 2027	5,980	1,058	764	-0.4	0.0

b) Post-secondary Enrolment

The number of students enrolled full-time in post-secondary institutions is closely linked to the evolution of the population aged 18-34 not participating in the labour force. The massive amount of retirements from the “baby-boom” generation, combined with fewer replacement entrants in the labour force, will create a pressure on the labour market that has never been seen before. In the past, there were always many more newcomers (aged 20-24) joining the job market than persons reaching retirement age (60-64). During the last two decades, there was a double-digit unemployment rate caused not only by the recessions but also by a very strong labour supply. Chart 1 shows the evolution of the number of persons retiring to the number of newcomers from 1967.

**Chart 1 Evolution of Persons Retiring (60-64) to Newcomers (20-24)**



The number of persons retiring or in the age range 60-64 has always been very low in the past compared to the newcomers (representing less than 50%). This situation is expected to change radically over the next 14 to 25 years, creating an imbalance in the labour market. More specifically, in 2015, the number of persons retiring is expected to catch up with the number of newcomers, reaching 2,237,000 persons. By 2024, the number of persons retiring (2,641,000) will surpass by 29% the number of newcomers (2,043,000). The labour market will have to adapt because it is accustomed to having at least two newcomers for each person retiring; this ratio will decrease significantly to less than one newcomer for each person retiring.

As a result, the participation rates in the labour force are assumed to increase and the school-to-work transition period will be reduced because of favourable labour market conditions and increased availability of work.

In Table 4, the population not participating in the labour force is projected to increase overall from 1,138,000 to 1,182,000 during the next 9 years only because of the natural demographic evolution. Thereafter, because of the labour shortage, it decreases overall during the following 16 years by 124,000 to reach 1,058,000 at the end of the projection period. The number of students enrolled full-time in post-secondary institutions follows a similar pattern as the population not participating in the labour force and shows a decrease by the end of the projection period. A significant increase in the labour force participation rates in 2002 has led to a corresponding decrease in the number of students enrolled full-time in post-secondary institutions.

c) Double Cohort

Ontario's provincial government will have phased out Grade 13 by August 2003. According to the "Double Cohort Study Phase 2 Report for the Ontario Ministry of Education" dated October 17, 2002 by Dr. Alan King from the Social Program Evaluation Group at Queen's University, there was a significant increase in applications to Ontario universities and colleges in 2002. This was attributed to the uncertainty in available enrolment room for 2003. A significant number of these applicants were students under the old curriculum who had 'fast-tracked' their high school education in four years to avoid applying in 2003-04. The study projects that this increase will act to reduce the increase in the number of applications in 2003-04.

Table 4 shows an increase of 54,100 full-time students enrolled in 2003-04 for the participating provinces and territory. This increase consists of 42,300 additional students as a result of the elimination of Grade 13 in Ontario and the remaining 11,800 students coming from the natural demographic growth in the number of students enrolled in the participating provinces and territory. This increase is lower than originally projected due to the increase in enrolment in 2002-03 by 'fast-trackers', the increased difficulty of completing the new curriculum in four years compared to completing the old curriculum in five years, and as mentioned in the study, the effect of some students delaying the start of post-secondary education to avoid the double cohort.

The increase from the double cohort is spread over four years starting in 2002-03 because of the 'fast-trackers', space limitations, the new curriculum, and some students delaying the start of post-secondary education. The double cohort entrance in post-secondary institutions is distributed over four years as follows: 12% in the first year, 60% in the second, 20% in the third, and 8% in the fourth year.

The resulting growth rate in students enrolled in post-secondary education is higher for a few years and it decreases thereafter as the double cohort graduates and leaves the CSLP. The effect will be phased out over the long term when both classes graduate completely.

Overall, the number of full-time students enrolled in post-secondary education decreases from 794,000 in 2001-02 to 764,000 in 2026-27 with periods of growth and decline during the projection period.

## **2. Number of Students in Canada Student Loans Program**

The needs assessment process determines the proportion of students eligible for a loan. A student's need is defined as the excess of expenses relative to resources if positive. The resources assessed include salary, assets and parental contributions. The expenses calculated include transportation, tuition fees, books, shelter and food.

The student need is increasing on average because expenses are rising faster than resources. There are two reasons for this increase. First, tuition fees are ultimately indexed at 3.0% above inflation while salaries are increased at a slower pace; i.e., ultimately indexed at 1.1% above inflation. In effect, Table 5 shows average tuition fees rising from \$4,300 in 2001-02 to \$17,000 in 2026-27. As a percentage of the resources, tuition fees rise from a level of 66% to reach 111% in 2026-27. Tuition fee increases are the primary source of rising student needs.

**Table 5 Average Student Needs**

<b>Loan Year</b>	<b>Resources (\$)</b> (1)	<b>Tuition (\$)</b> (2)	<b>Other Expenses (\$)</b> (3)	<b>Total Expenses (\$)</b> (2) + (3)	<b>Average Student Need (\$)</b> (2) + (3) - (1)
2001 - 2002	6,500	4,300	11,200	15,500	9,000
2002 - 2003	6,600	4,700	11,400	16,100	9,500
2003 - 2004	6,700	4,900	11,700	16,600	9,900
2004 - 2005	6,800	5,100	11,900	17,000	10,200
2005 - 2006	7,000	5,300	12,200	17,500	10,500
2006 - 2007	7,200	5,500	12,400	17,900	10,700
2007 - 2008	7,400	5,800	12,700	18,500	11,100
2008 - 2009	7,600	6,100	13,000	19,000	11,400
2009 - 2010	7,900	6,400	13,300	19,700	11,800
2010 - 2011	8,200	6,700	13,600	20,300	12,200
2011 - 2012	8,400	7,100	14,000	21,100	12,600
2012 - 2013	8,800	7,500	14,300	21,900	13,100
2013 - 2014	9,100	8,000	14,700	22,700	13,600
2014 - 2015	9,400	8,400	15,200	23,600	14,100
2015 - 2016	9,800	8,900	15,600	24,500	14,700
2016 - 2017	10,200	9,500	16,100	25,500	15,300
2017 - 2018	10,600	10,000	16,600	26,600	15,900
2018 - 2019	11,100	10,600	17,100	27,700	16,600
2019 - 2020	11,500	11,300	17,600	28,800	17,300
2020 - 2021	12,000	12,000	18,100	30,000	18,000
2021 - 2022	12,500	12,700	18,600	31,300	18,800
2022 - 2023	13,000	13,400	19,200	32,600	19,600
2023 - 2024	13,600	14,200	19,800	34,000	20,500
2024 - 2025	14,100	15,100	20,400	35,500	21,300
2025 - 2026	14,700	16,000	21,000	37,000	22,300
2026 - 2027	15,300	17,000	21,600	38,600	23,300

Second, the average expenses per eligible student are initially much greater than the resources. The average expenses are \$15,500 per year compared to the average resources of only \$6,500 in 2001-02. The resources account for approximately 40% of the total expenses during the 25-year projection period. By applying the same percentage increase to both, the total expenses account for a greater increase in dollars when compared to resources.

Another element that must be taken into consideration is the loan size. Some eligible students with a small need tend not to take their loan but would eventually participate in the Program if their need increased significantly. The average student need increases by 159% over the next 25 years. This will increase the participation of students who are eligible for a small loan but are not taking it.

At an assessed need of \$105 and over a week, almost all the students take their loan. At an assessed need less than \$15 per week, students tend not to take their loans because they are too insignificant.

The expected increase in the eligibility rate of the CSLP, from 45.4% to 59.0%, is caused by a faster increase in tuition fees and other expenses compared to average student resources.

**Table 6 Loan Recipients**

<b>Loan Year</b>	<b>Students Enrolled in Post-secondary Institutions (Thousands)</b>	<b>Students Eligible for CSL's (Thousands)</b>	<b>Eligibility Rate (%)</b>	<b>Students in CSLP (Thousands)</b>	<b>Annual Increase in CSLP Students (Thousands)</b>	<b>Participation Rate (%)</b>
	(1)	(2)	(2) / (1)	(3)	(4)	(3) / (1)
2001 - 2002	794	360	45.4	332	-	41.8
2002 - 2003	785	360	45.8	333	1.2	42.4
2003 - 2004	839	388	46.2	360	27.6	42.9
2004 - 2005	841	391	46.5	364	3.6	43.3
2005 - 2006	825	385	46.7	360	-4.5	43.6
2006 - 2007	806	379	47.0	354	-5.3	44.0
2007 - 2008	804	381	47.3	357	2.7	44.4
2008 - 2009	819	390	47.7	367	10.2	44.8
2009 - 2010	830	398	48.0	376	8.6	45.3
2010 - 2011	835	404	48.4	382	6.6	45.8
2011 - 2012	835	408	48.9	387	4.5	46.3
2012 - 2013	839	414	49.3	394	6.9	46.9
2013 - 2014	848	423	49.8	403	9.4	47.5
2014 - 2015	856	431	50.4	412	9.0	48.1
2015 - 2016	842	429	50.9	411	-1.1	48.8
2016 - 2017	817	421	51.5	405	-6.3	49.5
2017 - 2018	799	416	52.1	401	-3.5	50.2
2018 - 2019	779	411	52.8	397	-4.2	51.0
2019 - 2020	776	415	53.4	401	4.5	51.8
2020 - 2021	775	420	54.1	407	6.0	52.6
2021 - 2022	768	422	54.9	410	2.6	53.4
2022 - 2023	765	426	55.7	415	4.7	54.2
2023 - 2024	763	431	56.4	421	5.9	55.1
2024 - 2025	763	437	57.3	428	6.9	56.0
2025 - 2026	765	445	58.1	436	8.1	57.0
2026 - 2027	764	451	59.0	443	7.2	57.9

Table 6 shows that 45.4% of students are eligible for a student loan in 2001-02 but only 41.8% take the loan. The 3.6% gap between these two rates represents students who do not take loans of a small size. This gap narrows to 1.1% by 2026-27, since the average student need has increased and, as a result, there are fewer students with a small need and more students participating in the CSLP.

The Ontario Government's plan to phase out Grade 13 by 2003 is part of the increase of participation in the CSLP. The number of students participating in the CSLP increases by 27,600 in 2003-04.

Overall, the participation rate of students in the CSLP will increase from 41.8% to 57.9% adding 111,300 students to the Program. This is the main cause of the increase in loans issued over the 25-year period.

### **3. New Loans Issued**

This section focuses on the increase in the average loan size of all new loans issued in a certain loan year. The following two factors combined are responsible for dictating the evolution of the average loan size.

First, an increased student need will put a growing pressure on the average loan size. Table 7 shows that average student needs increase from \$9,000 in 2001-02 to \$23,300 in 2026-27. As explained in the previous section, the increasing student need causes many students to become eligible to receive a loan. However, these new loans are smaller in size and slow the growth of the average loan size. This indirectly contributes to moderating the average loan growth over the 25-year period since an estimated 111,300 more students will participate in the Program.

Second, a greater percentage of students will attain the loan limit, given that the loan limit is set at \$165 per week for the 25-year period. In Table 7, the percentage of students at the limit increases from 45.1% to 83.5%, implying that these students will not have an increase in loan size despite increased cost pressures. The \$165 limit slows the growth of the loan, as students who are already at the loan limit cannot increase the size of their loan any further.

Overall, the average loan size increases from \$4,561 in 2001-02 to \$5,578 in 2026-27, resulting in an average increase of 0.8% a year.



**Table 7 Average Amount of New Loans**

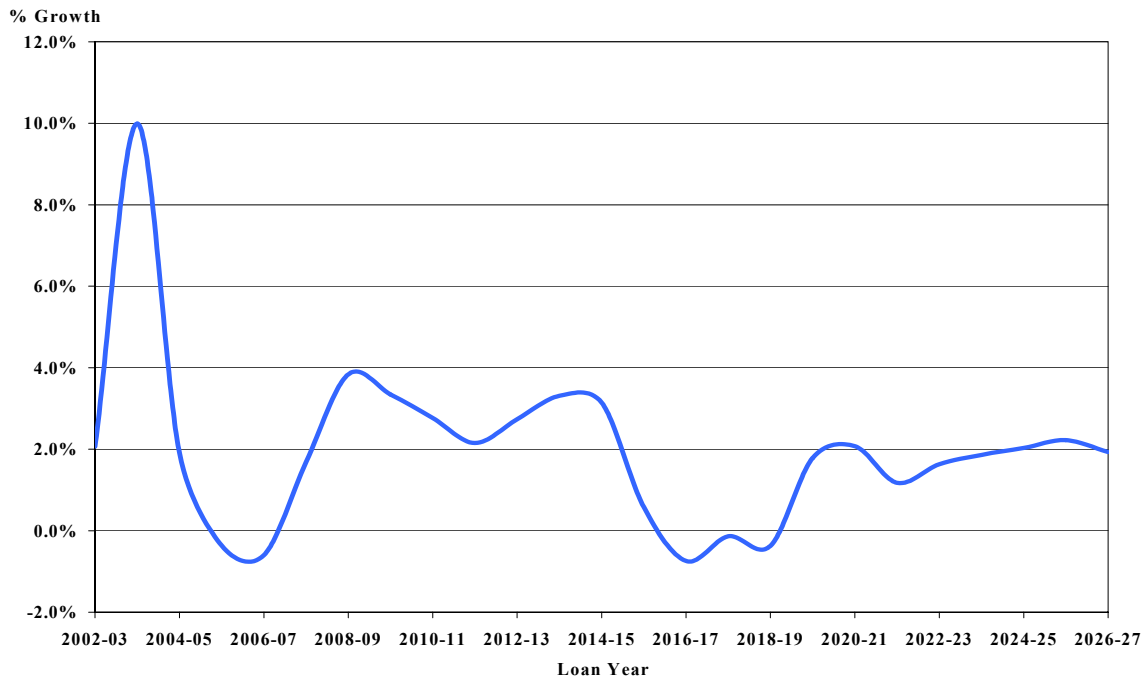
<b>Loan Year</b>	<b>Average Student Need (\$)</b>	<b>Increase (%)</b>	<b>% at Loan Limit</b>	<b>CSLP Weekly \$ Limit</b>	<b>Average Loan Size (\$)</b>	<b>Increase (%)</b>
2001 - 2002	9,000	-	45.1	165	4,561	-
2002 - 2003	9,500	5.2	47.8	165	4,638	1.7
2003 - 2004	9,900	4.4	50.0	165	4,711	1.6
2004 - 2005	10,200	2.6	51.3	165	4,754	0.9
2005 - 2006	10,500	2.6	52.6	165	4,795	0.9
2006 - 2007	10,700	2.7	53.9	165	4,839	0.9
2007 - 2008	11,100	2.9	55.3	165	4,884	0.9
2008 - 2009	11,400	3.1	56.8	165	4,931	1.0
2009 - 2010	11,800	3.3	58.4	165	4,979	1.0
2010 - 2011	12,200	3.5	60.0	165	5,028	1.0
2011 - 2012	12,600	3.6	61.7	165	5,076	1.0
2012 - 2013	13,100	3.7	63.3	165	5,124	0.9
2013 - 2014	13,600	3.8	65.0	165	5,170	0.9
2014 - 2015	14,100	4.0	66.7	165	5,216	0.9
2015 - 2016	14,700	4.0	68.3	165	5,260	0.8
2016 - 2017	15,300	4.1	70.0	165	5,302	0.8
2017 - 2018	15,900	4.1	71.6	165	5,341	0.7
2018 - 2019	16,600	4.2	73.1	165	5,378	0.7
2019 - 2020	17,300	4.2	74.6	165	5,412	0.6
2020 - 2021	18,000	4.2	76.0	165	5,444	0.6
2021 - 2022	18,800	4.3	77.4	165	5,473	0.5
2022 - 2023	19,600	4.3	78.8	165	5,499	0.5
2023 - 2024	20,500	4.3	80.0	165	5,522	0.4
2024 - 2025	21,300	4.4	81.2	165	5,543	0.4
2025 - 2026	22,300	4.4	82.4	165	5,562	0.3
2026 - 2027	23,300	4.4	83.5	165	5,578	0.3

**Table 8 Increase in New Loans Issued**

<b>Loan Year</b>	<b>Students in CSLP (Thousands)</b>	<b>Increase (%)</b>	<b>Average Loan Size (\$)</b>	<b>Increase (%)</b>	<b>Total Loans Issued (\$ million)</b>	<b>Increase (%)</b>	<b>% of Students at Limit</b>
	(1)		(2)		(1) x (2)		
2001 - 2002	332	-	4,561	-	1,512	-	45.1
2002 - 2003	333	0.4	4,638	1.7	1,543	2.1	47.8
2003 - 2004	360	8.3	4,711	1.6	1,698	10.0	50.0
2004 - 2005	364	1.0	4,754	0.9	1,730	1.9	51.3
2005 - 2006	360	-1.2	4,795	0.9	1,724	-0.4	52.6
2006 - 2007	354	-1.5	4,839	0.9	1,714	-0.6	53.9
2007 - 2008	357	0.8	4,884	0.9	1,743	1.7	55.3
2008 - 2009	367	2.8	4,931	1.0	1,810	3.8	56.8
2009 - 2010	376	2.3	4,979	1.0	1,870	3.3	58.4
2010 - 2011	382	1.8	5,028	1.0	1,922	2.8	60.0
2011 - 2012	387	1.2	5,076	1.0	1,963	2.2	61.7
2012 - 2013	394	1.8	5,124	0.9	2,017	2.7	63.3
2013 - 2014	403	2.4	5,170	0.9	2,084	3.3	65.0
2014 - 2015	412	2.2	5,216	0.9	2,149	3.1	66.7
2015 - 2016	411	-0.3	5,260	0.8	2,162	0.6	68.3
2016 - 2017	405	-1.5	5,302	0.8	2,146	-0.7	70.0
2017 - 2018	401	-0.9	5,341	0.7	2,143	-0.1	71.6
2018 - 2019	397	-1.1	5,378	0.7	2,135	-0.4	73.1
2019 - 2020	401	1.1	5,412	0.6	2,173	1.8	74.6
2020 - 2021	407	1.5	5,444	0.6	2,218	2.1	76.0
2021 - 2022	410	0.6	5,473	0.5	2,244	1.2	77.4
2022 - 2023	415	1.1	5,499	0.5	2,281	1.6	78.8
2023 - 2024	421	1.4	5,522	0.4	2,323	1.9	80.0
2024 - 2025	428	1.6	5,543	0.4	2,370	2.0	81.2
2025 - 2026	436	1.9	5,562	0.3	2,423	2.2	82.4
2026 - 2027	443	1.6	5,578	0.3	2,470	1.9	83.5

The product of the number of students in the CSLP and the average loan size gives the total amount of loans issued. The increase in the number of students in the CSLP is shown in Table 8 with the increase in average loan size. The combination of these two elements gives the increase in new loans issued. For example, in the loan year 2010-11 the growth rate of students in the CSLP is 1.8% while the growth of the average loan size is 1.0%. The growth of total loans issued in 2010-11 is 2.8%, the sum of the two elements.

**Chart 2 Growth Rate of New Loans Issued**



The growth in the number of new loans will be, on average, 1.2% a year mainly because of an increase in the proportion of students who are eligible (45.4% to 59.0% as shown in Table 6). The average loan size increases only at 0.8% a year on average because of the weekly loan limit kept constant over the 25-year period. In Chart 2, the elimination of Grade 13 in Ontario raises the growth rate to 10.0% in 2003-04 but has no impact on the long-term growth rate. In total, the growth rate averages 2.0% per year using the above assumptions. The total new loans issued will reach \$2.5 billion at the end of the projection period resulting from the increase in participation, the evolution of the average loan size, and the percentage of students at the loan limit of \$165 per week.

New loans issued are driven by an increased number of students becoming eligible as a result of accelerating student need. The average loan size is not greatly affected since the loan limit is capped over the 25-year period. Any increase in the limit would have a major impact on the long-term growth rate of new loans issued.

A scenario demonstrating the effect of changing the limit is included in Appendix 4 for sensitivity testing. The scenario shows the effect of a one-time increase of \$100 to the loan limit thereby increasing it to \$265 and maintaining the limit at that level thereafter. The scenario demonstrates that the growth rate of loans issued is significantly higher when the loan limit is increased to better reflect the increasing student need.

## C - Portfolio Projections

This section presents projections of the portfolio for all three regimes. The amounts for loans in-study represent loans issued to students still in the post-secondary educational system. Interest on loans in-study are fully subsidized for full-time students in the CSLP. The loans in repayment consist of loans consolidated by students with financial institutions (or the Government) and being repaid.

The Guaranteed and the Risk-Shared Regimes apply to loans issued before August 2000. Some loans in these regimes are still outstanding since there are still students under these regimes who are attending post-secondary institutions or have not finished repaying their loans. Impaired loans are not included in the projections of the Guaranteed and the Risk-Shared portfolios. As at July 2002, total impaired loans owned by the Government amount to \$1.6 billion and are subject to possible future recoveries. The Government sets up provisions in the Public Accounts for loan guarantees and loans in default. This procedure is not shown in this report.

The projections of the portfolios for the Guaranteed and the Risk-Shared Regimes are shown in Table 9. Such projections use consolidation distributions and default and recovery distributions, discussed in Appendix 3, with an assumed gross default rate of 22.0% combined with a recovery rate of 50.5%. The Guaranteed Regime is gradually being phased out over the next 10 years, while loans in the Risk-Shared Regime will take an extra five years before being completely phased out.

**Table 9 Guaranteed and Risk-Shared Regimes (\$ million)**

As at 31 July	Guaranteed			Risk-Shared		
	Loans In-study	Loans in Repayment	Total	Loans In-study	Loans in Repayment	Total
2002	113	612	725	1,299	4,652	5,951
2003	42	451	494	759	4,420	5,179
2004	-	327	327	434	3,980	4,414
2005	-	216	216	229	3,418	3,647
2006	-	152	152	104	2,774	2,878
2007	-	112	111	33	2,126	2,159
2008	-	81	81	-	1,531	1,531
2009	-	56	56	-	1,015	1,015
2010	-	35	35	-	623	623
2011	-	16	16	-	359	359
2012	-	5	4	-	193	193
2013	-	-	-	-	99	99
2014	-	-	-	-	47	47
2015	-	-	-	-	20	20
2016	-	-	-	-	6	6
2017	-	-	-	-	1	1
2018	-	-	-	-	-	-

Under the Direct Loan Regime, according to the accounting recommendations under Section PS 3050 Loans Receivable of the Public Sector Accounting Handbook of the Canadian Institute of Chartered Accountants, a provision on loans issued should be accounted for as a Program expense, since the loans are provided by the Government instead of by financial institutions. The purpose of this provision is to cover all future net costs and risk of loss associated with loans. As a result, the provision avoids overstatement of Program revenues by immediately recognizing the risk of loss at the time loans are issued.

The projection of the Direct Loan portfolio includes the balance of outstanding loans, the projection of impaired loans for which students stop making payments, allowances for bad debt (principal and interest separately) to cover the future risk of default net of recoveries from loans disbursed, and allowances for interest relief and DRR to cover the future cost of students benefiting from these program dispositions.

The projection of the portfolio of the Direct Loan Regime is shown in Table 10. As for Guaranteed and Risk-Shared Regimes, the projections use the consolidation, default and recovery distributions discussed in Appendix 3. The gross default rate used for the Direct Loan Regime is 20.0%, instead of 22.0%, because the definition of default has changed under the Direct Loan Regime; a loan is considered impaired when no payment is received in the last 270 days, compared with 90 days used previously by financial institutions. The recovery rate is 45.5%.

**Table 10 Direct Loan Portfolio and Allowances (\$ million)**

As at 31 July	Loans In-study	Loans in Repayment	Impaired Loans	Total*	Allowance for			
					Bad Debt Principal	Bad Debt Interest	Interest Relief	DRR
2002	2,358	717	4	3,079	348	0	151	22
2003	2,863	1,661	42	4,566	523	5	122	32
2004	3,304	2,700	127	6,131	714	16	159	44
2005	3,583	3,793	253	7,628	906	33	189	56
2006	3,724	4,861	407	8,992	1,089	54	210	68
2007	3,780	5,837	579	10,196	1,258	79	223	77
2008	3,822	6,686	753	11,261	1,414	105	234	84
2009	3,910	7,382	919	12,211	1,557	131	243	90
2010	4,018	7,942	1,070	13,029	1,686	155	254	94
2011	4,129	8,369	1,203	13,701	1,799	176	263	98
2012	4,233	8,723	1,318	14,273	1,897	196	274	102
2013	4,344	9,036	1,414	14,794	1,984	213	284	106
2014	4,473	9,304	1,496	15,273	2,062	228	294	110
2015	4,609	9,572	1,565	15,746	2,135	241	303	114
2016	4,698	9,846	1,626	16,170	2,198	253	310	118
2017	4,732	10,108	1,681	16,521	2,251	263	314	122
2018	4,747	10,338	1,732	16,817	2,295	272	317	125
2019	4,746	10,531	1,778	17,055	2,332	280	318	129
2020	4,779	10,684	1,820	17,283	2,366	287	320	131
2021	4,842	10,815	1,856	17,513	2,400	293	324	134
2022	4,903	10,941	1,886	17,730	2,431	298	327	137
2023	4,973	11,061	1,914	17,948	2,462	302	331	140
2024	5,056	11,184	1,939	18,178	2,493	306	336	144
2025	5,148	11,316	1,962	18,426	2,527	309	342	147
2026	5,253	11,466	1,986	18,704	2,562	313	348	151
2027	5,357	11,639	2,010	19,006	2,601	317	355	155

\* The aggregate amount of outstanding student loans (including impaired loans) is mandated not to exceed \$15 billion under section 13 of the *Canada Student Financial Assistance Act*.

As at 31 July 2002, the outstanding Direct Loan portfolio is \$3,079 million and is derived from new loans issued during the loan year 2000-01 (\$1,570 million) and during 2001-02 (\$1,512 million), plus the interest accrued during the grace period for these two years, minus repayment estimates in the loan year 2001-02. The impaired loans are part of the assets and are included in the Direct Loan portfolio projection. The portfolio increases rapidly to reach \$10.2 billion within the next five years. By the end of the loan year 2026-27, the portfolio reaches \$19.0 billion. All calculations assumed a constant loan limit of \$165 per week and any increase in this limit would result in a higher value for the loan portfolio.

Table 11 provides the details of the calculations for the projection of the impaired loans portfolio and the allowance for bad debt – principal under the Direct Loan Regime.

**Table 11 Impaired Loans and Allowance for Bad Debt – Principal (\$ million)**

Loan Year	Impaired Loans Portfolio					Allowance for Bad Debt – Principal			
	New				Balance 31 July	Allowance 1 August	New Provision*	Write-off	Allowance 31 July
	Balance 1 August	Impaired Loans	Collected Loans	Write-off					
(1)	(2)	(3)	(4)	(1 + 2) – (3 + 4)	(1)	(2)	(3)	(1 + 2) – (3)	
2001 - 2002	-	4	0	-	4	177	171	-	348
2002 - 2003	4	40	1	-	42	348	174	-	523
2003 - 2004	42	91	6	0	127	523	192	0	714
2004 - 2005	127	143	14	4	253	714	196	4	906
2005 - 2006	253	193	27	12	407	906	195	12	1,089
2006 - 2007	407	237	41	24	579	1,089	194	24	1,258
2007 - 2008	579	273	58	41	753	1,258	197	41	1,414
2008 - 2009	753	302	74	62	919	1,414	204	62	1,557
2009 - 2010	919	324	90	83	1,070	1,557	211	83	1,686
2010 - 2011	1,070	341	104	104	1,203	1,686	217	104	1,799
2011 - 2012	1,203	354	117	123	1,318	1,799	222	123	1,897
2012 - 2013	1,318	366	128	141	1,414	1,897	228	141	1,984
2013 - 2014	1,414	376	138	157	1,496	1,984	235	157	2,062
2014 - 2015	1,496	387	147	170	1,565	2,062	243	170	2,135
2015 - 2016	1,565	397	155	181	1,626	2,135	244	181	2,198
2016 - 2017	1,626	408	163	190	1,681	2,198	242	190	2,251
2017 - 2018	1,681	419	170	198	1,732	2,251	242	198	2,295
2018 - 2019	1,732	427	176	205	1,778	2,295	241	205	2,332
2019 - 2020	1,778	434	181	211	1,820	2,332	246	211	2,366
2020 - 2021	1,820	438	186	217	1,856	2,366	251	217	2,400
2021 - 2022	1,856	442	189	222	1,886	2,400	254	222	2,431
2022 - 2023	1,886	447	192	227	1,914	2,431	258	227	2,462
2023 - 2024	1,914	451	195	231	1,939	2,462	263	231	2,493
2024 - 2025	1,939	456	198	235	1,962	2,493	268	235	2,527
2025 - 2026	1,962	462	201	238	1,986	2,527	274	238	2,562
2026 - 2027	1,986	469	203	241	2,010	2,562	279	241	2,601

\* The provision for new loans issued accrues on a loan year basis (Public Accounts provision accrues on a fiscal year basis).

The evolution of the impaired loans portfolio is shown together with the evolution of the allowance for bad debt – principal. In the previous report, the allowance for bad debt was reduced immediately at the time the loan defaulted and increased by future recoveries. In this report, to better reflect the Government's practices, the allowance for bad debt is reduced only when there is a write-off. The assumption used for the write-off is that 80% of remaining bad debt is written-off uniformly between the third and seventh year after impairment (16% per year), with the balance written-off uniformly over the following four years (5% per year).

The allowance for bad debt – principal grows rapidly and reaches \$2,601 million in 2026-27. As a percentage of the total Direct Loan portfolio, the allowance evolves from 11.3% in 2001-02 to stabilize at about 14% over the long-term.

In accordance with the recommendation provided by Collection Services of HRDC, interest is accrued on impaired loans for three years. A new provision is set to cover the risk that such accrued interest is never recovered. The assumption for write-off, described previously, is used to establish the provision.

The provision for bad debt – interest corresponds to a percentage of new impaired loans in a year, and is 11.9% for the loan year 2002-03.

**Table 12 Allowance for Bad Debt – Interest (\$ million)**

<b>Loan Year</b>	<b>Allowance 1 August</b>	<b>New Provision</b>	<b>Write-off</b>	<b>Allowance 31 July</b>
	(1)	(2)	(3)	(1 + 2) – (3)
2001 - 2002	-	0	-	0
2002 - 2003	0	5	-	5
2003 - 2004	5	11	0	16
2004 - 2005	16	18	1	33
2005 - 2006	33	24	3	54
2006 - 2007	54	30	5	79
2007 - 2008	79	35	9	105
2008 - 2009	105	40	14	131
2009 - 2010	131	43	19	155
2010 - 2011	155	46	24	176
2011 - 2012	176	49	29	196
2012 - 2013	196	51	34	213
2013 - 2014	213	53	38	228
2014 - 2015	228	55	42	241
2015 - 2016	241	56	45	253
2016 - 2017	253	58	48	263
2017 - 2018	263	59	50	272
2018 - 2019	272	61	53	280
2019 - 2020	280	62	55	287
2020 - 2021	287	62	56	293
2021 - 2022	293	63	58	298
2022 - 2023	298	63	59	302
2023 - 2024	302	64	60	306
2024 - 2025	306	65	61	309
2025 - 2026	309	66	62	313
2026 - 2027	313	67	63	317



In the actuarial report as at 31 July 2001, the provision rate for interest relief under the Direct Loan Regime was 5% for the first three years, increasing gradually thereafter to 5.9%. The provision rate of interest relief is revised downward as shown in Table 13.

**Table 13 Interest Relief Provision Assumptions**

Loan Year	Report as at 31 July 2001	Report as at 31 July 2002
2000-01	5.0%	2.6%
2001-02	5.0%	3.0%
2002-03	5.0%	3.2%
⋮	⋮	⋮
2011+	5.9%	3.9%

The revision of the provision rate occurred for the following two reasons:

- The utilization rate for interest relief has been reduced from the last report because job creation rates were higher than expected in past years. More students found work and therefore were able to repay their loans without having to use interest relief. In the loan year 2001-02, the number of interest relief recipients has effectively decreased by about 12% compared to 2000-01.
- The average student borrowing cost for the loan year 2001-02 (6.79%) was lower than expected in the first actuarial report (7.30%), thus directly reducing the cost of interest relief. The future assumption used for the student borrowing cost was revised slightly downward compared with the previous report.

Table 14 provides the details of the calculations for the projections of the allowances for interest relief and DRR under the Direct Loan Regime.

**Table 14 Detailed Calculations – Allowances for Interest Relief and DRR (\$ million)**

Loan Year	Allowance for Interest Relief				Allowance for Debt Reduction in Repayment			
	Allowance 1 August	New Provision*	Interest Relief Payment	Allowance 31 July	Allowance 1 August	New Provision*	DRR Payment	Allowance 31 July
	(1)	(2)	(3)	(1) + (2) - (3)	(1)	(2)	(3)	(1) + (2) - (3)
2001 - 2002	79	76	3	151	11	11	0	22
2002 - 2003	151	-19	11	122	22	11	0	32
2003 - 2004	122	58	20	159	32	12	0	44
2004 - 2005	159	61	31	189	44	12	0	56
2005 - 2006	189	62	41	210	56	12	1	68
2006 - 2007	210	62	48	223	68	12	3	77
2007 - 2008	223	64	54	234	77	12	5	84
2008 - 2009	234	67	58	243	84	13	7	90
2009 - 2010	243	71	61	254	90	13	9	94
2010 - 2011	254	73	63	263	94	13	9	98
2011 - 2012	263	77	66	274	98	14	10	102
2012 - 2013	274	79	69	284	102	14	10	106
2013 - 2014	284	81	72	294	106	15	10	110
2014 - 2015	294	84	75	303	110	15	11	114
2015 - 2016	303	84	77	310	114	15	11	118
2016 - 2017	310	84	79	314	118	15	11	122
2017 - 2018	314	84	81	317	122	15	12	125
2018 - 2019	317	83	82	318	125	15	12	129
2019 - 2020	318	85	83	320	129	15	12	131
2020 - 2021	320	87	83	324	131	16	13	134
2021 - 2022	324	88	84	327	134	16	13	137
2022 - 2023	327	89	85	331	137	16	13	140
2023 - 2024	331	91	86	336	140	16	13	144
2024 - 2025	336	92	87	342	144	17	13	147
2025 - 2026	342	95	88	348	147	17	13	151
2026 - 2027	348	96	90	355	151	17	13	155

\* The provision for new loans issued accrues on a loan year basis (Public Accounts provision accrues on a fiscal year basis).

As shown, using the assumptions of the previous report for the provision rates, the interest relief allowance increases to more than \$150 million as at 31 July 2002. The reduction of the provision rates implies a decrease of this allowance by \$68 million. This adjustment is accounted for at the beginning of the loan year 2002-03 by reducing the provision expense of \$49 million to -\$19 million. Effectively, the Government reduces this allowance by \$94 million in March 2003. Compared to the total portfolio, the allowance for interest relief stabilizes at 1.9% by the end of the projection period.

The provision rate for DRR (0.7%) remains the same as in the previous report. Compared to the total portfolio, the allowance for DRR increases during the projection period from 0.7% to 0.8%.

In Table 14, DRR payments seem low compared to the provision. The provision rate will be re-evaluated in the next actuarial report, which will incorporate the DRR improvements announced in the 2003 Federal Budget.

For the purpose of comparison, Table 15 shows the Direct Loan portfolio in 2002 constant dollars. Starting in the loan year 2015-16, the portfolio decreases because the inflation rate assumed is higher than the portfolio growth in Table 10.

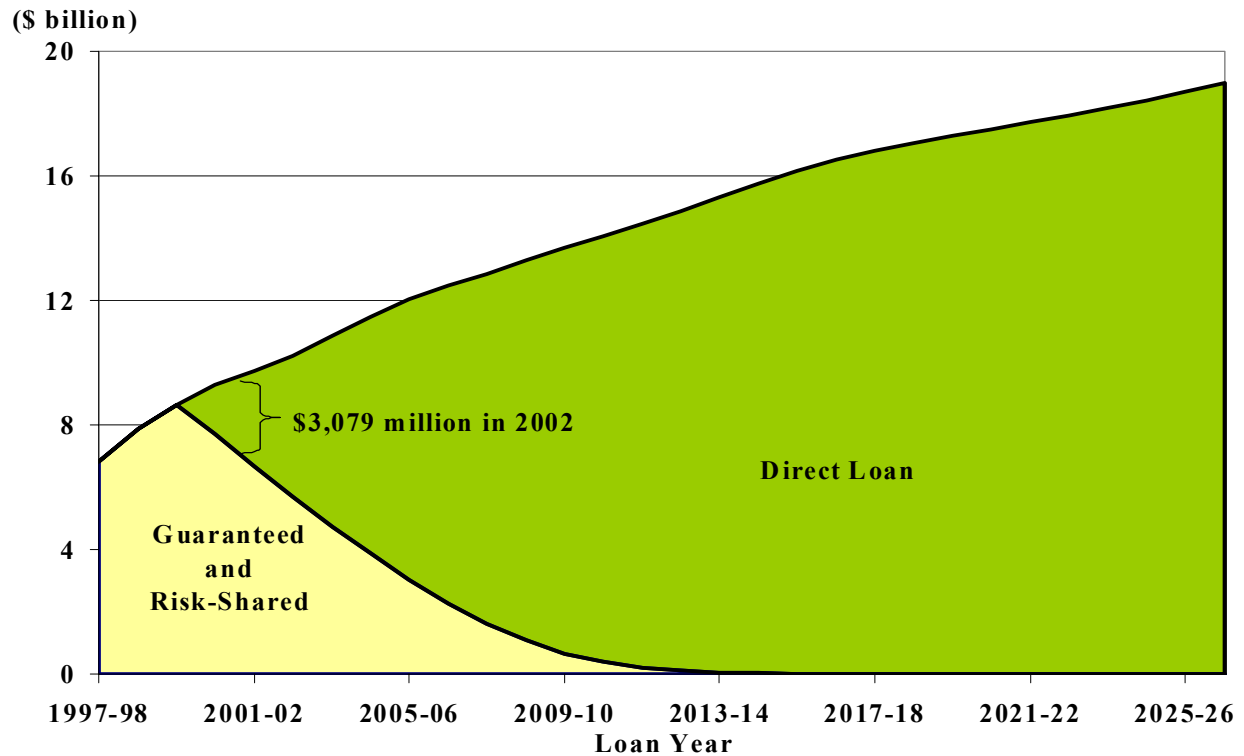
**Table 15 Direct Loan Portfolio and Allowances (in millions of 2002 constant dollars)<sup>1</sup>**

As at 31 July	Loans In-study	Loans in Repayment	Impaired Loans	Total	Allowance for			
					Bad Debt Principal	Bad Debt Interest	Interest Relief	DRR
2002	2,358	717	4	3,079	348	0	151	22
2003	2,787	1,617	41	4,445	509	5	118	32
2004	3,153	2,577	122	5,852	682	15	152	42
2005	3,352	3,549	236	7,138	848	31	177	53
2006	3,414	4,457	374	8,244	999	50	193	62
2007	3,392	5,239	519	9,150	1,129	71	201	69
2008	3,354	5,868	661	9,883	1,241	92	205	74
2009	3,352	6,330	788	10,470	1,335	112	209	77
2010	3,362	6,646	896	10,904	1,411	129	212	79
2011	3,369	6,829	982	11,180	1,468	144	215	80
2012	3,364	6,934	1,047	11,346	1,508	156	218	81
2013	3,360	6,989	1,094	11,444	1,535	165	220	82
2014	3,364	6,997	1,125	11,486	1,551	172	221	83
2015	3,366	6,991	1,143	11,501	1,559	176	221	83
2016	3,332	6,982	1,153	11,467	1,559	179	220	84
2017	3,258	6,960	1,157	11,375	1,550	181	216	84
2018	3,173	6,911	1,157	11,241	1,534	182	212	84
2019	3,080	6,834	1,154	11,068	1,513	182	206	83
2020	3,011	6,732	1,147	10,889	1,491	181	202	83
2021	2,962	6,616	1,135	10,713	1,468	179	198	82
2022	2,912	6,498	1,120	10,530	1,444	177	194	82
2023	2,868	6,378	1,103	10,349	1,420	174	191	81
2024	2,830	6,261	1,085	10,176	1,396	171	188	80
2025	2,798	6,150	1,067	10,015	1,373	168	186	80
2026	2,772	6,050	1,048	9,870	1,352	165	184	80
2027	2,744	5,963	1,030	9,737	1,332	162	182	79

<sup>1</sup> For a given year, the value in 2002 constant dollars is equal to the corresponding value divided by the ratio of the cumulative index of the Consumer Price Index (CPI) of that given year by the cumulative index of the CPI for 2002.

The projection of the loan portfolios is shown in Chart 3. Guaranteed and Risk-Shared loans are phased out over time. The difference between the two curves corresponds to loans in the Direct Loan portfolio.

**Chart 3 Projection of the Loan Portfolios**



## D - Projection of the Net Cost of the Program

### 1. Student Related Expenses

One of the categories of expenses of the CSLP is related to the cost of supporting students during their study and repayment periods. This expense includes the interest subsidy, the provisions or expenses for interest relief and DRR under the different regimes. The interest subsidy, which represents the cost of borrowing for loans in-study, is lower than in the previous report, because the assumption for the Government's cost of borrowing was revised downward. The expense for Canada Study Grants is shown separately because it supports students directly rather than assisting them in the form of loans.

**Table 16 Student Related Expenses (\$ million)**

Loan Year	Direct Loan			Risk-Shared and Guaranteed			Canada Study Grants	Total
	Interest Subsidy	Provision* for Interest Relief	Provision* for DRR	Interest Subsidy	Interest Relief	DRR		
2001 - 2002	110.3	75.6	10.6	73.5	72.3	6.0	67.4	415.7
2002 - 2003	123.4	-18.6**	10.8	37.8	42.9	8.3	77.2	281.9
2003 - 2004	137.1	57.7	11.9	19.7	33.5	10.2	78.8	348.9
2004 - 2005	150.3	60.6	12.1	10.5	23.0	11.7	80.3	348.5
2005 - 2006	160.1	62.1	12.1	4.7	14.7	10.7	82.0	346.4
2006 - 2007	166.5	61.7	12.0	1.5	9.5	6.8	83.8	341.7
2007 - 2008	172.7	64.5	12.2	-	5.8	4.3	85.6	345.1
2008 - 2009	180.9	67.0	12.7	-	3.2	2.5	87.7	353.9
2009 - 2010	190.4	71.1	13.1	-	1.6	1.7	89.8	367.7
2010 - 2011	200.4	73.0	13.5	-	0.7	1.0	92.1	380.7
2011 - 2012	238.5	76.6	13.7	-	0.2	0.6	94.6	424.2
2012 - 2013	221.7	78.7	14.1	-	0.1	0.3	97.2	412.0
2013 - 2014	233.3	81.3	14.6	-	0.0	0.0	100.0	429.2
2014 - 2015	244.8	83.8	15.0	-	0.0	0.0	102.9	446.6
2015 - 2016	252.1	84.3	15.1	-	0.0	0.0	106.0	457.5
2016 - 2017	254.2	83.7	15.0	-	-	-	109.2	462.1
2017 - 2018	255.9	83.6	15.0	-	-	-	112.5	466.9
2018 - 2019	255.0	83.3	14.9	-	-	-	115.8	469.1
2019 - 2020	256.6	84.7	15.2	-	-	-	119.3	475.9
2020 - 2021	259.8	86.5	15.5	-	-	-	122.9	484.7
2021 - 2022	263.1	87.5	15.7	-	-	-	126.6	492.9
2022 - 2023	266.9	89.0	16.0	-	-	-	130.4	502.2
2023 - 2024	271.3	90.6	16.3	-	-	-	134.3	512.4
2024 - 2025	276.2	92.4	16.6	-	-	-	138.3	523.6
2025 - 2026	281.8	94.5	17.0	-	-	-	142.5	535.7
2026 - 2027	287.4	96.3	17.3	-	-	-	146.7	547.7

\* The provision for new loans issued accrues on a loan year basis (Public Accounts provision accrues on a fiscal year basis).

\*\* The reversal (\$68 million) of the allowance for interest relief is accounted for through an adjustment to the interest relief provision expense at the beginning of the loan year 2002-03 (interest relief provision = 49.4 – 68.0 = -\$18.6 million).

## 2. Program Risk Expenses

Another category of expenses for the Government is related to the risks involved in disbursing loans to students. Specifically, the risk of loan default and the risk of loans being forgiven on death or disability of a student are included in this section.

**Table 17 Risks to the Government (\$ million)**

Loan Year	Direct Loan		Risk-Shared			Guaranteed	Loans Forgiven	Total
	Provision for Bad Debt Principal	Provision for Bad Debt Interest	Risk Premium	Put-back	Refunds to FIs	Claims for Defaulted Loans		
2001 - 2002	170.9	0.4	44.0	4.4	2.1	59.0	11.3	292.2
2002 - 2003	174.4	4.7	28.0	5.9	3.2	44.4	11.8	272.4
2003 - 2004	191.8	11.0	16.8	6.3	4.9	33.3	12.4	276.7
2004 - 2005	195.5	17.6	10.6	5.5	7.0	23.1	13.0	272.4
2005 - 2006	194.8	24.1	6.5	4.6	9.3	13.9	13.4	266.7
2006 - 2007	193.6	30.1	3.7	3.7	11.6	8.5	13.7	265.0
2007 - 2008	196.9	35.2	1.7	2.7	11.9	5.3	14.0	267.8
2008 - 2009	204.5	39.5	-	1.9	10.8	3.3	14.3	274.4
2009 - 2010	211.3	43.1	-	1.2	9.0	2.0	14.6	281.2
2010 - 2011	217.2	46.0	-	0.7	7.1	1.1	14.9	287.0
2011 - 2012	221.8	48.5	-	0.4	5.2	0.5	15.2	291.7
2012 - 2013	227.9	51.2	-	0.2	3.6	0.1	15.6	298.7
2013 - 2014	235.5	53.1	-	0.1	2.4	-	16.0	307.0
2014 - 2015	242.9	54.9	-	0.0	1.4	-	16.4	315.7
2015 - 2016	244.3	56.4	-	0.0	0.8	-	16.8	318.4
2016 - 2017	242.5	58.0	-	0.0	0.4	-	17.2	318.1
2017 - 2018	242.1	59.5	-	0.0	0.2	-	17.4	319.3
2018 - 2019	241.2	60.7	-	-	0.1	-	17.7	319.7
2019 - 2020	245.5	61.6	-	-	-	-	17.9	325.1
2020 - 2021	250.6	62.2	-	-	-	-	18.1	331.0
2021 - 2022	253.6	62.8	-	-	-	-	18.3	334.7
2022 - 2023	257.7	63.4	-	-	-	-	18.5	339.7
2023 - 2024	262.5	64.1	-	-	-	-	18.8	345.4
2024 - 2025	267.9	64.8	-	-	-	-	19.0	351.7
2025 - 2026	273.8	65.6	-	-	-	-	19.3	358.8
2026 - 2027	279.1	66.6	-	-	-	-	19.7	365.3

Under the Direct Loan Regime, the provisions for bad debt (principal and interest) represent the cost of the risk to the Government of being involved directly in the disbursement of loans to students.

Under the Risk-Shared Regime, the risk premium represents the amount paid to lending institutions by the Government based on the value of loans consolidated for repayment in a year. Also included are put-back fees and refunds to financial institutions for loans bought back by the Government.

For the Guaranteed Regime, defaulted loans are included in claims paid as a statutory expense, since the Government bears the entire risk of defaulted loans under this Regime. In the Public Accounts, Guaranteed loans are classified as assets to which provisions for loan guarantees and for loans in default are set up.

Put-backs exist only in the Risk-Shared arrangement as a way to transfer some of the risk back to the Government. According to the agreement, the Government is only obligated to buy back loans impaired for at least 12 months, up to a maximum of 3% of the total loans in repayment with the financial institution each year. Financial institutions decide whether to sell impaired loans, and if so, which ones to be sold. The Government pays a put-back fee of five cents on the dollar for these loans.

The entire amount of recoveries on student loans bought back in the Risk-Shared Regime is considered as revenue in Table 20. According to the agreement, amounts subsequently recovered from income tax refunds are shared with the financial institutions. The participating financial institutions receive a refund of 75% of the amount recovered from income tax refunds in excess of the put-back fees.

### 3. Administration Expenses

The administration expenses of the CSLP are the recovery costs of loans and general administration expenses incurred by HRDC. Expenses incurred by HRDC include salaries of HRDC staff and fees paid to service providers for the administration of loans in the Direct Loan Regime.

**Table 18 Administration Expenses (\$ million)**

Loan Year	Direct Loan	Risk-Shared	Guaranteed	Administration	Total
	Recovery Cost	Recovery Cost	Recovery Cost		
2001 - 2002	0.0	1.2	13.8	115.7	130.7
2002 - 2003	0.2	2.1	13.0	147.7	162.9
2003 - 2004	1.0	3.1	12.1	175.0	191.3
2004 - 2005	2.6	4.2	11.4	172.5	190.7
2005 - 2006	4.8	5.0	9.8	173.5	193.1
2006 - 2007	7.6	5.6	8.4	178.5	200.2
2007 - 2008	10.8	5.8	7.1	184.0	207.7
2008 - 2009	14.2	5.5	5.8	189.9	215.4
2009 - 2010	17.4	4.9	4.4	196.5	223.2
2010 - 2011	20.5	4.1	3.1	203.5	231.2
2011 - 2012	23.4	3.2	1.9	211.1	239.6
2012 - 2013	26.2	2.3	1.1	219.2	248.8
2013 - 2014	28.8	1.6	0.8	227.9	259.1
2014 - 2015	31.3	1.1	0.5	237.2	270.1
2015 - 2016	33.8	0.7	0.3	247.0	281.8
2016 - 2017	36.2	0.4	0.2	257.2	294.1
2017 - 2018	38.2	0.2	0.1	267.8	306.4
2018 - 2019	39.9	0.1	0.1	278.9	319.0
2019 - 2020	41.4	0.1	0.0	290.4	331.9
2020 - 2021	42.7	0.0	0.0	302.4	345.1
2021 - 2022	43.7	0.0	0.0	314.9	358.7
2022 - 2023	44.7	-	-	327.9	372.6
2023 - 2024	45.5	-	-	341.5	387.0
2024 - 2025	46.3	-	-	355.6	401.9
2025 - 2026	47.1	-	-	370.3	417.4
2026 - 2027	47.8	-	-	385.6	433.4



## 4. Other Expenses

Some expenses cannot be divided among regimes. Alternative payments are made directly to Québec, the Northwest Territories and Nunavut, which do not participate in the CSLP. The other participating provinces and territory are paid a fee to finance the administration of the CSLP.

**Table 19 Summary of Expenses (\$ million)**

Loan Year	Student Related Expenses	Risks to the Government	Administration Expenses	Alternative Payment	Administration Fees to Province	Total Expenses
2001 - 2002	415.7	292.2	130.7	116.4	8.3	963.3
2002 - 2003	281.9	272.4	162.9	107.1	8.4	832.6
2003 - 2004	348.9	276.7	191.3	108.6	8.6	934.0
2004 - 2005	348.5	272.4	190.7	109.1	8.8	929.6
2005 - 2006	346.4	266.7	193.1	112.2	9.1	927.4
2006 - 2007	341.7	265.0	200.2	114.6	9.3	930.8
2007 - 2008	345.1	267.8	207.7	117.5	9.6	947.8
2008 - 2009	353.9	274.4	215.4	120.1	9.9	973.8
2009 - 2010	367.7	281.2	223.2	128.0	10.3	1,010.3
2010 - 2011	380.7	287.0	231.2	135.0	10.6	1,044.6
2011 - 2012	424.2	291.7	239.6	150.2	11.0	1,116.8
2012 - 2013	412.0	298.7	248.8	149.0	11.5	1,120.0
2013 - 2014	429.0	307.0	259.1	154.6	11.9	1,161.8
2014 - 2015	446.6	315.7	270.1	160.0	12.4	1,204.8
2015 - 2016	457.5	318.4	281.8	163.1	12.9	1,233.7
2016 - 2017	462.1	318.1	294.1	162.8	13.5	1,250.5
2017 - 2018	466.9	319.3	306.4	163.2	14.0	1,269.8
2018 - 2019	469.1	319.7	319.0	161.9	14.6	1,284.3
2019 - 2020	475.9	325.1	331.9	161.8	15.2	1,309.8
2020 - 2021	484.7	331.0	345.1	161.9	15.8	1,338.6
2021 - 2022	492.9	334.7	358.7	162.3	16.5	1,365.2
2022 - 2023	502.2	339.7	372.6	163.3	17.2	1,394.9
2023 - 2024	512.4	345.4	387.0	165.6	17.9	1,428.3
2024 - 2025	523.6	351.7	401.9	169.0	18.6	1,464.9
2025 - 2026	535.7	358.8	417.4	172.8	19.4	1,504.1
2026 - 2027	547.7	365.3	433.4	177.8	20.2	1,544.5

As evident in the table, total Government expenses associated with the Program increase from \$963.3 million in 2001-02 to \$1.54 billion in 2026-27. On average, total expenses increase at a rate of 1.9% per year from 2001-02 to 2026-27.

## 5. Total Revenues

Revenues for the Guaranteed and the Risk-Shared Regimes come from the principal and interest recovered on impaired loans. The Direct Loan Regime has a net interest revenue collected from students repaying their loans, interest relief payments and from the interest accrued on impaired loans during the first three years. It consists of the interest rate charged to the students minus the Government's cost of borrowing. Since students pay interest directly to financial institutions under the Guaranteed and the Risk-Shared Regimes, this revenue is non-existent for the Government under these regimes. On average, total revenues increase at a rate of 2.8% per year from 2001-02 to 2026-27.

**Table 20 Total Revenues (\$ million)**

Loan Year	Direct Loan			Direct Loan	Risk-Shared	Guaranteed	Total Revenues
	Student Interest Payment	Borrowing Cost	Net Interest Revenue	Interest from Recovery	Principal and Interest from Recovery	Principal and Interest from Recovery	
2001 - 2002	29.7	-23.4	6.3	-	7.8	123.1	137.1
2002 - 2003	91.9	-65.9	26.0	-	13.4	118.4	157.8
2003 - 2004	173.7	-117.0	56.7	-	20.6	113.7	190.9
2004 - 2005	261.9	-177.9	84.0	0.0	27.5	109.9	221.4
2005 - 2006	354.5	-244.2	110.2	0.2	32.8	95.2	238.5
2006 - 2007	446.1	-313.2	132.9	0.7	36.7	83.2	253.5
2007 - 2008	530.9	-381.1	149.8	1.6	37.7	71.6	260.7
2008 - 2009	605.8	-440.7	165.2	2.9	36.0	59.0	263.1
2009 - 2010	670.6	-495.6	175.0	4.7	32.1	45.1	257.0
2010 - 2011	725.3	-544.0	181.3	7.0	26.7	31.7	246.7
2011 - 2012	771.9	-586.8	185.1	9.7	20.8	18.9	234.5
2012 - 2013	814.1	-626.5	187.5	13.0	15.3	11.3	227.1
2013 - 2014	862.9	-663.5	199.4	16.7	10.7	7.6	234.4
2014 - 2015	890.4	-699.8	190.6	20.8	7.1	5.1	223.7
2015 - 2016	921.4	-727.4	194.0	25.3	4.5	3.4	227.2
2016 - 2017	946.8	-748.1	198.7	30.0	2.7	2.3	233.6
2017 - 2018	969.9	-767.0	202.8	33.4	1.5	1.5	239.2
2018 - 2019	987.5	-781.6	206.0	36.0	0.8	0.6	243.4
2019 - 2020	1,003.9	-795.8	208.1	38.0	0.4	0.1	246.7
2020 - 2021	1,017.4	-806.5	210.9	39.6	0.2	0.1	250.7
2021 - 2022	1,029.6	-816.6	213.0	40.8	0.1	0.0	254.0
2022 - 2023	1,041.2	-826.2	215.0	41.9	-	-	257.0
2023 - 2024	1,052.6	-835.5	217.1	42.9	-	-	260.0
2024 - 2025	1,064.7	-845.2	219.5	44.0	-	-	263.4
2025 - 2026	1,078.0	-855.8	222.2	44.9	-	-	267.2
2026 - 2027	1,093.3	-867.7	225.6	45.8	-	-	271.4

For the Direct Loan Regime, the interest on impaired loans continues to accrue only for the first three years. This interest is included in the second column of Table 20 labelled "Student Interest Payment". The borrowing cost during repayment and on defaulted loans reduces the revenue of interest payments to obtain a net interest revenue. Interest from recovery for loans in the Direct Loan

Regime includes only interest recovered after the first three years following impairment, since it was already accrued.

For the Risk-Shared Regime, the total expected recovery in Table 20 is \$335 million: \$223 million in principal and \$112 million in interest. The total expected recovery for the Guaranteed Regime is \$902 million: \$329 million in principal and \$573 million in interest.

## 6. Net Cost of the Program

The following two tables show in current dollars and in 2002 constant dollars, total expenses, revenues, and the net cost of the Program for the 25-year projection period. The expenses and revenues shown correspond to the data presented earlier in this report.

**Table 21 Net Annual Cost of the Program (\$ million)**

Loan Year	All Regimes			Net Cost of the Program	
	Total Expenses	Total Revenue	Total Net Cost of the Program	Direct Loan	Risk-Shared & Guaranteed
2001 - 2002	963.3	137.1	826.2	680.6	145.5
2002 - 2003	832.6	157.8	674.9	621.2	53.7
2003 - 2004	934.0	190.9	743.1	737.3	5.8
2004 - 2005	929.6	221.4	708.2	738.5	-30.3
2005 - 2006	927.4	238.5	689.0	737.7	-48.8
2006 - 2007	930.8	253.5	677.2	737.9	-60.6
2007 - 2008	947.8	260.7	687.1	751.7	-64.6
2008 - 2009	973.8	263.1	710.7	772.6	-61.9
2009 - 2010	1,010.3	257.0	753.3	805.8	-52.5
2010 - 2011	1,044.6	246.7	797.9	838.5	-40.6
2011 - 2012	1,116.8	234.5	882.3	910.0	-27.7
2012 - 2013	1,120.0	227.1	892.9	911.7	-18.8
2013 - 2014	1,161.8	234.4	927.4	940.9	-13.4
2014 - 2015	1,204.8	223.7	981.1	990.3	-9.2
2015 - 2016	1,233.7	227.2	1,006.5	1,012.5	-6.0
2016 - 2017	1,250.5	233.6	1,016.8	1,020.7	-3.9
2017 - 2018	1,269.8	239.2	1,030.6	1,033.0	-2.4
2018 - 2019	1,284.3	243.4	1,040.9	1,042.0	-1.1
2019 - 2020	1,309.8	246.7	1,063.1	1,063.5	-0.4
2020 - 2021	1,338.6	250.7	1,087.9	1,088.0	-0.2
2021 - 2022	1,365.2	254.0	1,111.2	1,111.3	-0.1
2022 - 2023	1,394.9	257.0	1,138.0	1,138.0	-
2023 - 2024	1,428.3	260.0	1,168.3	1,168.3	-
2024 - 2025	1,464.9	263.4	1,201.5	1,201.5	-
2025 - 2026	1,504.1	267.2	1,236.9	1,236.9	-
2026 - 2027	1,544.5	271.4	1,273.1	1,273.1	-

As shown in Table 21, the initial net annual cost for the Program is \$826 million for the loan year 2001-02. During the next six years, net costs are projected to decline by 17% due to the phasing out of the previous loan regimes. For the

remainder of the projection period, the net cost of the Program grows, reaching \$1.3 billion in the loan year 2026-27. This represents an annual average increase of 1.7% for the entire projection period.

In 2002 constant dollars (Table 22), the cost of the Program declines by an average of 0.9% a year, from \$826 million in the loan year 2001-02 to \$652 million in 2026-27.

**Table 22 Net Annual Cost of the Program (in millions of 2002 constant dollars)<sup>2</sup>**

Loan Year	All Regimes			Net Cost of the Program	
	Total Expenses	Total Revenue	Total Net Cost of the Program	Direct Loan	Risk-Shared & Guaranteed
2001 - 2002	963.3	137.1	826.2	680.6	145.5
2002 - 2003	810.6	153.6	657.0	604.7	52.3
2003 - 2004	891.5	182.2	709.3	703.7	5.5
2004 - 2005	869.8	207.2	662.7	691.0	-28.3
2005 - 2006	850.3	218.6	631.7	676.4	-44.7
2006 - 2007	835.3	227.5	607.8	662.2	-54.4
2007 - 2008	831.8	228.8	603.0	659.8	-56.7
2008 - 2009	835.0	225.6	609.4	662.5	-53.0
2009 - 2010	845.5	215.0	630.5	674.4	-43.9
2010 - 2011	852.4	201.3	651.1	684.2	-33.1
2011 - 2012	887.7	186.4	701.3	723.3	-22.0
2012 - 2013	866.3	175.7	690.7	705.2	-14.6
2013 - 2014	873.7	176.3	697.5	707.6	-10.1
2014 - 2015	880.0	163.4	716.6	723.3	-6.7
2015 - 2016	874.9	161.1	713.8	718.0	-4.3
2016 - 2017	860.9	160.9	700.1	702.8	-2.7
2017 - 2018	848.8	159.9	688.9	690.5	-1.6
2018 - 2019	833.5	157.9	675.5	676.3	-0.7
2019 - 2020	825.3	155.4	669.8	670.1	-0.3
2020 - 2021	818.8	153.4	665.5	665.6	-0.1
2021 - 2022	810.8	150.8	659.9	660.0	0.0
2022 - 2023	804.3	148.2	656.2	656.2	-
2023 - 2024	799.6	145.6	654.0	654.0	-
2024 - 2025	796.2	143.2	653.0	653.0	-
2025 - 2026	793.7	141.0	652.7	652.7	-
2026 - 2027	791.2	139.0	652.2	652.2	-

<sup>2</sup> For a given year, the value in 2002 constant dollars is equal to the corresponding value divided by the ratio of the cumulative index of the Consumer Price Index (CPI) of that given year by the cumulative index of the CPI for 2002.

### III- Conclusion

The Canada Student Loans Program promotes accessibility to post-secondary education for those with demonstrated financial need by providing loans and grants, thereby encouraging successful and timely completion of post-secondary education. The Government became involved in assisting students, because post-secondary education is costly. The CSLP is meant to supplement resources available to students from their own earnings, their families, and other student awards.

Effective 1 August 2000, the Government redesigned the delivery of the CSLP from a Program delivered by financial institutions to one directly financed by the Government. As part of this redesign, the Office of the Chief Actuary was given a mandate to conduct an actuarial review to provide an assessment of the current costs of the CSLP, a long-term (25 years) forecast of these costs, a portfolio projection, and a discussion of all the assumptions underlying the results of the review.

The number of students receiving a CSLP loan in a year is expected to increase from 332,000 to 443,000 over the projection period. It represents an increase in the participation of the students in the CSLP from 42% to 58%. Such an increase in participation in the Program is mainly a result of rising student needs. These needs are affected by the projection of tuition fees and other expenses increasing at a faster rate compared to resources. Contrary to the past two decades, the number of students enrolled in post-secondary institutions is not a contributing factor to such an increase.

The total growth rate of new loans issued is, on average, 2.0% per year; it comprises an annual average increase of 1.2% in the number of students participating in the CSLP and only a 0.8% increase in the average loan size caused by keeping the weekly loan limit constant.

The portfolio of student loans increases from \$9.8 billion to \$19.0 billion by 2026-27. In constant dollars, the portfolio is projected to decrease slightly during the same period from \$9.8 billion to \$9.7 billion. Moreover, by 2018, the entire portfolio consists of loans issued in the Direct Loan Regime.

The total net cost of the Government's involvement in the CSLP, which is the difference between the expenses and the revenues, is expected to grow from \$826 million to \$1.3 billion. This represents an average annual increase in the cost to the Government of 1.7%. The cost of the Government's involvement in constant 2002 dollars is expected to decrease from \$826 million to \$652 million. This represents an average annual decrease of 0.9% in constant dollars.

#### **IV- Actuarial Opinion**

In compliance with the standards of practice of the Canadian Institute of Actuaries, we are hereby giving the opinion that,

- the data on which this report is based are sufficient but incomplete;
- the demographic and economic assumptions that have been used are, in aggregate, appropriate; and
- the valuation conforms with the requirements of the Public Sector Accounting Handbook of the Canadian Institute of Chartered Accountants.

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



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Michel Millette, 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

Ottawa, Canada  
14 May 2003

## V- APPENDICES

### Appendix 1 – Summary of Program Provisions

The Canada Student Loans Program (CSLP) came into force on 28 July 1964 to provide Canadians equal opportunity to study beyond secondary level and to encourage successful and timely completion of post-secondary education. The Government became involved to assist students, because post-secondary education is costly. The CSLP is meant to supplement resources available to students from their own earnings, their families and other student awards.

Historically, two successive acts were established to assist qualifying students. The *Canada Student Loans Act* was established, applying to loan years preceding August 1995 and the *Canada Student Financial Assistance Act* replaced the previous act for loan years after July 1995. Both acts permit the Minister of Human Resources Development Canada to provide loans to eligible students under the CSLP.

#### 1. Eligibility Criteria

A student must be a Canadian citizen, within the meaning of the *Immigration Act*, and must demonstrate the need for financial assistance to become eligible to receive a loan. The students must also fulfill all the following criteria to be considered for a loan. Loans are available to full-time students regardless of age and, since 1983, to part-time students. For full-time studies, they must:

- be enrolled in at least 60% of a full course load (40% for students with disabilities) in a post-secondary course that leads to a degree, diploma or certificate, offered at a designated educational institution for the purposes of the CSLP;
- maintain a satisfactory scholastic standard;
- if over age 21 and applying for a loan for the first time, pass a credit check;
- not have a previous defaulted loan;
- realize that assistance is limited to either a lifetime limit of 340 weeks or the number of periods of studies normally specified by the institution for completion of that program plus one period; and
- apply every year to their province of residence for a loan.

#### 2. Partnerships

Since inception in 1964, the Minister has delegated powers, under both appropriate acts, to the participating provinces/territory to administer the CSLP. The participating provinces have their own student financial assistance programs that complement the CSLP. On behalf of the Government of Canada, the provinces and territory also determine whether the students need financial assistance and their eligibility for the CSLP. Provincial/territorial authorities calculate the costs and determine the needs of the student based on the difference between costs and resources available. For each school year, the CSLP covers 60% of the assessed need with a maximum of \$165 per week. The participating provinces complement

the CSLP by providing 40% of the assessed need with a maximum of \$110 per week. The amount of money students may borrow depends on their individual circumstances.

The National Student Loans Services Centre (NSLSC) was established 1 March 2001 to assist students with questions related to the CSLP. Once students qualify for a loan, they obtain their loans from the NSLSC. Service providers receive and process all the applicable loan documentation; i.e., from the disbursement to the consolidation and repayments of the loans. They also keep the students informed of all available options.

The type of financial arrangement has varied through time and legislation. The following describes these different arrangements and the risks associated with default.

- Guaranteed Loan Regime: The student loans provided by the lenders (financial institutions) prior to August 1995, under the *Canada Student Loans Act*, were fully guaranteed by the Government to the lenders. The Government would reimburse the lenders for the outstanding principal, accrued interest and costs, in the event of default or death of the student. Therefore the Government bears all the risks involved with guaranteed loans.
- Risk-Shared Loan Regime: For the period from August 1995 to July 2000, student loans continued to be disbursed, serviced and collected by financial institutions. They were no longer fully guaranteed by the Government. Instead, the *Canada Student Financial Assistance Act* permitted the Government to pay financial institutions a risk premium of five per cent of the value of loans that consolidated in a year. Under this financial arrangement, the Government was not at risk except for the payment of the risk premium.
- Direct Loan Regime: A new direct loan arrangement came into force, effective 1 August 2000, following the restructuring of the delivery of the Program and amendments made to the Regulations of the *Canada Student Financial Assistance Act*. The Government issues loans directly to the student and, again, bears all the risks involved.

### 3. Loan Benefit

#### a) In-study Interest Subsidy

The CSLP provides an interest-free loan during the period that the student is in full-time studies. The benefit is available to full-time students only and takes the form of an in-study interest subsidy. During this period, the Government pays interest (Government borrowing cost) on the loan; no payment on the principal is required from the student until they graduate.

Part-time students are provided assistance in the form of a line of credit. Unlike full-time students, they must make interest payments while in school.



**Table 23 In-study Interest Rate**

<b>Loans Issued</b>	<b>Interest Rate</b>
Before August 1995	6 month average of 5-year Canada bond
August 1995 to August 2000	Prime rate
After August 2000	Government borrowing cost

b) Loan Consolidation

At graduation, or if the student does not return to school, all of the student's loans are consolidated or added together during the six-month grace period. During this period, interest accrues on the loan(s) but no payment on the principal is required; the student has to negotiate an agreement with the lending institution to set out the repayment terms. This is called consolidating all the loans and now the student becomes a borrower in repayment.

For loans issued prior to August 1993, no interest accrues during the grace period because the Government continued to pay interest on the loans during this period in the same manner as for the in-study period. For loans issued after July 1993, the student is liable for interest that accrues on loans during this grace period.

Each year, once students return to school, they must provide the lenders with proof of enrolment for each study period in which they are enrolled, even if they are not applying for a new loan. This prevents automatic consolidation from happening while the student is still in school and permits the student not to pay interest on their loan.

**Table 24 In-repayment Interest Rate**

<b>Loans Issued</b>	<b>Interest Rate</b>
Before August 1995	6 month average of 10-year Canada bond
After July 1995	Floating (prime + 250 points) <b>or</b> Fixed (prime + 500 points)

c) Repayment Assistance

The CSLP has measures in place to help students repay their loans - interest relief, extended interest relief and debt reduction in repayment (DRR).

In 1983, the Government introduced a maximum of 18 months of interest relief to assist students experiencing financial difficulty in repaying their loan. The Government assumes responsibility for making interest payments on the outstanding loan and no principal payments are made. In 1997, this measure extended the maximum interest relief that could be obtained from 18 to 30 months. At first, the interest relief had to be taken within the first five years after the completion of studies, then, in 1998, the five-year limit was removed, allowing anyone to be entitled to receive interest relief at any time during the repayment period.

The Government also introduced a new extended interest relief measure for students who remain in financial difficulty, after the exhaustion of the 30 months of interest relief period. First, the repayment period is extended to 15 years to provide the student lower monthly payments. Second, if the student is still in financial difficulty, the interest relief period may be extended further to cover completely the first five years after leaving school. As much as 24 additional months may be awarded if the student is still within the first five-year period after leaving school, bringing the number of interest relief months up to a maximum of 54 months.

In 1998, a DRR measure was also introduced. It is a one-time benefit to help students who remain in financial difficulty once all possible interest relief is exhausted. The Government will, upon application and qualification, reduce the loan principal by 50% up to a maximum of \$10,000.

Also, the Minister has the authority, upon application and qualification, to forgive the loan in the event of a borrower's permanent disability or death.

#### 4. Canada Study Grants

Canada Study Grants were introduced as non-repayable grants administered since 1995 by the participating provinces on the Government's behalf. These grants are taxable and they assist students with permanent disabilities, high-need part-time students, women pursuing certain doctoral studies and students with dependants. Starting in August 2002, a new Canada Study Grant was introduced for high-need students with permanent disabilities. Students qualify for a grant if they have assessed needs in excess of \$275 per week of study. The following table summarizes the key features.

**Table 25 Key Features of Canada Study Grants**

Category by Student	Yearly Maximum	Additional Eligibility Requirements
Permanent disabilities	\$8,000	<ul style="list-style-type: none"> <li>• Exceptional education-related costs associated with permanent disability</li> </ul>
High-need with permanent disabilities	\$2,000	<ul style="list-style-type: none"> <li>• Enrolled in courses representing 40% of a full-time course load</li> <li>• Costs related to tuition, accommodation, books and other education-related expenses</li> </ul>
High-need part-time	\$1,200	<ul style="list-style-type: none"> <li>• Enrolled in courses representing 20% of a course load</li> <li>• Justify reason for part-time studies</li> <li>• Depends on gross income and living situation</li> </ul>
Women pursuing doctoral studies	\$3,000 and three years maximum	<ul style="list-style-type: none"> <li>• Studying in certain fields at doctoral level to help increase participation of women</li> </ul>
With dependants	\$3,120 - full-time \$1,920 - part-time	<ul style="list-style-type: none"> <li>• Extra \$40 per week of study with one or two dependants</li> <li>• Extra \$60 per week of study with three or more dependants</li> </ul>

## Appendix 2 – Data

The input data required with respect to loans issued, defaults, recoveries and consolidations were extracted from data files provided by Human Resources Development Canada (HRDC). The data were compared to unaudited accounting information from HRDC and to a study of HRDC entitled “Evaluation of the Canada Student Loans Program”. Some adjustments were necessary in order to use this data. Overall, the data were found to be reliable but incomplete.

### 1. Loans Issued

Table 26 presents the data provided by HRDC on the number of students and amount of Direct Loans issued for loan years 2000-01 and 2001-02.

**Table 26 Direct Loans Issued and Number of Students**

Loan Year	Number of Students	Amount of Loans Issued (\$ million)
2000-2001	346,568	1,570
2001-2002	331,541	1,512

### 2. Loans Consolidated 1989-96

Table 27 compares the number and amount of loans consolidated extracted from a HRDC data file<sup>3</sup> with those found in the study<sup>4</sup>. It can be seen that the file contains approximately 91% of the amount of loans consolidated and does not reconcile on a loan-year basis.

**Table 27 Loans Consolidated**

Loan Year	Number of Loans Consolidated <sup>3</sup>	Number of Loans Consolidated <sup>4</sup>	Amount of Loans Consolidated <sup>3</sup> (\$ million)	Amount of Loans Consolidated <sup>4</sup> (\$ million)
1989-90	96,034	109,870	605	643
1990-91	94,990	110,498	618	669
1991-92	99,034	114,292	638	692
1992-93	108,640	125,730	714	785
1993-94	118,169	132,337	795	852
1994-95	130,240	151,050	942	1,046
1995-96	143,698	166,437	1,151	1,288

### 3. Financial Institutions Loan Portfolio and Risk Premium

The outstanding portfolios for Guaranteed and Risk-Shared loans in-study and in repayment are provided by the financial institutions and are not audited. The total risk premiums invoiced by them for the loan year 2001-02 amount to \$44.7 million which is similar to a \$44.0 million risk premium estimated from the model.

<sup>3</sup> Data file (Borrower).

<sup>4</sup> Evaluation of the Canada Student Loans Program, October 1997.

#### 4. Defaulted and Recovered Loans

Table 28 shows the data on defaults and recoveries (principal and interest). The one-year increase of 138% for recoveries in the loan year 1998-99 does not appear in accounting information from HRDC. The recoveries shown in 1998-99 may not relate to that particular loan year.

**Table 28 Administrative Defaults and Recoveries**

<b>Loan Year</b>	<b>Defaults<sup>5</sup></b> (\$ million)	<b>% Increase</b>	<b>Recoveries<sup>5</sup></b> (\$ million)	<b>% Increase</b>
1992-1993	189	-	112	-
1993-1994	226	20	113	1
1994-1995	283	25	113	0
1995-1996	415	47	137	22
1996-1997	340	-18	185	35
1997-1998	265	-22	167	-9
1998-1999	128	-52	398	138
1999-2000	68	-47	142	-64
2000-2001	62	-9	130	-8

In future actuarial reports, the history of all defaults, recoveries and write-offs will be analyzed and compared with government practices.

#### 5. Interest Relief and Debt Reduction in Repayment

Table 29 presents the interest relief that has been invoiced by financial institutions as well as the interest relief expense extracted from the HRDC data files. The interest relief file does not contain interest relief payment information; it has to be estimated using the interest rate, outstanding principal amounts, and interest relief starting and end dates.

**Table 29 Interest Relief Payment Data (\$ million)**

<b>Loan Year</b>	<b>Invoiced from Financial Institutions</b>	<b>Estimated from HRDC Files</b>
1997-1998	42.0	38.7
1998-1999	67.4	58.2
1999-2000	92.7	73.6
2000-2001	106.8	93.8
2001-2002	73.7	70.5

Since the inception of DRR in 1998, financial institutions have invoiced for a total of \$9.8 million as of 31 July 2002 (\$5.5 million in loan year 2001-02). There is no data file available on DRR at the time of the valuation.

The utilization of interest relief and DRR is adjusted to obtain the total amount invoiced by the financial institutions for Guaranteed and Risk-Shared loans.

<sup>5</sup> Departmental Accounts Receivable System (DARS), HRDC.

## Appendix 3 – Assumptions and Methodology

### 1. Growth Rate of New Loans Issued

#### a) Growth Rate of CSLP Students

The following table summarizes each individual growth component of the evolution of students participating in the CSLP. The individual growth rate components are presented for every year of the projection period, and they reconcile with the overall growth rate of the number of students in the CSLP. The methodology of each element is described in the following sections.

**Table 30 Growth of Students in the CSLP (in percentages)**

Loan Year	Demographic Evolution Ages 18-34	Post-secondary Enrolment	Elimination of Grade 13 in Ontario	Students Enrolled	Participation in CSLP	Total CSLP Students
2002 - 2003	0.8	-3.0	1.2	-1.1	1.5	0.4
2003 - 2004	0.9	0.6	5.3	6.9	1.3	8.3
2004 - 2005	0.9	0.0	-0.7	0.2	0.8	1.0
2005 - 2006	0.6	-0.9	-1.7	-2.0	0.8	-1.2
2006 - 2007	0.4	-1.0	-1.7	-2.3	0.8	-1.5
2007 - 2008	0.8	0.1	-1.1	-0.2	0.9	0.8
2008 - 2009	1.1	1.4	-0.6	1.8	1.0	2.8
2009 - 2010	0.9	0.7	-0.4	1.3	1.1	2.3
2010 - 2011	0.7	0.1	-0.2	0.6	1.1	1.8
2011 - 2012	0.5	-0.4	-0.1	0.0	1.2	1.2
2012 - 2013	0.5	0.1	0.0	0.5	1.2	1.8
2013 - 2014	0.5	0.6	-	1.1	1.3	2.4
2014 - 2015	0.2	0.7	-	0.9	1.4	2.2
2015 - 2016	-0.7	-0.9	-	-1.6	1.4	-0.3
2016 - 2017	-0.9	-2.0	-	-2.9	1.4	-1.5
2017 - 2018	-0.9	-1.4	-	-2.3	1.5	-0.9
2018 - 2019	-1.0	-1.5	-	-2.5	1.5	-1.1
2019 - 2020	-0.5	0.1	-	-0.4	1.5	1.1
2020 - 2021	-0.5	0.5	-	-0.1	1.5	1.5
2021 - 2022	-0.5	-0.4	-	-0.9	1.6	0.6
2022 - 2023	0.0	-0.5	-	-0.4	1.6	1.1
2023 - 2024	0.3	-0.5	-	-0.2	1.6	1.4
2024 - 2025	0.4	-0.4	-	0.0	1.6	1.6
2025 - 2026	0.5	-0.3	-	0.2	1.7	1.9
2026 - 2027	0.3	-0.3	-	0.0	1.7	1.6

Table 30 summarizes the growth of student enrolment in post-secondary education and the participation in the CSLP by using geometric compounding of the demographic evolution, the enrolment, the elimination of Grade 13 in Ontario, and the increased participation in the CSLP. The Student Enrolled percentages correspond to the growth rate column of Table 4 of the Main Report. The last column corresponds to the growth rate of the number of students in the CSLP (third column of Table 8, Main Report).

i) Demographic Evolution

The demographic evolution involves changes in the composition of the future population aged 18-34 for Canada excluding the non-participating province of Québec and territories of Northwest Territories and Nunavut, to which future fertility, mortality and migration assumptions are applied. These rates are calculated with population growth rates for each age weighted by the CSLP age distribution. Thus, ages containing a greater number of CSLP students would have a greater weight in the final determined growth rate. The fertility, mortality, and migration assumptions were based on those used in the actuarial reports of the Canada Pension Plan and Old Age Security.

ii) Post-secondary Enrolment

The evolution of post-secondary enrolment shows a long-term decrease in post-secondary enrolment primarily caused by the future anticipated labour shortage. This labour shortage is caused by the significant aging of the Canadian population and will significantly raise labour participation rates. The labour force non-participation rates associated with post-secondary enrolment are shown for years 2001-02, 2010-11 and 2026-27 in Table 31 below.

A labour shortage is forecasted in Canada after year 2010 because of the significant aging of the Canadian population. This shortage will raise future labour force participation rates. A higher expected participation rate in the future implies that a smaller percentage of potential full-time students will be available to attend a post-secondary institution. To measure the effect of this increase in participation, the change in the percentage of individuals not in the labour force is analyzed over time. The result is the percentage change of individuals not in the labour force weighted by the percentage of eligible individuals in each age band.

**Table 31 Enrolment of Students in Post-secondary Education**

Age Band	Not in Labour Force		Change – Not in Labour Force (2) / (1) - 1	Not in Labour Force	
	2001-02 (1)	2010-11 (2)		2026-27 (3)	Change – Not in Labour Force (3) / (1) - 1
	%	%	%	%	%
18-19	33.5	33.8	0.8	33.0	-1.5
20-24	24.8	23.9	-3.5	22.6	-8.9
25-29	16.2	16.0	-1.1	13.1	-18.8
30-34	15.5	14.9	-3.9	12.4	-20.2
18-34	20.4	20.0	-1.7	17.7	-13.1

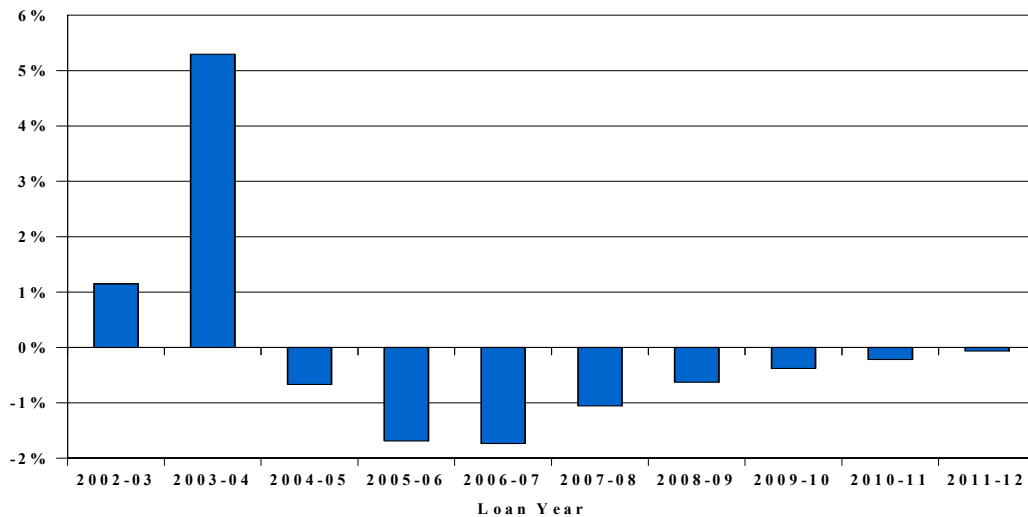
This table demonstrates a decrease in the inactive population, with an expected cumulative decrease of 1.7% over the next ten years and a larger decrease of 13.1% by 2026-27. The labour shortage will cause the expected decrease in the population not in the labour force from 2010-11 to 2026-27. This decrease is mainly concentrated in the older age ranges (25-34) since these individuals are most likely to choose being employed over attending school for a long period of time, given that suitable work is

available to them. The younger age group is more likely to attend college or university regardless of the situation in the labour force.

iii) Elimination of Grade 13 in Ontario

The double cohort, resulting from the elimination of Grade 13 by August 2003 by the Government of Ontario, was determined to cause a growth effect of 10% on the total number of students enrolled full-time in post-secondary institutions, starting in 2002-03. It represents the proportion of Ontario students who received their first loan in comparison with all students who received a loan in 2001-02. Further, the effect is spread over four years starting in 2002-03 because of the ‘fast-trackers’ (Double Cohort Study Phase 2 by Dr. Alan King), space limitations, the new curriculum, and some students delaying the start of post-secondary education. The distribution of the double cohort entrance in post-secondary institutions is as follows: 12% in the first year, 60% in the second, 20% in the third, and 8% over the fourth year. This effect will phase out when both cohorts graduate completely and consolidate their loans. Chart 4 shows the progression of the resulting growth of students in the CSLP caused by the elimination of Grade 13.

**Chart 4 Growth of Students Caused by Elimination of Grade 13 in Ontario**



iv) Participation in the CSLP

Participation in the CSLP is determined from the evolution of students’ expenses and resources. Expenses include tuition, books, food, transportation, and shelter; resources include wages, parental contributions, savings, and grants. The excess of students’ expenses over their resources defines their need. A student becomes eligible for a loan if his/her need is positive. Some students have negative needs and are not eligible; others with positive needs do not take their loans because the amounts are very small. In the projection period, some students will become eligible and/or will decide to take their small loans because their needs will have increased. On average, students’ expenses increase faster than their resources.

The number of students with loans between \$35 and \$45 a week is used as an estimate of new loans created for each \$10 increase in need. The average size of new small loans issued is about \$40 per week, since any amount less than this is insignificant to the student and, on average, the loan is not taken. Based on past experience, an eligibility parameter has been developed. The eligibility parameter of 0.13% is derived from the loan year 2001-02, and it represents the proportion of non-eligible students who become eligible for a loan for each \$1 increase in need per week.

The impact on the growth rate of participation in CSLP is determined using the annual increase in need per week, applied to both the eligibility parameter for every \$1 increase in need of 0.13% and the proportion of students without a loan.

b) Growth Rate of Average Loan Size

The following table summarizes the growth components of the average loan size for each student in the CSLP. The growth rates for each individual component are presented for every year of the projection period. These growth rates combined (first four columns) give a good approximation of loan size growth, given no loan limit. The total average loan size growth rate is derived by adding the effect of the limit and compounding the effect of new small loans.

**Table 32 Average Loan Size Growth (in percentages)**

Loan Year	Tuition	Student Resources	Other Expenses	Ontario Private Colleges Tuition Ceiling	Subtotal	Effect of Limit	New Small Loans	Total Average Loan Size Growth
2002 - 2003	5.4	-1.6	2.4	-0.4	5.7	-2.7	-1.3	1.7
2003 - 2004	2.4	-1.0	4.0	-	5.5	-2.7	-1.1	1.6
2004 - 2005	2.5	-2.2	3.0	-	3.3	-1.7	-0.7	0.9
2005 - 2006	2.5	-2.3	3.0	-	3.3	-1.7	-0.7	0.9
2006 - 2007	2.8	-2.4	3.1	-	3.6	-1.9	-0.7	0.9
2007 - 2008	3.1	-2.6	3.3	-	3.9	-2.2	-0.8	0.9
2008 - 2009	3.5	-2.8	3.5	-	4.2	-2.4	-0.9	1.0
2009 - 2010	3.9	-3.0	3.7	-	4.6	-2.7	-0.9	1.0
2010 - 2011	4.3	-3.2	3.9	-	5.0	-3.0	-1.0	1.0
2011 - 2012	4.5	-3.5	4.2	-	5.2	-3.2	-1.0	1.0
2012 - 2013	4.8	-3.7	4.4	-	5.5	-3.5	-1.1	0.9
2013 - 2014	5.2	-3.9	4.6	-	5.9	-3.8	-1.1	0.9
2014 - 2015	5.5	-4.1	4.9	-	6.2	-4.2	-1.2	0.9
2015 - 2016	5.8	-4.4	5.2	-	6.6	-4.5	-1.2	0.8
2016 - 2017	6.1	-4.6	5.3	-	6.9	-4.8	-1.2	0.8
2017 - 2018	6.4	-4.7	5.5	-	7.1	-5.1	-1.3	0.7
2018 - 2019	6.8	-4.9	5.6	-	7.4	-5.4	-1.3	0.7
2019 - 2020	7.1	-5.1	5.7	-	7.8	-5.8	-1.3	0.6
2020 - 2021	7.5	-5.2	5.8	-	8.1	-6.2	-1.3	0.6
2021 - 2022	7.9	-5.4	6.0	-	8.5	-6.5	-1.4	0.5
2022 - 2023	8.3	-5.6	6.1	-	8.8	-7.0	-1.4	0.5
2023 - 2024	8.8	-5.8	6.3	-	9.3	-7.4	-1.4	0.4
2024 - 2025	9.3	-6.0	6.4	-	9.7	-7.9	-1.4	0.4
2025 - 2026	9.8	-6.3	6.6	-	10.2	-8.4	-1.4	0.3
2026 - 2027	10.4	-6.5	6.8	-	10.6	-8.9	-1.4	0.3



i) Tuition

The average loan size growth caused solely by tuition fee increases is shown in Table 32. Tuition fees are, in part, determined by government policies. Thus, they are determined using provincial budgets stating their intentions along with recent and historical experience for projecting short and long-term growth rates in tuition. The future evolution of tuition is shown both in Table 5 of the Main Report and Table 33 of this appendix.

To arrive at an estimate for tuition growth, the provinces' respective budgets stating their intentions and actual tuition growth as reported in news releases and from statistics sources were used to project tuition growth for the next four years. The following table illustrates these results.

**Table 33 Short-term Growth of Tuition Expenses**

Province	Weight	Budget/Experience	Results			
			2002-03	2003-04	2004-05	2005-06
	%		%	%	%	%
Newfoundland	3.4	-7.3% decrease, freeze	-7.3	0.0	0.0	0.0
Prince Edward Island	0.9	3.2% increase	3.2	3.2	3.2	3.2
Nova Scotia	7.0	7.9% increase	7.9	7.9	7.9	7.9
New Brunswick	5.0	6.3% increase	6.3	6.3	6.3	6.3
Ontario	44.3	2.7% increase	2.7	2.7	2.7	2.7
Manitoba	2.8	0.2% increase	0.2	0.2	0.2	0.2
Saskatchewan	4.7	10.2% increase	10.2	10.2	10.2	10.2
Alberta	12.3	4.8% increase	4.8	4.8	4.8	4.8
British Columbia	19.6	33.9% initial increase, followed by 4.0% increase	33.9	4.0	4.0	4.0
Weighted Average			9.6	4.0	4.0	4.0

The long-term estimate of tuition is based on past increases in tuition relative to increases in the CPI. Over the last 25 years, tuition increases have been a result of increases in the CPI plus 3.0%. In the past, government budgetary cost pressures caused tuition fees to rise more quickly than inflation. Since similar budgetary pressures are expected in the future because of the aging of the population, the 4.0% tuition increase is graded to reach the CPI increase plus 3.0% by 2010-11.

The starting point for 2001-02 tuition fees is calculated from a Statistics Canada Education Division survey on tuition fees, tabulated on a provincial basis. The average tuition was weighted by the total amount of loans issued in each participating province. This analysis resulted in an estimate of \$4,296 for tuition fees in 2001-02.

The 60% portion of the tuition increase taken into account by the CSLP, divided by the average loan size for that year, determines the effect of tuition on the growth of the CSLP loan size.

## ii) Student Resources

This growth rate involves the growth in loan size attributable to student wages, parental contributions, and other resources. Increased resources ultimately serve to reduce the maximum loan available to a student through needs analysis. Student needs are developed in Table 5 of the Main Report.

The starting point for average resources in 2001-02 is calculated as a residual value. Since the average loan equals average expenses minus average resources, then average resources are roughly equal to average expenses minus average loan size with certain adjustments. This results in an estimate of \$6,463 for a student's average resources in 2001-02.

The 60% portion of the resources increase taken into account by the CSLP, divided by the average loan size for that year, determines the effect of resources on the growth of the CSLP loan size.

## iii) Other Expenses

This growth rate involves the growth in loan size attributable to student expenses other than tuition fees. These expenses include books, shelter, food, clothing and transportation and are assessed by the participating provinces and territory. They are shown in Table 34.

**Table 34 Living Cost Monthly Expenses**

Province	Weight in %	Monthly Budget \$					Annual Expenses \$
		Shelter	Food <sup>(1)</sup>	Transportation	Miscellaneous <sup>(2)</sup>	Total	
Newfoundland	3.37	318	197	53	171	740	8,880
Prince Edward Island	0.87	319	174	51	184	727	8,724
Nova Scotia	7.01	364	178	50	180	773	9,276
New Brunswick	4.96	334	179	54	173	741	8,892
Québec	1.15	313	201	54	236	805	9,660
Ontario	43.15	436	195	71	211	914	10,968
Manitoba	2.83	330	185	62	222	801	9,612
Saskatchewan	4.71	299	184	43	221	747	8,964
Alberta	12.30	319	187	46	225	777	9,324
British Columbia	19.62	481	197	58	197	935	11,220
Yukon	0.02	429	218	31	227	905	10,860
Northwest Territories	0.00	585	219	65	230	1,101	13,212
Weighted Average		404	192	61	205	863	10,356

<sup>(1)</sup> Purchased from stores.

<sup>(2)</sup> Personal and health care, clothing, cleaning, communications.

Expenses are separated into two categories: books and living costs. Simplifying assumptions are used to assess living costs. It is assumed that all students live away from home and incur expenses for the full 12 months. It is also assumed that during their pre-study period (summer) they are able to cover their living expenses with earned income. These simplifying assumptions are necessary in the absence of data on students' living arrangements. It is assumed that the most common arrangement is

students living away from home and paying for their lodging. The amount covered per week includes shelter, food, local transportation, and miscellaneous living expenses including clothing. Table 34 illustrates the amounts allotted per month by category and by weight per province/territory to derive the final annual expense for shelter, food, transportation, and miscellaneous living expenses. The total of these expenses amounts to \$10,356.

Books and supplies are assumed to be roughly equal to 20% of tuition. This brings the total expenses attributable to books and supplies to \$859. The total amount of the CSLP student expenses, indexed in the future to increases in the CPI, amounts to \$11,215 for the loan year 2001-02.

The 60% portion of the expenses increase taken into account by the CSLP, divided by the average loan size for that year, determines the effect of expenses on the growth of the CSLP loan size.

#### iv) Private Colleges Tuition Ceiling in Ontario

The ceiling on tuition was modified for private colleges of Ontario by the Government of Ontario. The ceiling, formerly \$7,500, lowered to \$6,000 in 2001 and lowered further to \$4,500 in 2002, brought the ceiling in line with public institutions.

The effect of private colleges on the growth in 2002-03 comes from an estimated number of students affected by the change in the tuition ceiling. The new tuition ceiling reduces the growth rate on average loans in the loan year 2002-03.

#### v) Effect of the Loan Limit

The negative impact of the loan limit on average loan size growth is presented in Table 32. Students at the loan limit cannot increase their loan size despite cost pressures and increased needs. The negative effect is a direct result of the frozen limit in the base scenario.

The average size of each loan is affected by the limit. For example, the average size of the loan would have increased by 5.7% from 2001-02 to 2002-03. However, since 47.8% of the loans are at the limit in 2002-03, only 52.2% of the effect will be felt.

A limit parameter was derived using the historical proportion of individuals near the loan limit. This limit parameter, set at 0.90%, is used to determine the proportion of students reaching the limit for every \$1 increase in loan per week. The impact on the average loan size growth is determined using the average increase in loan per week, applied to both the limit parameter for every \$1 increase in loan and the proportion of students not at the limit.

Table 35 illustrates how the effect of the limit will evolve over time. The table shows that the negative effect is greatest in 2026-27 when a greater percentage of the students are at the limit and when the change in the average loan size without a limit is larger.

**Table 35 Loan Limit Effect**

Loan Year	% of Change in Average Loan Size Without Limit	% at limit	Effect of Limit on Growth (%)
2002 - 2003	5.7	47.8	-2.7
2005 - 2006	3.3	52.6	-1.7
2010 - 2011	5.0	60.0	-3.0
2015 - 2016	6.6	68.3	-4.5
2020 - 2021	8.1	76.0	-6.2
2026 - 2027	10.6	83.5	-8.9

vi) New Small Loans

As new students become eligible for loans, the number of loans will increase. However, loans corresponding to students newly eligible are, on average, smaller than loans in the portfolio since these students were not eligible in the past. As a result, these loans have a negative impact on the loan size growth as a greater number of these smaller new loans are issued. The new small loan reduction effect is shown in Table 32 and Table 36.

First, an average size of new loans is calculated. Second, the combined average loan size is calculated as the weighted average of the new small loans size and the average loan size of the previous year. Third, the effect of the new small loans size on the portfolio is a reduction of the combined average loan size compared with the previous year's average loan size. The effect is greater when the increased participation in the CSLP and the average size of new small loans are higher.

**Table 36 New Small Loan Effect**

Loan Year	Increased Participation in CSLP	Average New Small Loans (\$)	Previous Year's Average Loan Size (\$)	Combined Average Loan Size (\$)	Effect of New Small Loans (\$)	Effect of New Small Loans
	(1)	(2)	(3)	(4)=(1)*(2) + (1-(1))*(3)	(5) = (4) - (3)	(6) = (5) / (3)
2002 - 2003	1.5%	669	4,561	4,503	-58	-1.3%
2005 - 2006	0.8%	605	4,754	4,722	-32	-0.7%
2010 - 2011	1.1%	651	4,979	4,930	-49	-1.0%
2015 - 2016	1.4%	699	5,216	5,153	-63	-1.2%
2020 - 2021	1.5%	746	5,412	5,340	-72	-1.3%
2026 - 2027	1.7%	823	5,562	5,482	-80	-1.4%

## 2. Consolidation

Under the Direct Loan Regime, loan consolidation occurs over a period of eight years after a loan is disbursed. Table 37 shows the percentage of consolidation by year since a loan is issued. These results were derived from past CSLP data.

**Table 37 Distribution of Consolidation**

Year After the Loan was Issued	% Consolidated
1 <sup>st</sup>	4.2
2 <sup>nd</sup>	38.0
3 <sup>rd</sup>	25.6
4 <sup>th</sup>	13.6
5 <sup>th</sup>	8.6
6 <sup>th</sup>	5.1
7 <sup>th</sup>	3.1
8 <sup>th</sup>	1.9

## 3. Interest Relief (IR)

Using the data file on interest relief, a distribution of loans consolidated going on interest relief was obtained separately for Risk-Shared and Guaranteed Regimes, and it was adjusted to match actual IR expenses. It was found that students are on interest relief for an average of six months in a year. The expense for interest relief has grown significantly in recent years as a result of extending interest relief from 18 to 54 months as shown in Table 38. It is reduced in 2001-02 as a result of improvements in the economic environment combined with a reduction in the student borrowing cost.

**Table 38 Interest Relief Expense (\$ million)**

Loan Year	Risk-Shared and Guaranteed Loans	Direct Loans
1997-98	42.0	-
1998-99	67.4	-
1999-00	92.7	-
2000-01	106.8	-
2001-02	73.7	3.1

Table 39 shows the utilization rates of interest relief for the Direct Loan Regime from loan year 2004-05 which are equal to the non-adjusted rates for the Risk-Shared Regime. For loan year 2001-02, the utilization rates are adjusted to 65% of the rates of Table 39. Adjustments are 80% for loan year 2002-03 and 90% for 2003-04.

**Table 39 Ultimate Utilization Rates for Interest Relief for the Direct Loan Regime**

Year Since Consolidation	First Year in IR	Second Year in IR	Third Year in IR	Fourth Year in IR	Fifth Year in IR
0 – 1	34.37%	17.22%	8.93%	3.65%	0.62%
1 – 2	5.74%	2.22%	0.86%	0.18%	0.01%
2 – 3	4.21%	1.89%	0.31%	0.02%	
3 – 4	2.47%	0.85%	0.15%		
4 – 5	1.40%	0.36%	0.02%		
5 – 6	0.31%	0.04%			
6 – 7	0.20%				
7 – 8	0.10%				

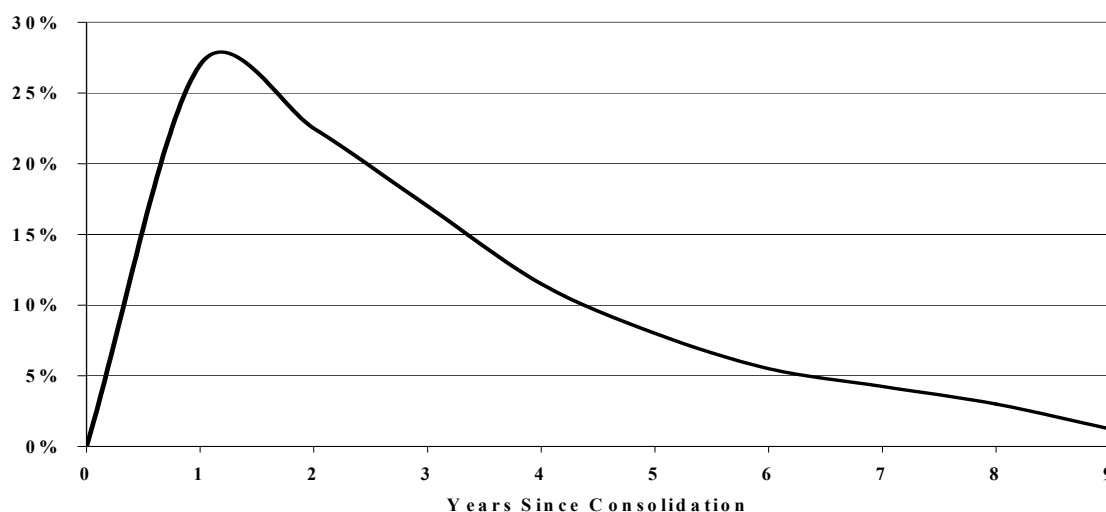
#### 4. Debt Reduction in Repayment

This is a relatively new program and there is limited experience from it. Debt reduction in repayment (DRR) is taken once all possible interest relief is used by the student borrower. The assumption for the proportion of amount of loans going on DRR after interest relief utilization is 80%. The average amount of debt relief is about 30% of the loan value.

#### 5. Default Rate

The amounts in default for loans in the Guaranteed Regime were analyzed by consolidation year. Since most of the defaults occur in the 10 years following consolidation, some extrapolation was made to complete the data. The last consolidation year considered is 1995-96. Approximately 98% of defaults occurred in the six years following consolidation. The remaining 2% of defaults were extrapolated. For future defaults, a distribution was developed to take into account changes in student behaviour resulting from program enhancements. Chart 5 shows this distribution.

**Chart 5 Default Distribution**



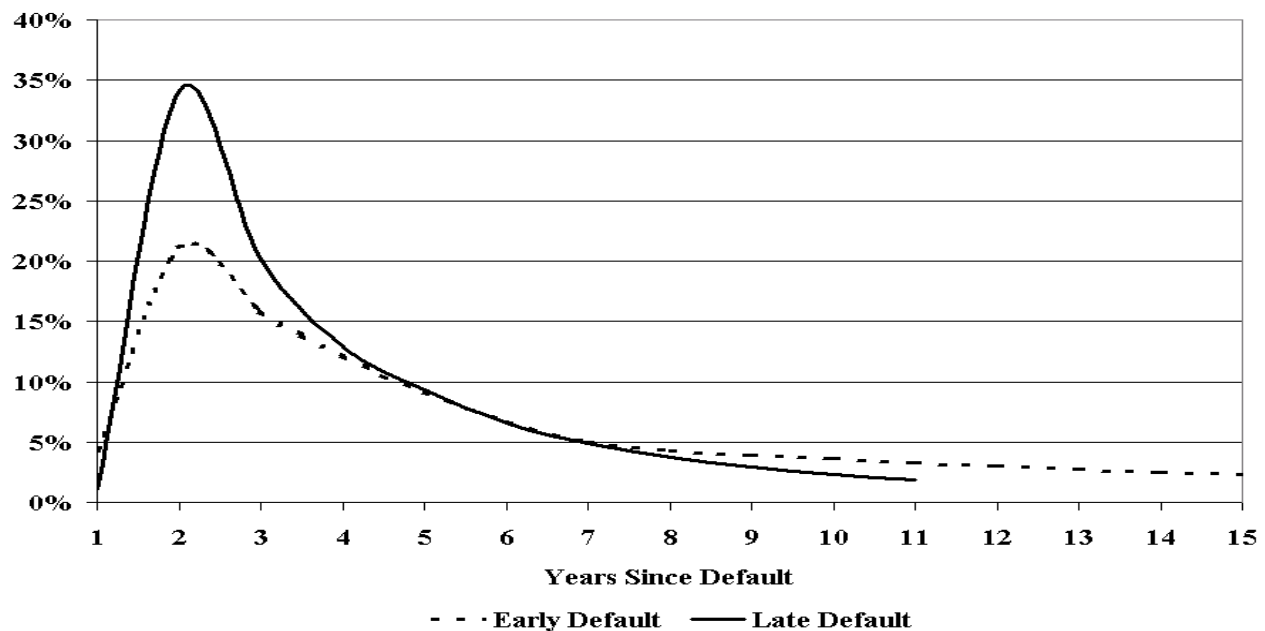
## 6. Recovery Rate

The recovery amounts for loans in the Guaranteed Regime were analyzed by consolidation year and by year since default. The empirical data were fit to a Weibull distribution. The flexible shape of this distribution makes it an appropriate fit for modelling the recovery process.

To fit the empirical data to a Weibull distribution, the parameters of the distribution were estimated by minimizing the sum of square of the errors with the curve. Once these parameters were found for all years of default, recoveries were extrapolated by adjusting the tail of the Weibull distribution to the empirical data. The recovery period was limited to 15 years as a realistic time frame in which loans can still be recovered.

To extrapolate data for more recent years where little information was available, an ultimate recovery rate was calculated using the most stable years (1989, 1990 and 1991). Separate distribution curves were obtained for the first four years of default occurrence since consolidation; a fifth curve is used as the ultimate distribution to extrapolate data in future years (Chart 6).

**Chart 6 Recovery Distribution Depending on Date of Default**



To calculate the proportion of defaults and recoveries, HRDC data files were used to classify amounts of default according to consolidation year and recoveries associated with each default year. Consolidated amounts were used from a study entitled “Evaluation of the Canada Student Loans Program” by HRDC in October 1997. Only data for the consolidation years 1989 through 1995 were in the study. Table 40 shows the results of administrative data and the default and recoveries by consolidation year.

**Table 40 Administrative Net Default Results**

<b>Consolidation Year</b>	<b>Consolidated Amount (\$ million)</b>	<b>Default (\$ million)</b>	<b>Recovery (\$ million)</b>	<b>Default Rate (%)</b>	<b>Recovery Rate (%)</b>	<b>Net Default (%)</b>
1989-90	642.5	161.3	83.7	25.1	51.9	12.1
1990-91	668.8	172.1	81.7	25.7	47.5	13.5
1991-92	691.6	187.0	84.8	27.0	45.4	14.8
1992-93	785.0	215.3	93.1	27.4	43.2	15.6
1993-94	852.2	244.5	103.5	28.7	42.4	16.5
1994-95	1,045.7	321.9	128.2	30.8	39.8	18.5
1995-96	1,172.2	384.8	131.8	32.8	34.2	21.6

Since defaults and recoveries generally involve a long period of runoff, some extrapolation had to be made to the administrative data to obtain a better estimate of defaults and recoveries. Table 41 shows extrapolated results.

**Table 41 Extrapolated Net Default Results**

<b>Consolidation Year</b>	<b>Consolidated Amount (\$ million)</b>	<b>Default (\$ million)</b>	<b>Recovery (\$ million)</b>	<b>Default Rate (%)</b>	<b>Recovery Rate (%)</b>	<b>Net Default (%)</b>
1989-90	642.5	161.3	92.4	25.1	57.3	10.7
1990-91	668.8	172.1	91.0	25.7	52.9	12.1
1991-92	691.6	187.1	97.1	27.1	51.9	13.0
1992-93	785.0	215.5	109.6	27.5	50.9	13.5
1993-94	852.2	245.1	131.3	28.8	53.6	13.4
1994-95	1,045.7	324.3	171.5	31.0	52.9	14.6
1995-96	1,172.2	391.4	198.3	33.4	50.7	16.5
			<b>Average</b>	<b>28.4</b>	<b>52.9</b>	<b>13.4</b>

The results in Table 41 show that the average default rate is 28.4% and the average recovery rate is 52.9% giving a net default rate of 13.4% based on past experience.

In future actuarial reports, data on the repayment rate will be requested and analysed.

## 7. Bad Debt Provision – Principal

According to the accounting recommendations under Section PS 3050 Loans Receivable of the Public Sector Accounting Handbook of the Canadian Institute of Chartered Accountants, a provision should be determined using the best-estimate available in light of past experience, current conditions and future expectations. The following factors were considered and will create an adjustment to the past net default rate of 13.4% to determine the adequate future provision.



a) Program Enhancements

As described in Appendix 1, the CSLP was enhanced in 1997 and 1998 in order to help students repay their loans.

The effect of the enhancements should be a decrease in gross defaults and recoveries in the future and result in a 0.6% reduction of the net default rate. As well, there is potential for the Government's new service providers to do a better job administering loans and informing students, which could also contribute toward lowering the net default rate.

b) Economic Environment (Past and Present)

The average net default rate for the years 1989-96 was based on past experience when the economic environment was very poor for students. For that period, the weighted average unemployment rate for the segment of the population aged 20 to 29 was 11.9%. The projected unemployment rate for year 2010 is 8.7%, a decrease of 27%.

A survey by HRDC indicated that 33% of defaults were attributable to unemployment.

The net decrease in the default rate resulting from the improved economic environment is the product of:

- 33% of defaults being due to lack of employment,
- a 27% decrease in the unemployment rate, and
- a 13.4% net default rate in a poor economic environment.

Based on the foregoing, the decrease in unemployment rate results in a decrease in the net default rate of approximately 1.2%, from 13.4% to 12.2%. This gives a reasonable figure for the effect of a change in the economic environment.

c) Grace Period Interest Accrued on Loans

The grace period refers to the six months after graduation where interest accrues on the loan but no payment is required.

The provision is applicable to the amount of loans issued; however, the amount of a loan at consolidation can be higher than the amount at issue due to added interest. An adjustment to the bad debt provision must be made for the interest added to the loan at consolidation. Assuming that the interest rate is 8.0% on average for the projection period, the adjustment that must be made is the product of:

- an 8.0% average annual interest rate,
- an 11.3% provision rate, and
- a six-month lag to consolidation divided by 12 months.

As a result, a 0.4% increase in the net default rate is made to determine the bad debt provision for the principal amount.

d) Debt Reduction in Repayment Provision

The amount of utilization of the DRR program will decrease the net default rate since those who default will do so on a lower loan balance (the loan will have been reduced). Therefore, the provision used for DRR should serve to reduce the net default rate. A downward adjustment of 0.7% is made to the net default rate, which represents the cost of DRR.

The following table summarizes all of the above adjustments along with the recommended bad debt provision – principal for the projection period.

**Table 42 Bad Debt Provision – Principal**

Historical Net Default Rate	13.4%
Adjustments:	
Program Enhancement	-0.6%
Economic Environment	-1.2%
Grace Period Interest on Accrued Loans	+0.4%
Debt Reduction in Repayment Expense	-0.7%
Bad Debt Provision – Principal	11.3%

For the Direct Loan Regime projections, the assumption used for the gross default rate on loans consolidated is 20.0% and 45.5% is used for the recovery rate. This gives a net default rate of 10.9%. The provision rate is set at 11.3% on new loans issued to take into account the grace period interest on accrued loans.

**8. Bad Debt Provision – Interest**

As recommended by Collection Services of HRDC, interest on impaired loans is accrued for three years and is accounted for as revenue. After three years, 80% of impaired loans remaining are assumed to be written-off uniformly over five years (years three to seven), with the balance written-off over the following four years. As a result, a provision must be set for interest on impaired loans.

The provision is calculated using the projection of new impaired loans (Table 11 of the Main Report) and the assumption for interest accrual on write-offs. The bad debt provision – interest corresponds to a percentage of new impaired loans in a loan year. The rate is 11.9% for loan year 2002-03 and increases up to 14.2% in 2014-15 due to the growth of the average student interest rate.

## 9. Debt Reduction in Repayment Provision

As in the previous report, the DRR provision rate is assumed to be 0.7% on all new loans issued.

The program enhancements would normally increase the provision rate for DRR. However, since the future economic environment will likely be better compared to past experience, the effect of these two components will offset each other. DRR is not affected by the interest rate; therefore, the provision will remain constant in the future.

## 10. Interest Relief Provision

This provision is calculated using a projection of future consolidations for one cohort of loans issued and a distribution by number of years since consolidation of the amount of loans going on interest relief.

Future costs are projected for one cohort of new loans issued. The resulting interest relief costs were summed and divided by the new loans issued to give 2.6% of the amount of new loans issued in 2000. The provision rate for 2001-02 is 3.0%. Since the provision used for 2000-01 and 2001-02 was 5%, the provision expense for the loan year 2002-03 must be reduced by \$68 million. Table 43 shows the interest relief provision used for the projection. The program enhancement and economic environment are assumed to counterbalance each other, but the increase in the interest rate assumption affects the level of the future provision.

**Table 43 Interest Relief Provision**

Loan Year	Provision Rate
2002-03	3.2
2003-04	3.4
2004-05	3.5
2005-06	3.6
2006-07	3.6
2007-08	3.7
2008-09	3.7
2009-10	3.8
2010-11	3.8
2011+	3.9

## 11. Others Assumptions

### a) Alternative Payments

The projection of alternative payments was made by multiplying the net cost of the Program by the ratio of the population aged 18-24 residing in the non-participating province and territories to the population aged 18-24 residing in the participating provinces and territory.

For the calculation of the alternative payments, the expenses are: interest subsidies, interest relief expenses for Risk-Shared and Guaranteed Regimes, loans forgiven, recovery costs, service providers' costs, Canada Study Grants, claims, risk premiums, put-backs, refunds to financial institutions, borrowing costs during repayment for loans in the Direct Loan Regime and default amounts for the Direct Loan Regime. The revenues are: students' interest payments and principal and interest from recoveries. The cost of alternative payments is \$116.4 million for the loan year 2001-02.

b) Recovery Costs

The recovery costs have been projected using a percentage of the recoveries. In 1999-2000, the recovery cost was 15.3% of the total recoveries. This rate is assumed to be constant in the future.

c) Administration Costs

HRDC provided estimates for five fiscal years of the administration costs to support the CSLP. The costs have been converted to a loan year basis and the extrapolation of future years was done using wage increases. Administration costs include expenses for service providers and are shown below in Table 44.

**Table 44 Administration Costs (\$ million)**

Loan Year	Administration Costs
2001-02	115.7
2002-03	147.7
2003-04	175.0
2004-05	172.5
2005-06	173.5
2006+	Increase with wages

d) Administration Fees to Provinces

For the loan year 2001-02, the cost for administration fees to the participating provinces and territory was \$8.3 million. The increase in wages is used to project this expense.

e) Canada Study Grants

For the loan year 2001-02, the actual cost of the Canada Study Grants is \$67.4 million. There is an additional amount of \$8 million in 2002-03 for enhancements to the Canada Study Grants for students with permanent disabilities. For future years, the cost of Canada Study Grants is projected to increase with inflation.

f) Loans Forgiven

For the loan year 2001-02, the cost of loans forgiven is \$11.3 million. The projection of loans forgiven follows the increase of the portfolio that performs normally (loans in study and in repayment).

## Appendix 4 – Sensitivity Tests

An actuarial examination of the CSLP involves the projection of its income and expenditures over a long period of time. The information presented in section A of the Main Report has been derived using “best-estimate” assumptions regarding future demographic and economic trends. Sensitivity tests are performed using assumptions for which changes within a reasonable range have the most significant impact on the long-term financial results.

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. Sensitivity tests have been performed, consisting of projections of CSLP financial results using alternative assumptions.

For each sensitivity test, key assumptions were changed individually, with the other assumptions being maintained at their best-estimate levels. Two tests were performed with respect to each of the assumptions, except for the loan limit where only one test was performed. The alternative assumptions selected are intended to represent the limits of potential long-term experience. However, it is possible that actual experience could lie outside these limits.

Each of these tests was then 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 annual cost of the Program. Conversely, in the “high-cost” scenarios, the assumptions would increase the Program cost.

Table 45 below summarizes the alternative assumptions that were used in the sensitivity tests. The table is followed by a brief discussion of each assumption and the sensitivity test results is presented in Table 47 at the end of this Appendix.

**Table 45 Long-term Sensitivity Test Assumptions**

Assumption	Low-cost	Best-estimate	High-cost
1. Loan Limit	--	\$165	\$265 in 2003-04, maintained thereafter
2. Wage Increase	0.6%	1.1%	1.6%
3. Inflation	2.0%	3.0%	4.0%
4. Labour Force Participation Rates – 2026-27 Canada less Québec, Northwest Territories and Nunavut (aged 18-34)	83.3%	82.3%	81.3%
5. Tuition Cost	CPI	CPI + 3.0%	CPI + 6.0%
6. Rate of Borrowing:			
Government cost of borrowing	4.0%	6.0%	8.0%
Student cost of borrowing	6.7%	8.7%	10.7%
7. Interest Relief Utilization/Provision	70% / 2.7%	100% / 3.9%	130% / 5.1%
8. Net Defaults	7.9%	10.9%	13.9%

## 1. Loan Limit

This scenario assumes that the current loan limit of \$165 a week is increased by \$100 to \$265 a week in the loan year 2003-04 and maintained at this level thereafter. This scenario shows the effect of a one-time significant increase to the limit. Compared to the best-estimate scenario, the proportion of students at the loan limit will be less in this scenario, and the amount of loans issued will increase gradually from 19% in 2003-04 to 39% at the end of the projection period.

**Chart 7 New Loans Issued (\$ million)**

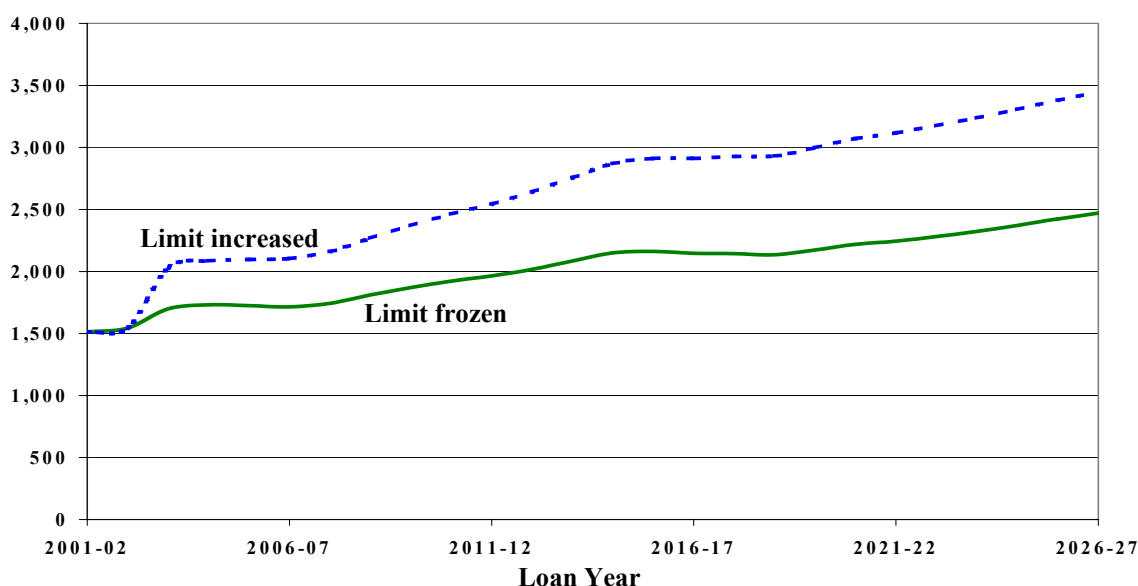


Chart 7 and Table 46 show the impact of increasing the loan limit on loans issued compared to keeping the limit frozen.

**Table 46 Impact of Loan Limit on Loans Issued**

Loan Year	Frozen at \$165		Increased to \$265 Starting in 2003-04		
	Limit	Loans Issued	Limit	Loans Issued	
		Total		Total	Increase over Frozen
	(\$)	(\$ million)	(\$)	(\$ million)	(%)
2001 - 2002	165	1,512	165	1,512	-
2002 - 2003	165	1,543	165	1,543	-
2003 - 2004	165	1,698	265	2,028	19
2004 - 2005	165	1,730	265	2,085	21
2005 - 2006	165	1,724	265	2,096	22
2010 - 2011	165	1,922	265	2,462	28
2015 - 2016	165	2,162	265	2,912	35
2020 - 2021	165	2,218	265	3,072	38
2026 - 2027	165	2,470	265	3,444	39

## 2. Wage Increase

Wage increases impact the CSLP by increasing the resources of a student determined in the needs analysis process. This, in turn, reduces the needs of a student, which can reduce a student loan's availability. However, there is also an increase in the administration expenses because these are linked to salary increases.

The real-wage differential is assumed to increase uniformly from 2003-04 to its ultimate level. An ultimate real-wage differential of 1.1% has been assumed in years 2015-16 and thereafter for the best-estimate projections. Combined with the best-estimate inflation assumption of 3.0%, it results in assumed nominal annual increases in wages of 4.1% in 2015-16 and thereafter.

For the low-cost scenario, the assumed real-wage differential decreases by 0.5%. This reduces its ultimate level to 0.6% in 2015-16.

For the high-cost scenario, the assumed real-wage differential increases by 0.5%. This increases its ultimate level to 1.6% in 2015-16. This sensitivity test has little impact on the net cost of the Program. For an increase of 0.5% in wages, the portfolio decreases but the administration cost increases.

## 3. Inflation

An ultimate annual rate of inflation of 3.0% has been assumed for the best-estimate projections. The rate of inflation is assumed to be 2.7% in 2002-03 and 2.0% in 2003-04. It is assumed to increase uniformly from 2.0% in 2004-05 to its ultimate level of 3.0% in 2015-16. The inflation rate affects the growth of a student's expenses, the growth of Program expenditures, and indirectly the resources. It also indirectly affects the Government's cost of borrowing as well as the repayment rate charged to the student.

For the low-cost scenario, the annual rate of inflation is assumed to decrease by 1.0%. This reduces the long-term rate of inflation to 2.0% in 2015-16. This level of inflation is comparable to that of the 1960s and 1990s.

For the high-cost scenario, the annual rate of inflation is assumed to increase by 1.0%. This increases the long-term rate of inflation to 4.0% in 2015-16. This level of inflation is comparable to long-term historical averages.

## 4. Labour Force Participation Rates

Labour force participation rates are used to determine the population enrolled full-time in post-secondary institutions. A higher participation rate means that fewer people will be available to attend post-secondary institutions. Therefore, it decreases enrolment. Similarly, a lower participation rates increases enrolment. During the next nine years, it is assumed that the overall labour force participation rate will remain relatively stable for youths, averaging 80.0%. For 2011-27, it is assumed that participation rates will increase overall to 82.3% to compensate for the labour shortage.

For the low-cost scenario, participation rates are assumed to reach their highest projected level of 83.3% by 2026-27. In this scenario, a higher increase in the participation rates is used compared to the base scenario because the labour shortage is more pronounced.

For the high-cost scenario, participation rates are assumed to reach their highest projected level of 81.3% by 2022-23. In this scenario, a lower increase in the participation rates is used compared to the base scenario because the labour shortage is not as severe.

## **5. Tuition Cost**

The long-term estimate of tuition growth is based on past increases of tuition relative to the CPI. Over the last 25 years, tuition increases have corresponded to increases in the CPI plus 3.0%. Since budgetary pressures are anticipated in the future, given the aging of the population, the CPI plus 3.0% was used as our ultimate growth rate.

For the low-cost scenario, ultimate tuition growth is expected to correspond only to increases in the CPI. This result is more in line with increases of other goods and services. This also means that the Government's funding for education will be more in line with inflation.

For the high-cost scenario, tuition growth is expected to correspond to increases in the CPI plus 6.0%. The aging of the population could cause significant budget pressures, which could reduce funding in key areas such as post-secondary education.

## **6. Real Rate of Borrowing**

Changes in the real rate of borrowing involve fluctuations in the interest rate not caused by inflation. This rate is related to the Government cost of borrowing, which impacts the cost of the interest subsidy for students in school and the cost of providing interest relief for students in need. However, for this test, the provision rates for interest relief are not modified. In addition to the effect on the Government cost of borrowing, this sensitivity test also affects the students' real rate of borrowing. This rate has been historically very volatile. As a result, greater emphasis should be placed on assessing the sensitivity of this assumption. The low-cost scenario reduces the rate by 2.0% and the high-cost scenario increases it by 2.0%. Each of these scenarios is plausible based on the volatility of past experience.

## **7. Interest Relief Utilization**

In 1998, the interest relief program was extended from a maximum of 30 months to a maximum of 54 months. As a result, experience based on the use of this extended benefit is limited. Greater emphasis should be placed on assessing the sensitivity of the interest relief utilization rate based on this limited experience.

The low-cost scenario reduces the utilization rate and the provision rate for interest relief by 30%, reducing the provision to 2.7% in the long term. An enhanced economic environment is assumed in the future and this will reduce the need for interest relief benefits.



The high-cost scenario increases the utilization rate and the provision rate for interest relief by 30%, increasing the provision to 5.1% in the long term. Better communication to students is assumed to increase the awareness of the existence of this relatively new extended interest relief benefit, which will increase the utilization rate of interest relief.

## 8. Net Defaults

The net default rate of student loans is a major component of the Government's cost of being involved in the Program. The net default rate on loans consolidated is 10.9%, which corresponds to a provision rate of 11.3% on new loans issued. This rate is closely linked with the employment environment for new graduates since that environment affects the ability of students to repay their loans.

In the low-cost scenario, the gross default rate is reduced by 2% to 18% and the recovery rate is increased to 56%. Subsequently, the net default rate is 7.9% with a corresponding provision rate of 8.3% of new loans issued. An assumed enhanced economic environment in the future will reduce the default rate. Potential better communication with students will also serve to reduce this rate.

In the high-cost scenario, the gross default rate is increased by 2% to 22% and the recovery rate is decreased to 37%. Subsequently, the net default rate is 13.9% with a corresponding provision rate of 14.3% of new loans issued. The economic environment is assumed to be worse in this scenario with a higher unemployment rate for students.

**Table 47 Sensitivity Test Results for Loan Year 2026-2027**

Assumptions	Scenario	Loans		Average Growth Rate	Portfolio		Net Cost Increase	
		Issued (\$ million)	Increase %		July (\$ million)	Increase %	(\$ million)	%
Base scenario	Best-estimate	2,470	-	2.0	19,006	-	1,273	-
Sensitivity tests								
1 - Increase limit to \$265 in 2003-04, and maintained thereafter	High-cost	3,444	39.4	3.3	26,341	38.6	1,528	20.0
2 - Wage differential -0.5%	Low-cost	2,527	2.3	2.1	19,377	2.0	1,241	-2.5
2 - Wage differential +0.5%	High-cost	2,415	-2.2	1.9	18,675	-1.7	1,311	3.0
3 - Inflation -1%	Low-cost	2,295	-7.1	1.7	17,729	-6.7	1,023	-19.6
3 - Inflation +1%	High-cost	2,640	6.9	2.3	20,122	5.9	1,566	23.0
4 - High labour force participation	Low-cost	2,401	-2.8	1.9	18,573	-2.3	1,255	-1.4
4 - Low labour force participation	High-cost	2,541	2.9	2.1	19,398	2.1	1,292	1.5
5 - Tuition: CPI	Low-cost	2,068	-16.3	1.3	16,532	-13.0	1,165	-8.5
5 - Tuition: CPI +6%	High-cost	2,922	18.3	2.7	21,738	14.4	1,394	9.5
6 - Interest rate -2%	Low-cost	2,470	-	2.0	18,599	-2.1	1,115	-12.4
6 - Interest rate +2%	High-cost	2,470	-	2.0	19,409	2.1	1,441	13.2
7 - Interest relief utilization 70%	Low-cost	2,470	-	2.0	18,742	-1.4	1,248	-2.0
7 - Interest relief utilization 130%	High-cost	2,470	-	2.0	19,106	0.5	1,302	2.3
8 - Net default rate 7.9%	Low-cost	2,470	-	2.0	18,919	-0.5	1,163	-8.6
8 - Net default rate 13.9%	High-cost	2,470	-	2.0	19,093	0.5	1,383	8.6

## **Appendix 5 – Acknowledgements**

We would like to thank the Socio-Economic Analysis Group, Canada Student Loans Program Division of the Department of Human Resources Development Canada that provided the relevant data used in this report. Without the Group's useful assistance, we would not have been able to produce this report.

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