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ACTUARIAL REPORT

ON THE

CANADA STUDENT LOANS PROGRAM

AS AT 31 JULY 2003



Office of the Superintendent of
Financial Institutions Canada

Office of the Chief Actuary

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8 June 2004

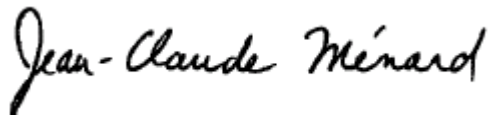
The Honourable Joseph Volpe, P.C., M.P.
Minister of Human Resources and Skills Development
Gatineau, Canada

The Honourable Ralph Goodale, P.C., M.P.
Minister of Finance
Ottawa, Canada

Dear Ministers:

Pursuant to a request from the Assistant Deputy Minister, Human Resources and Skills Development, I am pleased to submit the third actuarial report as at 31 July 2003 on the Canada Student Loans Program established under the *Canada Student Loans Act* and the *Canada Student Financial Assistance Act*.

Yours sincerely,

A handwritten signature in black ink that reads "Jean-Claude Ménard". The signature is written in a cursive style with a large initial 'J' and 'M'.

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 third 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 2003 and includes projections of future costs of the Program through the loan year 2027-28. 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 and Skills 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 amount of 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 Direct Loan Regime of the CSLP. 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 496,000 over the projection period. This represents an increase in the loan uptake rate of students in post-secondary institutions from 42% to 66%.
- The total growth rate of new loans issued averages 2.1% a year during the projection period. It is composed of an average annual increase of 1.6% in the number of students in the CSLP and a 0.5% 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 2002-03 to \$2.6 billion at the end of the projection period in 2027-28.
- The portfolio of student loans increases from \$10.1 billion to \$19.5 billion in 2027-28. In constant dollars, the portfolio is projected to decrease slightly during the same period from \$10.1 billion to \$10.0 billion. Moreover, by July 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 \$753 million to \$1.2 billion in 2027-28. This represents an average annual increase in cost to the Government of 1.8%. The cost of the Government's involvement in constant 2003 dollars is expected to decrease from \$753 million to \$599 million. This represents an average annual decrease of 1.0% in constant dollars.
- In the projections, the percentage of students eligible who are at the loan limit increases from 47% to 86% in 2027-28. 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 \$45 to the weekly loan limit (\$165 to \$210) in the loan year 2005-06, and maintained at that level thereafter, is included in Appendix 4 as a sensitivity test. In that test:
 - an additional \$239 million (14% increase) of new loans is issued in 2005-06 and an additional \$608 million (23% increase) in 2027-28; and
 - the portfolio reaches \$23.8 billion instead of the expected \$19.5 billion in the loan year 2027-28 and the total net cost for the Government's involvement in the CSLP increases by \$205 million (18% increase) in the loan year 2027-28.

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.

Section A of the report provides a discussion of assumptions that reflect 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 Direct loans include the interest subsidy on in-study loans, interest relief, provisions for 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, and interest accrued on impaired loans.

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 populations 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. 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 82.4% in 2027-28. 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 1.9% in 2003-04, and 2.0% in 2004-05. From 2005-06, the rate is then uniformly increased to its ultimate level of 3.0% in 2014-15.

Student expenses are used in needs assessment to determine the maximum loan amount 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. Based on stated intentions in provincial budgets and actual tuition increases as reported in news releases, the tuition increase is estimated at 10.8% in the loan year 2003-04, 3.4% in 2004-05, 2.5% in 2005-06 and 3.6% in 2006-07. 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 2003-04, the real growth in average earnings is estimated to be -1.1%. From 2004-05, the real growth in average earnings increases gradually from 0.6% in 2004-05, 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 2.8% in the loan year 2003-04 and then increases gradually, reaching 3.0% in 2013-14. The Government cost of borrowing consists of the real government cost of borrowing and the rate of inflation as summarized in Table 1.

Table 1 Borrowing Costs

Loan Year	Inflation (%)	Real Government Cost of Borrowing (%)	Government Cost of Borrowing (%)	Real Prime Rate (%)	Student Cost of Borrowing (%)
	(1)	(2)	(1) + (2)	(3)	(1) + (3) + 250 bps
2003-04	1.9	2.8	4.7	2.5	6.9
2004-05	2.0	2.7	4.7	2.5	7.0
2005-06	2.1	2.7	4.8	2.6	7.2
2006-07	2.2	2.8	4.9	2.8	7.4
2007-08	2.3	2.8	5.0	2.9	7.6
2008-09	2.4	2.8	5.2	3.0	7.9
2009-10	2.5	2.8	5.3	3.0	8.0
2010-11	2.6	2.9	5.4	3.1	8.1
2011-12	2.7	2.9	5.6	3.1	8.3
2012-13	2.8	2.9	5.7	3.1	8.4
2013-14	2.9	3.0	5.8	3.2	8.5
2014-15	3.0	3.0	5.9	3.2	8.6
2015-16+	3.0	3.0	6.0	3.2	8.7

The real prime rate is 2.5% for 2002-03 and is set to revert to its historical average of 3.2%. The student cost of borrowing, used to calculate the interest revenues and the cost of interest relief, is determined by adding the real prime rate to 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. For that reason, specific assumptions have been made concerning the provision rate charged to newly issued loans to cover future losses. In the first report, three provisions were established: provisions for bad debt, debt reduction in repayment (DRR) and interest relief. In the second report, a new provision was introduced: provision for bad debt – interest, set on newly impaired loans. This provision was established because interest is accrued on impaired loans and is accounted for as revenue.

In the previous reports, 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.

The interest relief provision, as established in the previous actuarial reports, will no longer be reported. The interest relief provision was reversed at the end of the fiscal year 2002-03. At year-end, a small provision will be calculated by the Department of Social Development Canada (SDC) based on interest relief accrued for a few months only. In the actuarial report, the interest relief cost will be accounted for as an expense.

The calculation of the allowance for bad debt – interest is modified in this report. The new methodology is based on the account’s recoverable status and its age since impairment or default. The interest accrued on impaired loans is accounted for as a revenue until the loan reaches the status “non-recoverable”, in which case it is written-off generally during the following year. To counterbalance this revenue, an allowance is created based on outstanding interest at the end of each year. The percentages of the allowance change according to the number of years since impairment and are based on a distribution of recovery. The allowance calculated at the end of a year less the net allowance at the end of the previous year (i.e. the allowance as at the end of last year less the amount written-off during that year) is charged as provision for bad debt – interest.

Table 2 Provision and Allowance Assumptions

Type of Provision	Assumptions	
		(%)
On new loans issued		
Bad debt – principal		11.3
Debt reduction in repayment		<u>0.7</u>
Total		12.0
	Number of Years Since Impairment	(%)
On outstanding interest on impaired loans		
Allowance for bad debt – interest	Less than 1	20.0
	Between 1 and 2	40.8
	Between 2 and 3	56.0
	Between 3 and 4	70.4
	Between 4 and 5	80.0
	Between 5 and 6	85.6
	Between 6 and 7	88.8
	Between 7 and 8	91.2
	Between 8 and 9	93.6
	Between 9 and 10	95.2
	Between 10 and 11	96.0
	Between 11 and 12	96.8
	Between 12 and 13	97.6
	Between 13 and 14	98.4
	Between 14 and 15	99.2

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

Table 3 Best-estimate Assumptions

1. Total fertility rate for Canada	1.6 per woman in 2002 graded to 1.64 per woman in 2007
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% (2003-04) 82.4% (2027-28)
5. Real wage differential	-1.1% (2003-04) 0.6% (2004-05) ⋮ 1.1% (2016+)
6. Inflation	1.9% (2003-04) 2.0% (2004-05) ⋮ 3.0% (2016+)
7. Tuition fee increases	10.8% (2003-04) 3.4% (2004-05) 2.5% (2005-06) 3.6% (2006-07) ⋮ CPI + 3.0% (2011+)
8. Government cost of borrowing	4.7% (2003-04) ⋮ 6.0% (2016+)
9. Student borrowing cost	6.9% (2003-04) ⋮ 8.7% (2016+)
10. Bad debt provision – principal	11.3% (2003+)
11. Allowance for bad debt – interest	20.0% (Interest on loans in default for less than a year) ⋮ 99.2% (Interest on loans in default for 14 to 15 years)
12. DRR provision	0.7% (2003+)

B. Projection of Total Loans Issued

The purpose of this section is to project the amount of total loans issued by the CSLP. First, the full-time enrolment in post-secondary institutions is projected. Next, the future number of students participating in the CSLP is determined using a projection of the distribution of assessed needs for CSLP students. Finally, the previous elements are combined to project the amount of total loans issued.

1. Projection of Full-time Post-secondary Enrolment

The projection of full-time students in post-secondary institutions must first be determined, since the demand for the CSLP is linked to the number of students enrolled in post-secondary institutions. 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 of Canada, less Québec and the territories of the Northwest Territories and Nunavut, in the age range 18-34 is used to project the number of students enrolled in post-secondary institutions. The evolution of this population is practically known since it originates from individuals born after 1968.

In the first 13 years of the projection, children of the “baby-boom” generation, called the “echo” generation, 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. The population aged 18-34 is expected to increase from 5,610,000 to 6,045,000 by 2015-16. In the last 12 years of the projection, the population aged 18-34 decreases to 5,971,000. Overall, as Table 4 shows, an increase of 361,000 is expected in the population aged 18-34 over the 25-year projection period.

Table 4 Population and Post-secondary Enrolment

Loan Year	Population of Canada Less Québec, NWT and Nunavut (18-34) (Thousands)	Not Participating In Labour Force (18-34) (Thousands)	Students Enrolled Full-time (Thousands)	Increase (Thousands)	Growth Rate (%)
2002-03	5,610	1,120	788	-	-
2003-04	5,641	1,131	840	52.7	6.7
2004-05	5,670	1,137	842	1.6	0.2
2005-06	5,691	1,134	827	-14.6	-1.7
2006-07	5,709	1,129	811	-16.6	-2.0
2007-08	5,749	1,137	809	-1.8	-0.2
2008-09	5,802	1,158	820	11.3	1.4
2009-10	5,857	1,174	829	8.6	1.1
2010-11	5,902	1,182	835	5.8	0.7
2011-12	5,940	1,179	835	0.1	0.0
2012-13	5,975	1,180	838	2.9	0.4
2013-14	6,011	1,185	844	5.8	0.7
2014-15	6,041	1,188	848	4.2	0.5
2015-16	6,045	1,171	834	-13.7	-1.6
2016-17	6,041	1,144	814	-20.8	-2.5
2017-18	6,035	1,124	797	-16.8	-2.1
2018-19	6,020	1,102	779	-17.8	-2.2
2019-20	6,016	1,095	773	-5.5	-0.7
2020-21	6,011	1,091	770	-3.8	-0.5
2021-22	6,006	1,082	762	-7.8	-1.0
2022-23	6,005	1,076	758	-3.8	-0.5
2023-24	6,008	1,072	756	-1.9	-0.3
2024-25	6,003	1,067	756	-0.5	-0.1
2025-26	5,989	1,063	757	1.0	0.1
2026-27	5,980	1,058	756	-0.8	-0.1
2027-28	5,971	1,052	755	-0.6	-0.1

b) Post-secondary Enrolment

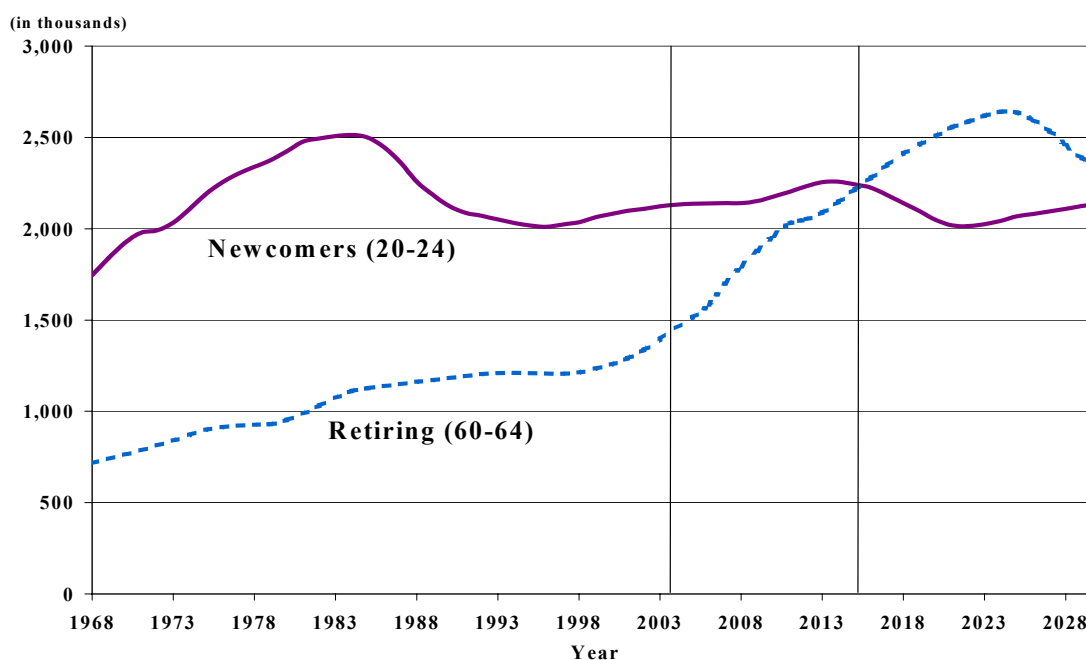
The number of students enrolled full-time in post-secondary institutions is closely linked to the evolution of the population aged 18-34 that is not participating in the labour force. Those individuals who are not participating in the labour force may be more inclined to pursue a post-secondary education. Thus, post-secondary enrolment is considered to be a subset of the

population not participating in the labour force. During times when job availability is low, the school to work transition period is longer, as more individuals decide to pursue post-secondary education. However, when job availability is high, the school to work transition period decreases because more people choose to work rather than attend a post-secondary institution.

The aging and subsequent retirement of the “baby-boomers”, along with a shortage of replacement workers is expected to create a severe pressure on the labour market. The generations following the “baby-boom” are smaller and thus have fewer labour force entrants to replace the retiring “baby-boomers”. This will cause a labour shortage, which will increase in severity as more and more of the “baby-boom” generation retires. In the past, there have always been many more newcomers (ages 20-24) joining the labour force than persons retiring (ages 60-64). This will no longer be true when the “baby-boomers” begin retiring.

Chart 1 shows the evolution of the number of persons retiring and newcomers entering the labour force from 1968 onwards.

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



Historically, the number of persons retiring or in the age range 60-64 has been very low compared to the newcomers entering the labour force (representing less than 50%). This situation is expected to change radically over the next 13 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 since 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 due to favourable labour market conditions and the increased availability of work.

In Table 4, the population not participating in the labour force is projected to increase overall from 1,120,000 to 1,188,000 during the next twelve years due to the natural demographic

evolution. Thereafter, due to the labour shortage, the population not participating in the labour force will decrease by 136,000 over the next thirteen years to reach 1,052,000 at the end of the projection period.

The evolution of the inactive population, those aged 18-34 not participating in the labour force, is a good indicator of the evolution of the post-secondary population. Enrolment in post-secondary institutions, as well as CSLP participation, varies between age groups. The age distribution of the CSLP shows that almost 75% of students in the CSLP are in the age range 18-24. This implies that the proportion of the inactive population enrolled in a post-secondary institution will also vary by age group. The CSLP age distribution was used to separate historical enrolment data into age ranges. A post-secondary participation factor was calculated as the ratio of the historical post-secondary enrolment to the inactive population for each age range. This post-secondary participation factor was then applied to the future inactive population in order to determine the future enrolment in post-secondary institutions.

c) Double Cohort

Ontario's provincial government 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 of 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 applicants in 2003-04.

Table 4 shows an increase of 52,700 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 10,400 students coming from the natural demographic growth in the number of students enrolled in the participating provinces and territory. This increase is consistent with the projection made in the Actuarial Report on the Canada Student Loans Program as at 31 July 2002.

The increase from the double cohort begins in 2002-03 and is spread over four years due to 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.

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 increase in post-secondary enrolment due to the double cohort will be phased out over the long term when both classes graduate completely.

As shown in Table 4, the number of students enrolled full-time in post-secondary institutions follows a pattern similar to the population not participating in the labour force and shows a decrease by the end of the projection period. The early increases in enrolment are caused by the double cohort. The enrolment decreases starting in 2015-16 due to the impact of the anticipated labour shortage. Overall, the number of full-time students enrolled in post-secondary education decreases from 788,000 in 2002-03 to 755,000 in 2027-28 with periods of growth and decline during the projection period.

2. Number of Students in the Canada Student Loans Program

To project the number of students in the CSLP, it is necessary to determine the future distribution of student need, as well as the average student need. The Department of Human Resources and Skills Development (HRSD) provided the CSLP students' needs assessment data for the last three loan years, which was used to project the future distributions of student needs.

Not everyone enrolled in a post-secondary institution is eligible to participate in the CSLP. The needs assessment process determines whether students are eligible for a loan, and if so, the amount they are eligible to receive. A student's need is defined as the excess of expenses over resources, if positive. The resources assessed include salary, assets, and parental contributions. The expenses calculated include tuition fees, books, shelter, food, and transportation.

Table 5 Average Student Needs

Loan Year	Resources (\$) (1)	Tuition (\$) (2)	Other Expenses (\$) (3)	Total Expenses (\$) (2) + (3)	Average Student Need (\$) (2) + (3) - (1)	Average Student Need Increase (\$)
2002-03	6,900	4,600	11,400	16,000	9,100	-
2003-04	6,900	5,100	11,800	16,900	10,000	900
2004-05	6,900	5,300	12,000	17,300	10,400	400
2005-06	7,100	5,400	12,300	17,700	10,600	200
2006-07	7,300	5,600	12,500	18,100	10,800	200
2007-08	7,500	5,800	12,800	18,600	11,100	300
2008-09	7,700	6,100	13,100	19,200	11,400	300
2009-10	8,000	6,400	13,400	19,800	11,800	400
2010-11	8,300	6,700	13,700	20,400	12,200	400
2011-12	8,600	7,100	14,100	21,200	12,600	400
2012-13	8,900	7,500	14,500	21,900	13,100	500
2013-14	9,200	7,900	14,900	22,800	13,600	500
2014-15	9,600	8,400	15,300	23,700	14,100	500
2015-16	10,000	8,900	15,700	24,600	14,700	600
2016-17	10,400	9,400	16,200	25,600	15,300	600
2017-18	10,800	10,000	16,700	26,700	15,900	600
2018-19	11,200	10,600	17,200	27,800	16,500	600
2019-20	11,700	11,200	17,700	28,900	17,200	700
2020-21	12,200	11,900	18,200	30,100	18,000	800
2021-22	12,700	12,600	18,800	31,400	18,700	700
2022-23	13,200	13,400	19,300	32,700	19,500	800
2023-24	13,700	14,200	19,900	34,100	20,400	900
2024-25	14,300	15,000	20,500	35,600	21,200	800
2025-26	14,900	15,900	21,100	37,100	22,200	1,000
2026-27	15,500	16,900	21,800	38,700	23,200	1,000
2027-28	16,100	17,900	22,400	40,300	24,200	1,000

Table 5 summarizes the three main elements of student needs, as well as the average student need. Student need is increasing on average because expenses are rising faster than resources. The two reasons for this increase are described below.

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. Table 5 shows average tuition fees rising from \$4,600 in 2002-03 to \$17,900 in 2027-28. As a percentage of resources, tuition fees

rise from a level of 67% to reach 111% in 2027-28. Tuition fees are the primary source of rising student needs.

Second, average total expenses per eligible student are initially much greater than resources. Average expenses are \$16,000 per year compared to average resources of only \$6,900 in 2002-03. 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.

Beginning in loan year 2003-04, there is a change to the CSLP in-study income exemption. Prior to 2003-04, students could earn up to \$600 over the course of their study period without affecting the amount of their loan. In 2003-04, the in-study income exemption will be raised to \$50 per week or \$1,700 over a typical 34-week period of study. That is, CSLP students will be able to earn income up to \$50 per week of study without it affecting their assessed resources and therefore their assessed need as determined by the needs assessment process. This program change has been included in the analysis of student resources for the purposes of this report. As seen in Table 5, the level of resources does not change for loan year 2002-03 and the first two years of the projection. This is due to the change in the resource exemption. Resources are expected to increase due to the increase in real wages; however, assessed resources remain relatively stable initially when the income exemption is increased.

Analysis of the needs assessment data provided by HRSD has shown that the CSLP students' needs closely follow a normal distribution. A better fit is achieved by slightly modifying the normal curve. The modifications made to the normal curve are described in Appendix 3 of this report. Using the properties of the normal distribution and the 25 years of projected needs increases, as shown in Table 5, needs curves for the next 25 years were projected.

Chart 2 CSLP Students' Projected Needs Curves

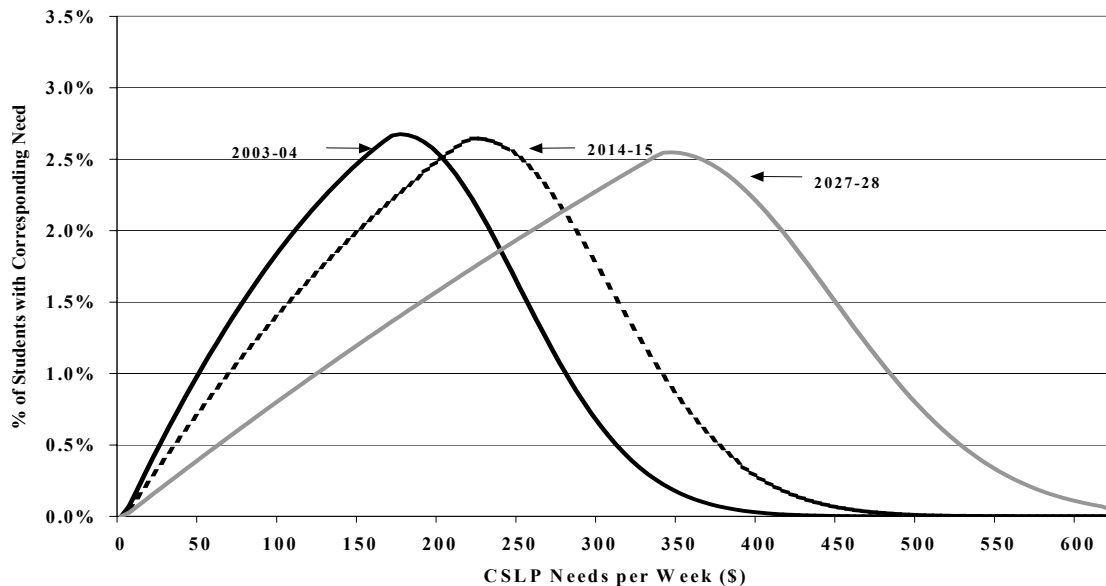


Chart 2 is a projection of the CSLP students' needs curves for three years during the twenty-five year projection period. The area under each successive needs curve grows from year to year and thus represents the increased participation in the CSLP. That is, as the area under each subsequent curve grows, the increase in the curve represents the addition of more students to the CSLP. For example, if the area under the needs curve for 2004-05 is 2% larger than the area

under the needs curve for 2003-04, then the loan uptake of post-secondary students has grown by 2%. The CSLP loan uptake rate is defined as the proportion of students who are enrolled full-time in a post-secondary institution and also take a loan in the CSLP.

During the projection period, the modified normal curves become flatter as students move further to the right of the curve due to increased needs. Needs will increase if expenses are increasing faster than resources, as is assumed. The needs assessment data show that students with high needs have a very low level of resources. Thus students to the right of the peak of the needs curve have few resources and will see a large increase in their needs. Those to the left of a peak will experience an increase in need less than the average since any increase in need should be partially offset by an increase in resources. It is anticipated that as the needs of students increase, newly eligible participants will enter to the left of the peak. New participants will enter the CSLP because their previously negative need became positive or their need increased enough that it became worthwhile to take the loan. It is expected that as needs increase, participants will move towards the right of the peak.

Chart 2 shows that the proportion of participants with small loans (that is, low CSLP needs), such as less than \$60 per week, decreases over the projection period. This is because the overall participation in the CSLP continues to increase rapidly, while the number of students with small loans actually decreases slightly over time due to the large increases in need. Thus, the proportion of those with small loans will decrease over time.

Table 6 shows the evolution of loan recipients over the 25-year projection period. An increase in the loan uptake rate is expected as tuition fees and other expenses grow at a faster rate than resources. This is the main cause of the increase in loans issued over the 25-year period.

The product of the number of students enrolled full-time and the CSLP loan uptake rate resulting from each successive needs curve gives the number of students in the CSLP. Table 6 shows that the loan uptake rate is expected to increase from 42.1% to 65.6%, adding 164,000 students to the Program. Thus, the number of students in the Program increases from 332,000 in 2002-03 to 496,000 in 2027-28. In 2003-04, there is a large increase in participation, from 332,000 to 366,000. This is because a larger number of students are enrolled full-time due to the double cohort in Ontario.

Table 6 Loan Recipients

Loan Year	Students Enrolled in Post-secondary Institutions (Thousands)	Loan Uptake Rate (%)	Students in CSLP (Thousands)	Annual Increase in CSLP Students (Thousands)	Annual Increase in CSLP Students (%)
	(1)	(2)	(1) x (2)		
2002-03	788	42.1	332	-	0.0
2003-04	840	43.6	366	35	10.5
2004-05	842	44.3	373	6	1.8
2005-06	827	44.5	368	-5	-1.3
2006-07	811	44.7	363	-5	-1.4
2007-08	809	45.4	367	5	1.3
2008-09	820	46.0	378	11	2.9
2009-10	829	46.8	388	10	2.7
2010-11	835	47.5	397	9	2.3
2011-12	835	48.4	404	7	1.8
2012-13	838	49.2	412	8	2.1
2013-14	844	50.1	423	10	2.5
2014-15	848	50.9	431	9	2.1
2015-16	834	51.8	433	1	0.3
2016-17	814	52.7	428	-4	-1.0
2017-18	797	53.6	427	-1	-0.3
2018-19	779	54.5	424	-3	-0.6
2019-20	773	55.5	429	5	1.1
2020-21	770	56.4	434	5	1.1
2021-22	762	57.5	438	4	0.8
2022-23	758	58.5	443	5	1.2
2023-24	756	59.8	452	9	2.1
2024-25	756	61.3	463	11	2.4
2025-26	757	62.7	474	11	2.4
2026-27	756	64.2	485	11	2.3
2027-28	755	65.6	496	11	2.2

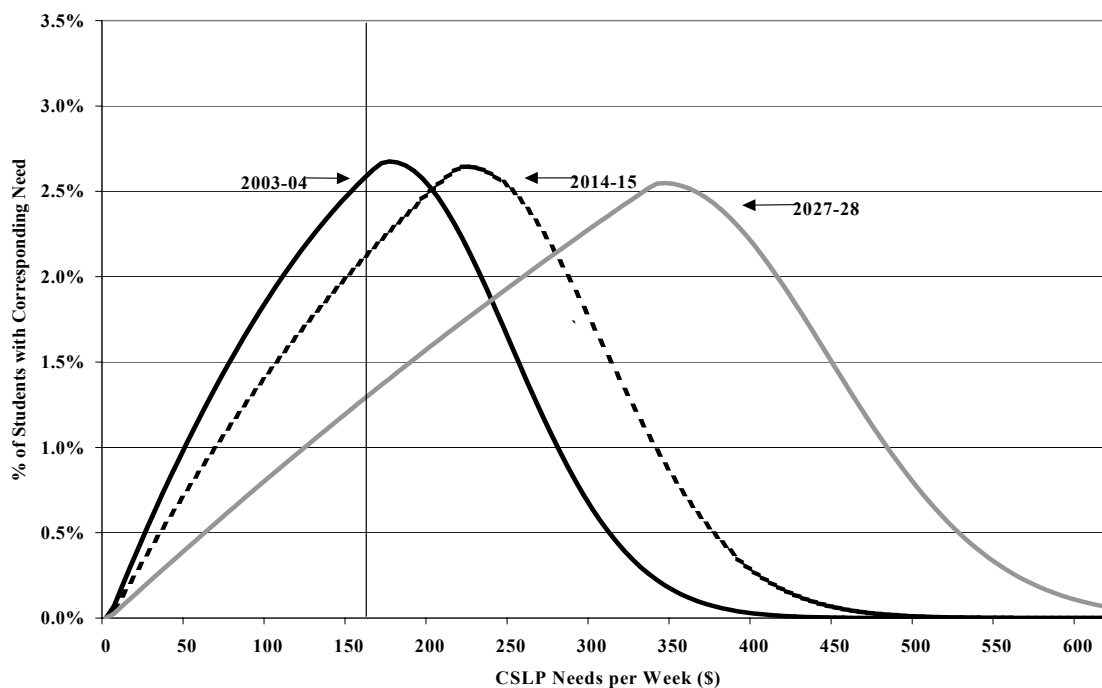
3. New Loans Issued

This section focuses on the determination of the amount of new loans issued in a certain loan year. The following two factors are mainly responsible for the evolution of new loans issued: student need and the percentage of students reaching the loan limit.

First, an increased student need will put growing pressure on new loans issued as more students become eligible for and take a loan, while those who were previously eligible become eligible for a larger loan. Table 5 shows that the average student need increases from \$9,100 in 2002-03 to \$24,200 in 2027-28. The increasing student need causes more students to become eligible to receive a loan. However, loans to newly eligible individuals 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 as an estimated 164,000 more students will participate in the CSLP.

Second, a greater percentage of students will reach the loan limit, given that the loan limit is set at a constant \$165 per week for the 25-year period. In Table 7, the percentage of students at the limit increases from 46.9% to 85.7%, implying that these students will not have an increase in loan size despite increased cost pressures. The \$165 limit slows the growth of new loans issued, as students who are already at the loan limit cannot increase the size of their loan any further.

Chart 3 CSLP Students' Needs Curves and Loan Limit



The projected needs curves in Chart 3 are the same as shown in Chart 2, except a vertical line has been added at an assessed need of \$165 per week to represent the CSLP loan limit. Anyone whose need falls to the right of this line will only receive the loan limit. Those whose need does not exceed \$165 per week are eligible to receive a loan amount equal to their entire need. Chart 3 supports the results in Table 7 that the proportion of students with needs exceeding the loan limit is increasing during the projection period. The loan limit restricts the growth in new loans issued. Even though needs are increasing rapidly, the loan limit is not changing. Thus, new loans issued will not increase as quickly as CSLP students' needs.

Table 7 Increase in New Loans Issued

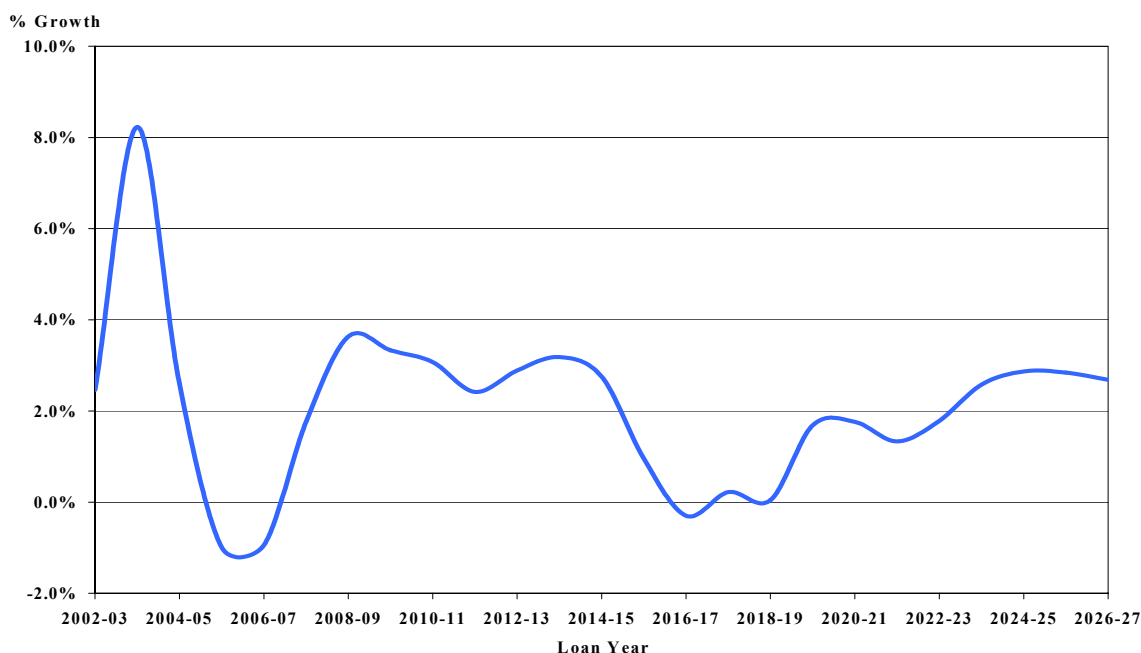
Loan Year	Average Student Need (%) (1)	Increase (%)	% of Students at Limit (2)	New Loans Issued (\$ million) (3)	Increase (%)	Students in CSLP (Thousands) (4)	Increase (%)	Average Loan Size (\$) (3) / (4)	Increase (%)
2002-03	9,098	-	46.9	1,549	-	332	-	4,670	-
2003-04	10,025	10.2	51.9	1,677	8.2	366	10.5	4,575	-2.0
2004-05	10,367	3.4	53.6	1,720	2.6	373	1.8	4,613	0.8
2005-06	10,557	1.8	54.4	1,703	-1.0	368	-1.3	4,630	0.4
2006-07	10,811	2.4	55.5	1,687	-0.9	363	-1.4	4,654	0.5
2007-08	11,095	2.6	56.6	1,717	1.8	367	1.3	4,677	0.5
2008-09	11,414	2.9	58.2	1,779	3.6	378	2.9	4,710	0.7
2009-10	11,768	3.1	59.6	1,839	3.3	388	2.7	4,738	0.6
2010-11	12,159	3.3	61.3	1,895	3.1	397	2.3	4,774	0.8
2011-12	12,594	3.6	62.8	1,941	2.4	404	1.8	4,805	0.7
2012-13	13,060	3.7	64.7	1,997	2.9	412	2.1	4,843	0.8
2013-14	13,559	3.8	66.3	2,060	3.2	423	2.5	4,875	0.7
2014-15	14,093	3.9	67.9	2,117	2.8	431	2.1	4,908	0.7
2015-16	14,661	4.0	69.5	2,137	1.0	433	0.3	4,941	0.7
2016-17	15,258	4.1	71.1	2,131	-0.3	428	-1.0	4,974	0.7
2017-18	15,885	4.1	72.5	2,136	0.2	427	-0.3	5,002	0.6
2018-19	16,543	4.1	74.1	2,137	0.0	424	-0.6	5,034	0.6
2019-20	17,233	4.2	75.5	2,173	1.7	429	1.1	5,061	0.5
2020-21	17,959	4.2	77.0	2,211	1.8	434	1.1	5,092	0.6
2021-22	18,721	4.2	78.3	2,240	1.3	438	0.8	5,117	0.5
2022-23	19,522	4.3	79.8	2,280	1.8	443	1.2	5,146	0.6
2023-24	20,364	4.3	81.1	2,339	2.6	452	2.1	5,170	0.5
2024-25	21,249	4.3	82.3	2,406	2.9	463	2.4	5,195	0.5
2025-26	22,181	4.4	83.5	2,474	2.8	474	2.4	5,217	0.4
2026-27	23,161	4.4	84.6	2,541	2.7	485	2.3	5,239	0.4
2027-28	24,192	4.5	85.7	2,607	2.6	496	2.2	5,259	0.4

Table 7 shows the increase in new loans issued over the 25-year projection period. Overall, the total new loans issued increase from \$1,549 million in 2002-03 to \$2,607 million in 2027-28, resulting in an average increase of 2.1% per year. The ratio of new loans issued and the number of students in the CSLP results in the average loan size per student. The percentage increase in new loans issued is shown in Table 7 along with the percentage increase in the number of students in the CSLP. The difference between these two elements gives the approximate increase in average loan size. For example, in loan year 2010-11, new loans issued increases by 3.1%, while the number of students in the CSLP increases by 2.3%. In the same year, the average loan size increases by 0.8%, which is the approximate difference between the two elements.

Chart 4 shows the year-to-year growth of total new loans issued during the projection period. Over the 25-year projection period, the growth in the amount of new loans is, on average, 2.1% a year. This is mainly due to the large increase in the average student need (\$9,100 to \$24,200 as shown in Table 5), which in turn increases the number of students in the CSLP. The yearly average growth of new loans issued can be broken down into two parts: 1.6% is due to the average annual growth rate of students in the CSLP, while 0.5% is due to the average annual growth rate of the average loan size. The growth rate of the average loan size is low due to the

constant loan limit. In Chart 4, the elimination of Grade 13 in Ontario raises the growth rate of new loans issued to 8.2% in 2003-04, but has no impact on the long-term growth rate.

Chart 4 Growth Rate of New Loans Issued



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

One sensitivity test demonstrating the effect of changing the limit is included in Appendix 4. The sensitivity test shows the effect of a one-time increase of \$45 to the loan limit in loan year 2005-06, thereby increasing it to \$210 and maintaining the limit at that level thereafter. The Federal Government announced in the 2004 Budget that the loan limit of the CSLP would be increased to \$210 per week beginning in loan year 2005-06. This scenario demonstrates that the growth rate of new 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 in repayment.

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 2003, the total impaired loans coming from the Guaranteed and Risk-Shared Regimes that are owned by the Government, amount to approximately \$1.5 billion (principal and interest) and are subject to possible future recoveries. The Government sets up provisions in the Public

Accounts for those loan guarantees and loans in default. This procedure is not shown in this report.

The projections of the portfolio for the Guaranteed and the Risk-Shared Regimes are shown in Table 8. 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 four years before being completely phased out.

Table 8 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
2003	67	484	551	824	4,384	5,208
2004	21	336	357	597	3,893	4,490
2005	-	226	226	428	3,356	3,784
2006	-	140	140	277	2,801	3,078
2007	-	89	89	133	2,251	2,384
2008	-	54	54	-	1,740	1,740
2009	-	31	31	-	1,187	1,187
2010	-	16	16	-	764	764
2011	-	8	8	-	468	468
2012	-	3	3	-	290	290
2013	-	1	1	-	187	187
2014	-	-	-	-	115	115
2015	-	-	-	-	63	63
2016	-	-	-	-	27	27
2017	-	-	-	-	6	6
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 allowance for DRR to cover the future cost of students benefiting from this program disposition.

The projection of the portfolio of the Direct Loan Regime is shown in Table 9. 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 9 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	DRR
2003	2,797	1,318	213	4,329	518	4	32
2004	3,191	2,136	391	5,717	698	14	44
2005	3,468	3,053	501	7,023	870	30	56
2006	3,612	3,941	634	8,187	1,025	52	68
2007	3,673	4,757	781	9,211	1,166	80	78
2008	3,736	5,487	930	10,153	1,295	115	86
2009	3,832	6,156	1,072	11,061	1,415	153	91
2010	3,941	6,781	1,201	11,923	1,524	194	95
2011	4,053	7,408	1,316	12,777	1,623	235	97
2012	4,160	7,921	1,418	13,499	1,713	276	99
2013	4,275	8,379	1,508	14,162	1,797	317	100
2014	4,401	8,800	1,587	14,788	1,874	355	102
2015	4,527	9,191	1,656	15,374	1,946	391	104
2016	4,618	9,541	1,719	15,877	2,011	422	106
2017	4,663	9,838	1,776	16,278	2,067	449	107
2018	4,694	10,069	1,831	16,595	2,115	472	108
2019	4,712	10,259	1,882	16,853	2,156	494	109
2020	4,758	10,412	1,927	17,097	2,194	513	109
2021	4,819	10,555	1,966	17,339	2,231	530	110
2022	4,882	10,689	2,001	17,572	2,265	545	110
2023	4,956	10,818	2,033	17,806	2,299	559	110
2024	5,054	10,950	2,063	18,066	2,336	571	110
2025	5,174	11,097	2,091	18,363	2,376	582	111
2026	5,308	11,272	2,121	18,701	2,420	592	112
2027	5,447	11,478	2,152	19,078	2,467	602	114
2028	5,590	11,714	2,187	19,492	2,519	611	115

* 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 2003, the outstanding Direct Loan portfolio is \$4,329 million and is derived from new loans issued during the loan years 2000-01 (\$1,570 million), 2001-02 (\$1,512 million) and 2002-03 (\$1,549 million), plus the interest accrued during the grace period for these three years, minus repayment in the loan years 2001-02 and 2002-03. The impaired loans are part of the assets and are included in the Direct Loan portfolio projection. The portfolio increases rapidly to reach \$10.0 billion within the next five years. By the end of the loan year 2027-28, the portfolio reaches \$19.5 billion. All calculations assume 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 10 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 10 Impaired Loans and Allowance for Bad Debt – Principal (\$ million)

Loan Year	Impaired Loans Portfolio					Allowance for Bad Debt – Principal			
	Balance	Impaired	Collected	Balance	Balance	Allowance	New	Allowance	
	1 August	Loans	Loans	Write-offs		1 August	Provision*		Write-offs
(1)	(2)	(3)	(4)	(1+2) – (3+4)	(1)	(2)	(3)	(1+2) – (3)	
2002-03	2	220	4	5	213	348	175	5	518
2003-04	213	212	25	10	391	518	189	10	698
2004-05	391	173	39	23	501	698	194	23	870
2005-06	501	219	49	37	634	870	192	37	1,025
2006-07	634	257	60	50	781	1,025	191	50	1,166
2007-08	781	288	74	65	930	1,166	194	65	1,295
2008-09	930	310	87	81	1,072	1,295	201	81	1,415
2009-10	1,072	328	100	99	1,201	1,415	208	99	1,524
2010-11	1,201	342	112	115	1,316	1,524	214	115	1,623
2011-12	1,316	354	123	129	1,418	1,623	219	129	1,713
2012-13	1,418	365	133	142	1,508	1,713	226	142	1,797
2013-14	1,508	376	142	155	1,587	1,797	233	155	1,874
2014-15	1,587	386	150	167	1,656	1,874	239	167	1,946
2015-16	1,656	398	158	176	1,719	1,946	242	176	2,011
2016-17	1,719	409	166	186	1,776	2,011	241	186	2,067
2017-18	1,776	419	171	193	1,831	2,067	241	193	2,115
2018-19	1,831	427	176	200	1,882	2,115	241	200	2,156
2019-20	1,882	433	180	207	1,927	2,156	246	207	2,194
2020-21	1,927	437	185	213	1,966	2,194	250	213	2,231
2021-22	1,966	442	188	219	2,001	2,231	253	219	2,265
2022-23	2,001	447	192	224	2,033	2,265	258	224	2,299
2023-24	2,033	452	195	228	2,063	2,299	264	228	2,336
2024-25	2,063	458	198	232	2,091	2,336	272	232	2,376
2025-26	2,091	465	200	236	2,121	2,376	280	236	2,420
2026-27	2,121	474	203	239	2,152	2,420	287	239	2,467
2027-28	2,152	484	207	243	2,187	2,467	295	243	2,519

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

In the loan year 2002-03 and for the first few months of 2003-04 as shown in Table 10, a significant amount of impaired loans occurred. It is important that this situation be examined in the next few years to determine the causes. The provision rate for the bad debt – principal remains the same as in the previous reports; the experience is not sufficient at this point to confirm a new trend, but this situation will be monitored closely in the next few years. In conducting an actuarial review of the CSLP, quality of data is of utmost importance; that is, the data should be complete, accurate and appropriate for the purpose of the valuation. Although it is recognized that it is often difficult to obtain data that completely exhibits all such characteristics due to a lack of availability, the importance of obtaining the highest quality data cannot be stressed enough. In this respect, the data provided by the administration should be reviewed and analysed further in particular regarding newly impaired Direct loans and subsequent recoveries.

The allowance for bad debt – principal is reduced when there is a write-off. The assumption used for write-offs is a 15-year distribution, presented in Appendix 3. This distribution, which was smoothed, corresponds to the experience of write-offs for the Guaranteed Loan Regime over the last 15 years.

The allowance for bad debt – principal grows rapidly and reaches \$2.5 billion in 2027-28. As a percentage of the total Direct Loan portfolio, the allowance evolves from 12.0% in 2002-03 to stabilize at approximately 13% over the long-term.

In accordance with the collection practice, interest accrues on impaired loans until the loans reach a “non-recoverable” status. A new provision is set to cover the risk that such accrued interest will never be recovered. The assumption for write-offs is the same as for principal, and the distribution for recovery is a weighted average of the distributions of the recovery of principal for early and late defaults.

The allowance for bad debt – interest on recoverable accounts is determined as being the sum of the product of outstanding interest and a provision rate per year since impairment. The provision rate is set at 20% for defaulted principal and interest in the year of impairment. This provision rate increases each year thereafter using the recovery distribution as shown in the Appendix 3. The allowance on non-recoverable accounts is 100% and the interest on these accounts are in average written-off in the following year. The variation of allowance of a given year and the remaining allowance of the previous year is charged as part of the yearly expense. The allowance as at 31 July 2003 is the sum of the allowance calculated on recoverable accounts of \$3 million and the allowance calculated on outstanding non-recoverable accounts of \$1 million for a total of \$4 million in loan year 2002-03 (\$11 million for 2003-04). In the Public Accounts, SDC will use this methodology and calculate the allowance and annual expense as at 31 March 2004.

Table 11 Allowance for Bad Debt – Interest (\$ million)

Loan Year	Allowance 1 August	Write-Off	Allowance 31 July	Expense of the Year
	(1)	(2)	(3)	(3) – (1 – 2)
2002-03	-	-	4	4
2003-04	4	1	14	11
2004-05	14	2	30	17
2005-06	30	3	52	25
2006-07	52	6	80	34
2007-08	80	10	115	44
2008-09	115	16	153	54
2009-10	153	23	194	64
2010-11	194	32	235	73
2011-12	235	42	276	83
2012-13	276	50	317	91
2013-14	317	59	355	98
2014-15	355	69	391	104
2015-16	391	78	422	109
2016-17	422	86	449	113
2017-18	449	94	472	117
2018-19	472	99	494	120
2019-20	494	104	513	123
2020-21	513	109	530	126
2021-22	530	113	545	128
2022-23	545	117	559	130
2023-24	559	120	571	132
2024-25	571	123	582	134
2025-26	582	126	592	136
2026-27	592	129	602	138
2027-28	602	131	611	140

Table 12 provides the details of the calculations for the projections of the allowance for debt reduction in repayment (DRR) under the Direct Loan Regime.

Table 12 Allowance for Debt Reduction in Repayment (\$ million)

Loan Year	Allowance 1 August	Provision*	DRR Payment	Allowance 31 July
	(1)	(2)	(3)	(1) + (2) - (3)
2002-03	22	11	-	32
2003-04	32	12	-	44
2004-05	44	12	-	56
2005-06	56	12	-	68
2006-07	68	12	2	78
2007-08	78	12	4	86
2008-09	86	12	7	91
2009-10	91	13	9	95
2010-11	95	13	11	97
2011-12	97	14	12	99
2012-13	99	14	12	100
2013-14	100	14	13	102
2014-15	102	15	13	104
2015-16	104	15	13	106
2016-17	106	15	14	107
2017-18	107	15	14	108
2018-19	108	15	14	109
2019-20	109	15	15	109
2020-21	109	15	15	110
2021-22	110	16	16	110
2022-23	110	16	16	110
2023-24	110	16	16	110
2024-25	110	17	16	111
2025-26	111	17	16	112
2026-27	112	18	16	114
2027-28	114	18	17	115

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

The provision rate for DRR (0.7%) remains the same as in the previous report. Compared to the total portfolio, the allowance for DRR decreases during the projection period from 0.8% to 0.6%.

In accordance with the 2003 Federal Budget, DRR measures were enhanced as at 1 August 2003. Before the modification, the DRR was capped at the lesser of 50% of the principal or \$10,000. The improvements include the removal of the 50% cap and the addition of two reductions of up to \$5,000 each for borrowers still experiencing undue financial hardship in repaying their loan.

The DRR provision rate is not adjusted for this modification. As mentioned in the previous report, the provision rate was high last year compared with the projected expenses. With the DRR improvements announced in the 2003 Federal Budget, the projected expenses are now more in line with the level of the provision.

For the purpose of comparison, Table 13 shows the Direct Loan portfolio in 2003 constant dollars. Starting in the loan year 2016-17, the portfolio decreases because the assumed inflation rate assumed is higher than the annual growth of the portfolio in Table 10.

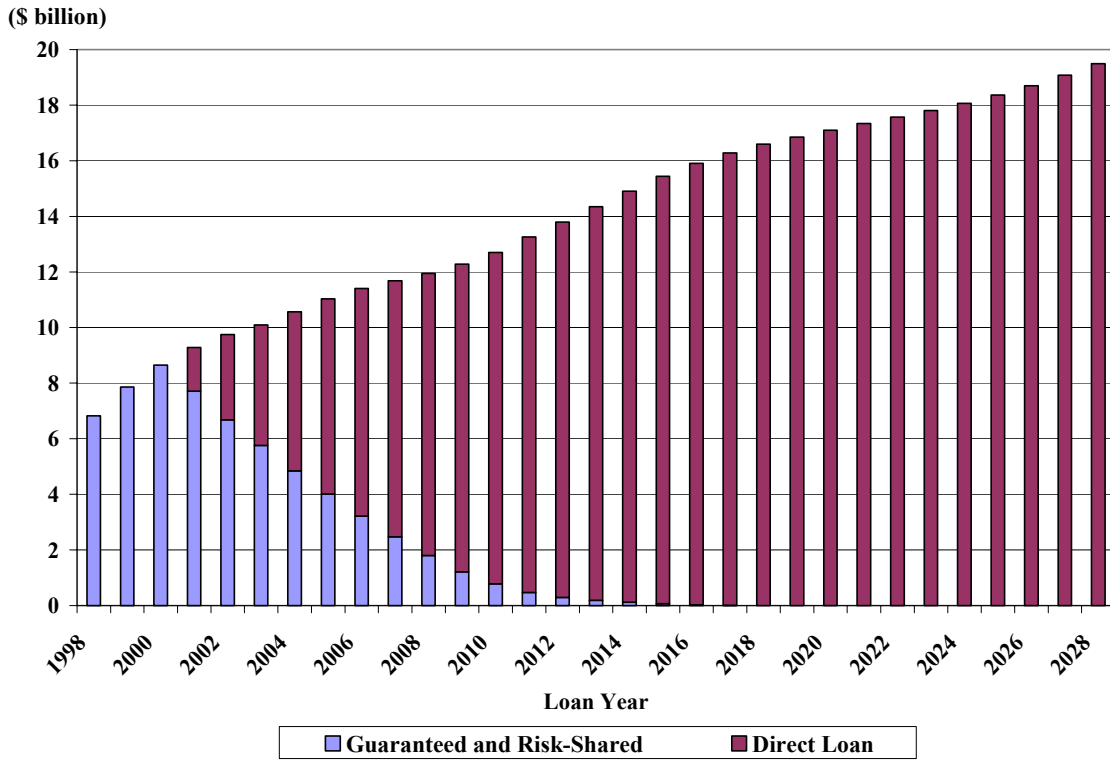
Table 13 Direct Loan Portfolio and Allowances (in millions of 2003 constant dollars)¹

As at 31 July	Loans In-study	Loans in Repayment	Impaired Loans	Total	Allowance for		
					Bad Debt		DRR
					Principal	Interest	
2003	2,797	1,318	213	4,329	518	4	32
2004	3,129	2,095	383	5,607	685	14	43
2005	3,334	2,936	482	6,751	836	28	54
2006	3,402	3,712	598	7,712	966	49	64
2007	3,387	4,387	720	8,494	1,075	74	72
2008	3,369	4,948	839	9,155	1,168	103	77
2009	3,376	5,423	945	9,744	1,247	135	80
2010	3,388	5,831	1,033	10,252	1,310	167	81
2011	3,398	6,211	1,103	10,711	1,361	197	81
2012	3,397	6,468	1,158	11,024	1,399	225	81
2013	3,398	6,659	1,199	11,255	1,428	252	80
2014	3,401	6,800	1,226	11,426	1,448	275	79
2015	3,397	6,897	1,243	11,537	1,461	293	78
2016	3,364	6,951	1,252	11,568	1,466	307	77
2017	3,299	6,959	1,256	11,514	1,462	318	76
2018	3,224	6,915	1,258	11,397	1,452	324	74
2019	3,142	6,840	1,255	11,237	1,437	329	73
2020	3,080	6,740	1,247	11,067	1,420	332	71
2021	3,029	6,633	1,236	10,897	1,402	333	69
2022	2,979	6,522	1,221	10,722	1,382	333	67
2023	2,936	6,409	1,204	10,549	1,362	331	65
2024	2,907	6,298	1,186	10,391	1,343	328	63
2025	2,889	6,197	1,168	10,254	1,327	325	62
2026	2,877	6,111	1,150	10,138	1,312	321	61
2027	2,867	6,042	1,133	10,042	1,299	317	60
2028	2,857	5,986	1,118	9,961	1,287	312	59

¹ For a given year, the value in 2003 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 to the cumulative index of the CPI for 2003.

Chart 5 shows a projection of the loan portfolio split between the Direct Loan, Guaranteed and Risk-Shared Regimes. Guaranteed and Risk-Shared loans are phased-out over time.

Chart 5 Projection of the Loan Portfolios



D. Projection of the Net Cost of the Program

1. Student Related Expenses

The most important category 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 expenses for interest relief and the provisions or expenses for DRR under the different regimes. The expense for Canada Study Grants supports students directly rather than assisting them in the form of loans.

Table 14 Student Related Expenses (\$ million)

Loan Year	Direct Loan			Risk-Shared and Guaranteed			Canada Study Grants	Total
	Interest Subsidy	Interest Relief	Provision* for DRR	Interest Subsidy	Interest Relief	DRR		
2002-03	121.8	14.0	10.8	39.0	59.4	9.0	75.5	329.6
2003-04	133.3	23.8	11.7	25.7	40.2	11.2	76.9	322.8
2004-05	145.5	35.4	12.0	18.1	27.2	14.5	78.5	331.2
2005-06	154.6	46.2	11.9	11.8	18.6	16.3	80.1	339.4
2006-07	161.6	54.9	11.8	5.4	13.1	14.4	81.8	343.1
2007-08	168.6	61.5	12.0	-	10.2	10.1	83.7	346.0
2008-09	177.3	66.4	12.5	-	6.9	6.1	85.6	354.7
2009-10	186.7	69.7	12.9	-	3.8	3.4	87.7	364.2
2010-11	196.7	72.9	13.3	-	1.9	2.2	90.0	377.0
2011-12	206.7	76.1	13.6	-	0.8	1.8	92.4	391.4
2012-13	217.3	79.5	14.0	-	0.3	1.6	94.9	407.6
2013-14	229.1	83.0	14.4	-	0.1	0.7	97.6	424.9
2014-15	240.5	86.7	14.8	-	0.0	0.2	100.5	442.8
2015-16	243.9	89.7	15.0	-	0.0	0.0	103.5	452.1
2016-17	246.4	92.1	14.9	-	-	0.0	106.6	460.0
2017-18	248.1	94.0	14.9	-	-	0.0	109.8	466.8
2018-19	249.1	95.3	15.0	-	-	-	113.1	472.5
2019-20	251.4	96.3	15.2	-	-	-	116.5	479.4
2020-21	254.6	97.1	15.5	-	-	-	120.0	487.2
2021-22	257.9	98.0	15.7	-	-	-	123.6	495.2
2022-23	261.8	99.1	16.0	-	-	-	127.3	504.2
2023-24	266.9	100.3	16.4	-	-	-	131.2	514.8
2024-25	273.2	101.9	16.8	-	-	-	135.1	527.0
2025-26	280.2	103.8	17.3	-	-	-	139.1	540.5
2026-27	287.6	106.0	17.8	-	-	-	143.3	554.7
2027-28	295.1	108.6	18.2	-	-	-	147.6	569.6

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

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 15 Risks to the Government (\$ million)

Loan Year	Direct Loan		Risk-Shared			Guaranteed	Loans Forgiven	Total
	Provision for Bad Debt		Risk	Put-back	Refunds	Claims for		
	Principal	Interest	Premium	Fees	to FIs	Impaired Loans		
2002-03	175.1	3.7	23.4	6.1	2.2	38.6	7.8	256.8
2003-04	189.5	11.1	11.7	6.2	2.9	26.2	12.7	260.4
2004-05	194.4	17.1	8.8	5.4	3.7	18.5	13.2	261.0
2005-06	192.5	25.1	7.8	4.6	5.6	12.0	13.5	261.0
2006-07	190.7	34.3	7.5	3.8	7.4	7.0	13.7	264.4
2007-08	194.0	44.2	6.9	3.0	8.7	4.4	13.8	275.0
2008-09	201.3	54.5	-	2.2	7.9	2.7	14.0	282.6
2009-10	207.8	64.0	-	1.5	6.7	1.6	14.4	295.9
2010-11	214.1	73.5	-	0.9	5.5	0.8	14.9	309.8
2011-12	219.3	82.6	-	0.6	4.3	0.4	15.5	322.6
2012-13	225.6	90.7	-	0.4	3.1	0.1	16.1	336.0
2013-14	232.8	97.9	-	0.2	2.3	0.0	16.7	349.9
2014-15	239.2	104.4	-	0.1	1.5	-	17.3	362.5
2015-16	241.5	109.4	-	0.1	0.9	-	17.8	369.7
2016-17	240.8	113.1	-	0.0	0.6	-	18.2	372.7
2017-18	241.3	116.8	-	-	0.3	-	18.5	376.9
2018-19	241.4	120.2	-	-	0.2	-	18.7	380.6
2019-20	245.5	123.2	-	-	0.1	-	19.0	387.8
2020-21	249.8	125.8	-	-	0.0	-	19.2	394.9
2021-22	253.1	128.2	-	-	0.0	-	19.5	400.9
2022-23	257.7	130.4	-	-	-	-	19.7	407.9
2023-24	264.3	132.4	-	-	-	-	20.0	416.8
2024-25	271.9	134.3	-	-	-	-	20.4	426.6
2025-26	279.6	136.1	-	-	-	-	20.8	436.5
2026-27	287.1	137.9	-	-	-	-	21.2	446.2
2027-28	294.6	139.9	-	-	-	-	21.7	456.1

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, impaired loans are included in claims paid as a statutory expense, since the Government bears the entire risk of impaired 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-back fees 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 18. 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 total administration expenses of the CSLP are the recovery costs of impaired loans and general administration, which are the expenses incurred by the departments involved and fees paid to service providers.

Table 16 Administration Expenses (\$ million)

Loan Year	Direct Loan	Risk-Shared	Guaranteed	General Administration	Total Administration Expenses
	Recovery Cost	Recovery Cost	Recovery Cost		
2002-03	0.8	1.6	13.0	116.4	131.8
2003-04	5.2	2.7	11.8	115.7	135.4
2004-05	8.5	3.7	10.6	114.7	137.5
2005-06	10.5	4.4	9.2	115.8	139.9
2006-07	13.5	5.0	7.8	119.2	145.5
2007-08	16.8	5.3	6.5	122.8	151.4
2008-09	20.1	5.2	5.2	126.8	157.3
2009-10	23.4	4.7	4.0	131.1	163.3
2010-11	26.6	4.0	2.9	135.9	169.4
2011-12	29.6	3.2	1.7	140.9	175.5
2012-13	32.5	2.5	1.1	146.3	182.4
2013-14	35.2	1.8	0.7	152.1	189.9
2014-15	37.8	1.3	0.5	158.3	198.0
2015-16	40.4	0.9	0.4	164.9	206.5
2016-17	42.9	0.6	0.2	171.7	215.4
2017-18	44.1	0.4	0.1	178.8	223.3
2018-19	45.5	0.2	0.1	186.2	231.9
2019-20	46.9	0.1	0.0	193.9	240.9
2020-21	48.1	0.1	0.0	201.9	250.0
2021-22	49.1	0.0	-	210.2	259.4
2022-23	50.1	0.0	-	218.9	269.0
2023-24	50.9	-	-	228.0	278.9
2024-25	51.8	-	-	237.4	289.1
2025-26	52.6	-	-	247.2	299.8
2026-27	53.4	-	-	257.4	310.8
2027-28	54.3	-	-	268.0	322.3

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 participating provinces and territory are paid a fee to finance the administration of the CSLP.

Table 17 Summary of Expenses (\$ million)

Loan Year	Student Related Expenses	Risks to the Government	Alternative Payment*	Administration Fees to Provinces	Total Administration Expenses	Total Expenses
2002-03	329.6	256.8	130.3	8.3	131.8	856.8
2003-04	322.8	260.4	160.0	8.4	135.4	886.9
2004-05	331.2	261.0	150.3	8.6	137.5	888.5
2005-06	339.4	261.0	124.0	8.8	139.9	873.0
2006-07	343.1	264.4	127.0	9.1	145.5	889.0
2007-08	346.0	275.0	127.5	9.4	151.4	909.2
2008-09	354.7	282.6	126.6	9.7	157.3	930.8
2009-10	364.2	295.9	123.7	10.0	163.3	957.1
2010-11	377.0	309.8	127.5	10.3	169.4	994.0
2011-12	391.4	322.6	130.8	10.7	175.5	1,031.1
2012-13	407.6	336.0	134.0	11.1	182.4	1,071.2
2013-14	425.0	350.0	137.7	11.6	189.9	1,114.0
2014-15	442.8	362.5	141.2	12.1	198.0	1,156.5
2015-16	452.1	369.7	144.7	12.6	206.5	1,185.6
2016-17	460.0	372.7	145.5	13.1	215.4	1,206.7
2017-18	466.8	376.9	144.7	13.6	223.3	1,225.5
2018-19	472.5	380.6	145.4	14.2	231.9	1,244.6
2019-20	479.4	387.8	144.3	14.8	240.9	1,267.2
2020-21	487.2	394.9	143.9	15.4	250.0	1,291.4
2021-22	495.2	400.9	143.7	16.0	259.4	1,315.3
2022-23	504.2	407.9	144.0	16.7	269.0	1,341.7
2023-24	514.8	416.8	144.8	17.4	278.9	1,372.6
2024-25	527.0	426.6	147.0	18.1	289.1	1,407.8
2025-26	540.5	436.5	150.4	18.8	299.8	1,445.9
2026-27	554.7	446.2	154.3	19.6	310.8	1,485.6
2027-28	569.6	456.1	159.4	20.4	322.3	1,527.8

* The calculation of alternative payment is based on expenses and revenues for a given loan year and the payment is accounted for in the following loan year.

As is evident in the table, total Government expenses associated with the Program increase from \$856.8 million in 2002-03 to \$1.5 billion in 2027-28. On average, total expenses increase at a rate of 2.3% per year from 2002-03 to 2027-28.

5. Total Revenues

In Table 18, the revenues for the Direct Loan Regime come from the interest earned from student loans in repayment, which include impaired loans and Interest Relief. This revenue is reduced by the Government's borrowing cost to obtain the net interest revenue. In the previous report, the interest on impaired loans accrued for three years after impairment, and the interest recovered after the three year period was recorded as revenue. In this report, the interest continues to accrue until the status of the loans becomes "non-recoverable", and interest recovered on impaired Direct Loans is not recorded.

Under the Guaranteed and Risk-Shared Regimes, there is no interest earned for the Government since students in good-standing pay interest directly to the financial institutions. The only source of revenue from these regimes comes from the recoveries of principal and interest from impaired loans.

On average, total revenues increase at a rate of 5.0% per year from 2002-03 to 2027-28.

Table 18 Total Revenues (\$ million)

Loan Year	Direct Loan			Risk-Shared	Guaranteed	Total Revenues
	Student Interest Earned	Borrowing Cost	Net Interest Revenue	Principal and Interest from Recovery	Principal and Interest from Recovery	
2002-03	93.4	-90.3	3.1	8.4	92.5	104.0
2003-04	158.5	-136.3	22.1	14.4	84.8	121.3
2004-05	230.7	-188.4	42.3	19.7	77.9	140.0
2005-06	312.6	-244.0	68.6	23.9	68.2	160.7
2006-07	397.9	-302.1	95.8	26.9	58.4	181.1
2007-08	482.4	-355.3	127.1	28.7	49.2	205.0
2008-09	566.4	-408.4	158.0	28.0	40.2	226.2
2009-10	642.7	-461.1	181.7	25.5	31.3	238.5
2010-11	716.1	-513.6	202.5	21.9	22.2	246.6
2011-12	788.3	-565.4	222.9	17.4	13.4	253.7
2012-13	852.8	-612.8	239.9	13.4	8.2	261.5
2013-14	913.7	-658.6	255.1	9.8	5.8	270.7
2014-15	972.1	-703.5	268.6	6.9	4.1	279.6
2015-16	1,018.9	-737.7	281.2	4.7	2.8	288.7
2016-17	1,054.8	-761.9	292.9	3.1	1.9	297.8
2017-18	1,083.8	-781.6	302.3	1.9	1.1	305.3
2018-19	1,107.5	-797.4	310.1	1.1	0.7	311.9
2019-20	1,127.3	-811.4	316.0	0.7	0.2	316.9
2020-21	1,144.7	-822.9	321.8	0.3	0.0	322.2
2021-22	1,161.0	-834.3	326.8	0.2	0.0	327.0
2022-23	1,176.4	-845.2	331.2	0.1	-	331.3
2023-24	1,191.4	-856.1	335.3	0.0	-	335.3
2024-25	1,207.3	-867.9	339.3	0.0	-	339.4
2025-26	1,225.0	-881.3	343.7	-	-	343.7
2026-27	1,245.7	-896.8	348.9	-	-	348.9
2027-28	1,269.4	-914.4	355.0	-	-	355.0

6. Net Cost of the Program

The following two tables show in current dollars and in 2003 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 tables presented earlier in this report.

Table 19 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
2002-03	856.8	104.0	752.8	661.4	91.5
2003-04	886.9	121.3	765.6	726.3	39.3
2004-05	888.5	140.0	748.5	735.8	12.7
2005-06	873.0	160.7	712.4	714.2	-1.8
2006-07	889.0	181.1	707.9	721.7	-13.8
2007-08	909.2	205.0	704.2	727.1	-22.9
2008-09	930.8	226.2	704.7	736.8	-32.1
2009-10	957.1	238.5	718.6	749.8	-31.1
2010-11	994.0	246.6	747.3	773.1	-25.8
2011-12	1,031.1	253.7	777.4	795.4	-18.0
2012-13	1,071.2	261.5	809.7	822.2	-12.5
2013-14	1,114.0	270.7	843.3	853.0	-9.7
2014-15	1,156.5	279.6	876.9	884.2	-7.3
2015-16	1,185.6	288.7	896.9	902.1	-5.2
2016-17	1,206.7	297.8	908.8	912.3	-3.5
2017-18	1,225.5	305.3	920.1	922.3	-2.2
2018-19	1,244.6	311.9	932.8	934.1	-1.3
2019-20	1,267.2	316.9	950.3	951.0	-0.6
2020-21	1,291.4	322.2	969.2	969.5	-0.3
2021-22	1,315.3	327.0	988.3	988.4	-0.1
2022-23	1,341.7	331.3	1,010.4	1,010.5	-0.1
2023-24	1,372.6	335.3	1,037.3	1,037.3	-
2024-25	1,407.8	339.4	1,068.4	1,068.4	-
2025-26	1,445.9	343.7	1,102.2	1,102.2	-
2026-27	1,485.6	348.9	1,136.7	1,136.7	-
2027-28	1,527.8	355.0	1,172.8	1,172.8	-

As shown in Table 19, the initial net annual cost for the Program is \$753 million for the loan year 2002-03. During the next five years, net costs are projected to decline by 6.5% 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 \$1.2 billion in the loan year 2027-28. This represents an annual average increase of 1.8% for the entire projection period.

In 2003 constant dollars (Table 20), the cost of the Program declines by an average of 1.0% a year, from \$753 million in the loan year 2002-03 to \$599 million in 2027-28.

Table 20 Net Annual Cost of the Program (in millions of 2003 constant dollars)²

Loan Year	All Regimes			Net Cost of the Program	
	Total Expenses	Total Revenue	Total Net Cost of the Program	Direct Loan	Risk-Shared & Guaranteed
2002-03	856.8	104.0	752.8	661.4	91.5
2003-04	869.7	118.9	750.7	712.2	38.6
2004-05	854.2	134.6	719.6	707.4	12.2
2005-06	822.4	151.3	671.0	672.8	-1.7
2006-07	819.7	167.0	652.7	665.5	-12.8
2007-08	819.8	184.8	635.0	655.6	-20.6
2008-09	820.0	199.2	620.8	649.0	-28.3
2009-10	822.9	205.0	617.9	644.7	-26.8
2010-11	833.3	206.8	626.5	648.2	-21.6
2011-12	842.0	207.2	634.9	649.6	-14.7
2012-13	851.3	207.9	643.5	653.4	-10.0
2013-14	860.7	209.1	651.6	659.1	-7.5
2014-15	867.9	209.8	658.0	663.6	-5.5
2015-16	863.8	210.4	653.4	657.3	-3.8
2016-17	853.5	210.7	642.9	645.4	-2.5
2017-18	841.6	209.7	631.9	633.4	-1.5
2018-19	829.9	207.9	621.9	622.8	-0.9
2019-20	820.3	205.1	615.2	615.6	-0.4
2020-21	811.6	202.5	609.1	609.3	-0.2
2021-22	802.5	199.5	603.0	603.1	-0.1
2022-23	794.8	196.3	598.6	598.6	-
2023-24	789.5	192.9	596.6	596.6	-
2024-25	786.1	189.5	596.6	596.6	-
2025-26	783.9	186.3	597.5	597.5	-
2026-27	781.9	183.7	598.3	598.3	-
2027-28	780.7	181.4	599.3	599.3	-

² For a given year, the value in 2003 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 to the cumulative index of the CPI for 2003.

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. In the delivery of a high quality CSLP actuarial report, it is of utmost importance to challenge the administration on the quality of data and to gain access to such data particularly on new impaired Direct loans and its recovery process.

The number of students receiving a CSLP loan in a year is expected to increase from 332,000 to 496,000 over the projection period. It represents an increase in the loan uptake of students in post-secondary institutions from 42% to 66%. 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, which increase 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, 2.1% per year; it comprises an annual average increase of 1.6% in the number of students participating in the CSLP and only a 0.5% increase in the average loan size, caused by keeping the weekly loan limit constant.

The portfolio of student loans increases from \$10.1 billion to \$19.5 billion by 2027-28. In constant dollars, the portfolio is projected to decrease slightly during the same period from \$10.1 billion to \$10.0 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 \$753 million to \$1.2 billion. This represents an average annual increase in the cost to the Government of 1.8%. The cost of the Government's involvement in constant 2003 dollars is expected to decrease from \$753 million to \$599 million. This represents an average annual decrease of 1.0% 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 regarding loans issued and consolidated are complete;
- 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.



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



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

Ottawa, Canada
8 June 2004

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 the 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 and Skills Development 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. A student must also fulfill a series of criteria (scholastic standard and financial) to be considered for a loan. Upon application every year to their province of residence, loans are available to full-time students regardless of age and, since 1983, to part-time students.

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. The Federal Budget 2003 increased the in-study income exemption for students. Income in excess of \$50 per week would be assessed as a resource at 100% (\$800/16-week term). 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 Government of Canada through 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*, are fully guaranteed by the Government to the lenders. The Government reimburses 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; however, the loans are 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 is not at risk except for the payment of the risk premium. Also, financial institutions can decide to sell a certain amount of impaired loans and the Government has to pay a put-back fee of five cents on the dollar for these loans. A part of the recoveries is shared with financial institutions.
- **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 *Canada Student Financial Assistance Act* and Regulations. 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. If a student's income is below a certain level while in school, the student may qualify for interest relief.

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. Since July 1995, the interest rate used to calculate the monthly payment is equal to the prime rate plus 250 basis points for the majority of students.

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 financial institutions or the NSLSC 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.

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, a 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, the Government introduced a DRR measure to help students who remain in financial difficulty after all possible interest relief is exhausted. Initially, a 50% loan reduction in principal up to \$10,000 was introduced. In 2003, the 50% loan reduction cap was removed, leaving the loan reduction up to \$10,000 in place. In addition, two new loan reductions up to \$5,000 each, were introduced for borrowers still experiencing financial hardship in repayment. To determine whether the previous reduction resulted in a manageable debt level, twelve months must have elapsed between each reduction.

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.

Appendix 2 – Data

The input data required with respect to Direct loans were extracted from data files provided by Human Resources and Skills Development (HRSD). The data regarding loans issued and consolidated were found to be complete. However, higher quality data regarding Direct loans on defaults and recoveries (principal and interest) would help improve assumption setting and increase the quality of the actuarial report.

1. Direct Loans Issued

Table 21 presents the data extracted from an HRSD file on the number of students and amount of Direct loans issued for loan years 2000-01, 2001-02 and 2002-03 compared with HRSD publicized data.

Table 21 Direct Loans Issued and Number of Students

Loan Year	Amount of Loans Issued (\$ million)		Number of Students	
	HRSD File	HRSD Publication	HRSD File	HRSD Publication
2000-01	344,347	346,568	1,583	1,570
2001-02	328,757	331,541	1,509	1,512
2002-03	328,294	331,763	1,541	1,549

2. Direct Loans Consolidated

Table 22 presents the number and amount of consolidated Direct loans extracted from HRSD data files. The amounts are compared with data of the Monthly Financial Information Schedule (MFIS).

Table 22 Direct Loans Consolidated

Loan Year	Number of Loans Consolidated	Amount of Loans Consolidated (\$ million)	
		HRSD File	MFIS
2000-01	11,603	35.5	61.6
2001-02	130,013	628.9	746.1
2002-03	144,094	1,002.1	949.2
All	285,710	1,666.5	1,756.9

3. Defaults and Recoveries for Direct Loans

Table 23 shows the data on defaults and recoveries (principal and interest) for Direct loans extracted from HRSD data files.

Table 23 Defaults and Recoveries for Direct Loans

Loan Year	Defaults (\$ million)	Recoveries (\$ million)
2000-01	0	0
2001-02	5.2	0
2002-03	249.2	32.6

According to HRSD, the outstanding balance (principal and interest) for defaulted Direct loans at the beginning of August 2003 was \$226.5 million. In future actuarial reports, the history of all defaults, recoveries and write-offs will be analyzed and compared with government practices.

4. Interest Relief

Table 24 compares amounts of interest relief payments for Direct loans, obtained from HRSD, and the interest relief expense extracted from the HRSD 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 start and end dates.

Table 24 Interest Relief Payment Data for Direct Loans (\$ million)

Loan Year	Amounts Obtained from HRSD	Estimated from HRSD Files
2000-01	0	0
2001-02	3.1	3.9
2002-03	13.4	14.7

Appendix 3 – Assumptions and Methodology

1. Growth of Total Loans Issued

The growth of total loans issued is related to the number of students participating in the CSLP, the evolution of needs of those CSLP students, and the loan limit. The evolution of the number of CSLP students and their needs is discussed below.

a) Evolution of Number of CSLP Students

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 the territories of the Northwest Territories and Nunavut. Future fertility, mortality, and migration assumptions are applied to this population. The fertility, mortality, and migration assumptions are 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 considerably raise labour force participation rates. The labour force non-participation rates associated with post-secondary enrolment are shown for years 2002-03, 2011-12, and 2027-28 in Table 25 below.

Table 25 Enrolment of Students in Post-secondary Education (for Loan Years)

Age Band	Not in Labour Force		Change – Not in Labour Force (2) / (1) - 1	Not in Labour Force 2027-28 (3)	Change – Not in Labour Force (3) / (1) - 1
	2002-03 (1)	2011-12 (2)			
	%	%	%	%	%
18-19	32.3	33.7	4.4	33.1	2.4
20-24	24.0	23.9	-0.6	22.4	-6.5
25-29	16.0	15.8	-1.1	13.0	-18.7
30-34	15.4	14.7	-4.7	12.3	-20.5
18-34	20.0	19.9	-0.5	17.6	-11.7

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 labour force participation rate in the future implies that a smaller percentage of potential full-time students will be available to attend a post-secondary institution.

Table 25 shows a decrease in the inactive population, with an expected cumulative decrease of 0.5% over the next nine years and a larger decrease of 11.7% by 2027-28. This labour shortage will cause the expected decrease in the population not participating in the labour force from 2011-12 to 2027-28. This decrease is mainly concentrated in the older age ranges (25-34) since these individuals are more 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) Double Cohort

The double cohort, resulting from the Government of Ontario’s elimination of Grade 13 by August 2003, was determined, in the last report, to cause an overall growth of 10% in the total number of students enrolled full-time in post-secondary institutions, starting in 2002-03. The “Double Cohort Study Phase 3 Report for the Ontario Ministry of Education” dated January 2004 by Dr. Alan King from the Social Program Evaluation Group at Queen’s University gave no new information that would justify modifying the projected 10% enrolment growth.

The 10% enrolment growth 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 enrolment growth due to the double cohort is spread over four years and began in 2002-03. Reasons for the prolonged growth are ‘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 institution is as follows: 12% in the first year, 60% in the second, 20% in the third, and 8% over the fourth year. This increased growth will phase out when both cohorts graduate completely and consolidate their loans.

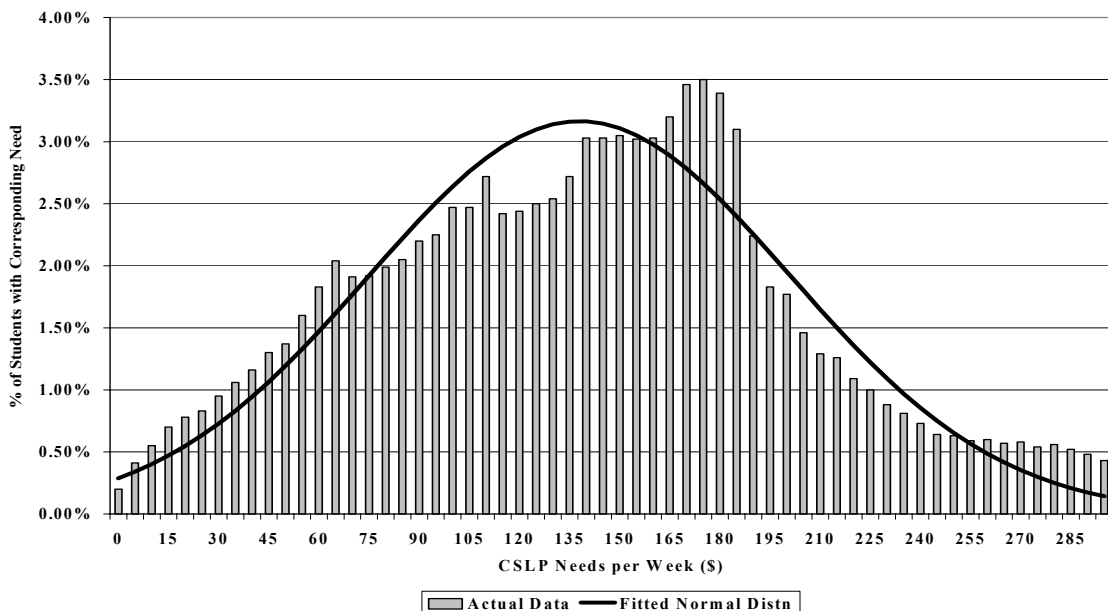
iv) Participation in the CSLP

HRSD provided CSLP needs assessment data for the past three loans years. The CSLP need per week was determined using the following calculation:

$$\text{CSLP need per week} = (\text{assessed need} / \text{number of assessed weeks}) \times 60\%$$

CSLP weekly needs represent 60% of the assessed weekly needs because the CSLP provides 60% of the total loan, while the participating province or territory of residence provides the remaining 40%. A histogram of the CSLP weekly needs was created and very closely resembled a normal distribution. Chart 6 below shows the normal distribution fitted to the actual CSLP students’ weekly needs data.

Chart 6 2001-02 Actual Needs and Fitted Normal



The normal distribution provides a good fit, but had to be adjusted slightly in order to provide a better fit to the historical data. First, at \$0 of need, there will be no loans issued and no loans will be issued for negative need. A second-degree polynomial replaced the normal distribution to the left of the peak to ensure the distribution complied with this logic. Second, the proportion of students at or above the loan limit is known for this historical data, so the entire curve was shifted slightly to the right to reflect the proper proportion. The new distribution created by making these small adjustments will be referred to as a modified normal distribution.

For each year in the projection period, the average need increase from the prior year was calculated using the projections for tuition fees, other expenses, and resources. Students with low needs may experience a small increase in their needs since they have resources to offset the expense increase. Students with high needs will experience a larger need increase because they do not have sufficient resources to offset an increase in expenses.

The projected average need increases are used to determine new parameters for the modified normal distribution in each of the projection years. Analysis of three years of needs assessment data showed that the mean of the needs curves increased at a slower rate than the projected average student needs. Thus, the mean of the CSLP students' needs curve is assumed to be the average of the prior year plus two-thirds of the projected average student need increase. After the new parameters are determined, the CSLP students' needs curves are projected for the 25-year period.

Since a shift in each modified normal distribution represents the increase in the proportion of students in the CSLP, an assumption was made regarding the growth of the curves. It is assumed that the intersection of subsequent curves will occur at the need corresponding to the average need of the prior year plus one-half of the projected average need increase during the current year. Having the intersection of curves occur slightly to the right of the average need makes sense because as needs increase from year to year, students will move further to the right of the needs curve. Using this assumption, each curve was adjusted, resulting in the area under successive curves exceeding 100%. The increased area under the curve represents an increase in participation in the CSLP. For example, if the area under the 2002-03 needs curve is 100% and the area under the 2003-04 curve is 102%, then the loan uptake rate will increase by 2%. The product of the number of students enrolled full-time and the loan uptake rate gives the number of students in the CSLP.

b) Evolution of Needs of the CSLP Students

As discussed in the Main Report, students' needs are defined as the excess of tuition and other expenses over student resources. Table 5 shows the evolution of students' needs throughout the projection period.

i) Tuition

Tuition fees are, in part, determined by government policies. Thus, they are determined using provincial budgets stating the government's intentions, along with recent and historical experience for projecting short and long-term increase in tuition fees. The future evolution of tuition is shown both in Table 5 of the Main Report and Table 26 of this appendix.

To arrive at an estimate for tuition increases, the provinces' respective budgets stating their intentions, along with actual tuition increase as reported in news releases and by statistics sources were used to project tuition increases for the next four years. Table 26 below illustrates these results.

The six-year tuition fee freeze in British Columbia was lifted in February 2002. The anticipation was that after three years of increases, British Columbia tuition fees would be in line with national averages. After two years of large increases (33.9% in 2002-03 and 34.8% in 2003-04), an increase of 7% in 2004-05 should bring British Columbia tuition to the national average. After that, an increase equal to the increase in the national average will apply.

Table 26 Short-term Increase of Tuition Expenses

Province	Weight in %	Budget/Experience	Results			
			2003-04 %	2004-05 %	2005-06 %	2006-07 %
Newfoundland	3.1	-3.3% decrease, freeze	-3.3	0.0	0.0	0.0
Prince Edward Island	0.9	4.1% increase	4.1	4.1	4.1	4.1
Nova Scotia	6.8	6.2% increase	6.2	6.2	6.2	6.2
New Brunswick	4.9	5.0% increase	5.0	5.0	5.0	5.0
Ontario	44.6	4.2% increase, followed by a two-year freeze, then 2.5% increase	4.2	0.0	0.0	2.5
Manitoba	2.7	0.3% increase	0.3	0.3	0.3	0.3
Saskatchewan	4.3	8.5% increase	8.5	8.5	8.5	8.5
Alberta	12.5	7.4% increase	7.4	7.4	7.4	7.4
British Columbia	20.2	34.8% initial increase, followed by 7.0% increase, then 2.5% increase	34.8	7.0	2.5	2.5
Weighted Average			10.8	3.4	2.5	3.6

The long-term estimate of tuition is based on past increases in tuition relative to increases in the CPI. Over the last 26 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 due to the aging of the population, the 3.6% tuition increase for 2006-07 is graded to reach the CPI increase plus 3% by 2011-12.

The starting point for the 2002-03 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 \$4,592 for average tuition fees in 2002-03.

ii) Student Resources

Student resources include student wages, parental contributions, and other resources. Increased resources ultimately serve to reduce the maximum loan available to students through needs analysis. Student needs are developed in Table 5 of the Main Report.

The starting point for average resources in 2002-03 is calculated as a residual value. Since the average loan approximately equals average expenses minus average resources, then average resources are roughly equal to average expenses minus average loan size with adjustments for unmet needs and the in-study income exemption. This results in an estimate of \$6,924 for a student's average resources in 2002-03.

iii) Other Expenses

Other expenses are considered to be any student expense other than tuition fees. These expenses include books, shelter, food, clothing, and transportation and are assessed by the participating provinces and territory.

Table 27 Monthly Expenses 2002-03

Province	Weight in %	Monthly Budget \$				Total	Annual Expenses \$
		Shelter	Food ⁽¹⁾	Transportation	Miscellaneous ⁽²⁾		
Newfoundland	3.10	322	199	54	173	748	8,976
Prince Edward Island	0.90	323	176	52	186	737	8,844
Nova Scotia	6.77	368	180	50	182	780	9,360
New Brunswick	4.91	339	181	55	176	751	9,012
Québec	1.19	317	204	55	238	814	9,768
Ontario	43.39	442	198	72	214	926	11,112
Manitoba	2.73	334	187	63	225	809	9,708
Saskatchewan	4.34	304	187	42	224	757	9,084
Alberta	12.46	324	190	50	228	792	9,504
British Columbia	20.19	488	200	59	200	947	11,364
Yukon	0.01	435	221	40	230	926	11,112
Northwest Territories	0.00	593	222	66	234	1,115	13,380
Weighted Average		411	194	62	208	876	10,512

⁽¹⁾ Purchased from stores.

⁽²⁾ 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, pay for their lodging 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. The amount covered per week includes shelter, food, local transportation, and miscellaneous living expenses including clothing. Table 27 illustrates the monthly amounts allotted by category for each province, as well as the provincial weight. These values are used to derive the final annual expense per province and across Canada. The total of these expenses amounts to \$10,512 for the loan year 2002-03.

Books and supplies are assumed to be roughly equal to 20% of tuition, which is \$4,592 for 2002-03. This brings the total expenses attributable to books and supplies to \$918 (20% x \$4,592). The total amount of the CSLP student expenses, indexed to future increases in the CPI, amounts to \$11,430 for the loan year 2002-03.

2. Consolidation

Under the Direct Loan Regime, loan consolidation occurs over a period of eleven years after a loan is disbursed. Table 28 shows the distribution of consolidation by year since a loan is issued. These results were derived from past CSLP data.

Table 28 Distribution of Consolidation

Year After the Loan was Issued	% Consolidated
1 st	2.5
2 nd	46.1
3 rd	19.0
4 th	15.3
5 th	6.5
6 th	4.5
7 th	3.0
8 th	1.5
9 th	0.7
10 th	0.6
11 th	0.5

3. Interest Relief

The utilization rates for interest relief (IR) are the same as in the previous report. Table 29 shows the utilization rates of interest relief for the Direct Loan Regime from loan year 2004-05 onward which are equal to the non-adjusted rates for the Risk-Shared Regime. For loan year 2002-03, the utilization rates are adjusted to 80% of the rates of Table 29. Adjustments are 90% for loan year 2003-04.

Table 29 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 maximum interest relief utilization is 80%. The average amount of debt relief is about 30% of the loan value.

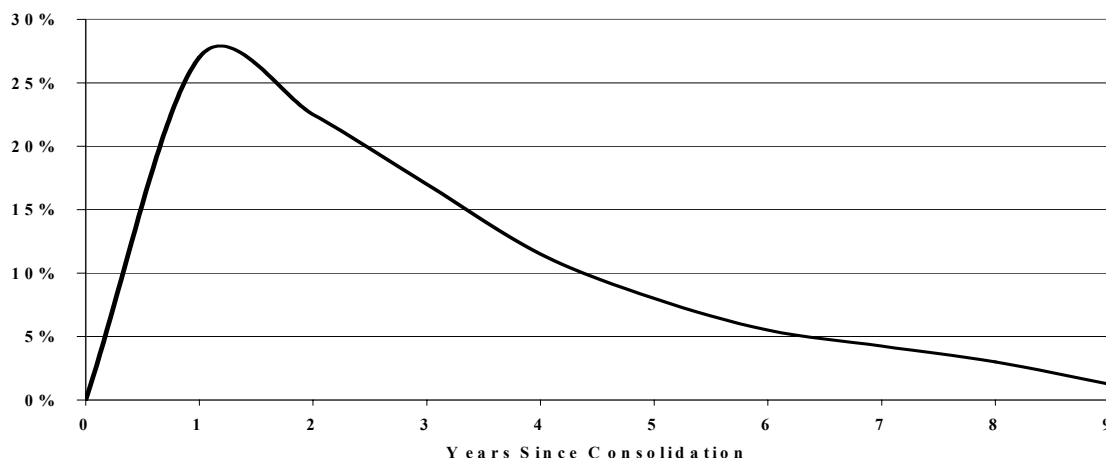
The Federal Budget 2003 modified the DRR measure. Two new loan reductions up to \$5,000 each were added. The assumptions for the proportion of amount of loans going on DRR for the second time and third time are 10% and 3% respectively. The average amount of debt relief is 50% and 70% for the second and third reduction, respectively.

5. Default Rate

The analysis of the previous report was not modified for default and recovery rates. A larger than expected amount of defaults occurred in loan year 2002-03 and for the first few months of 2003-04. This situation will be monitored closely in the next few years since the actual experience is not sufficient at this point to confirm a new trend.

To determine the initial default distribution, the amounts of impaired loans from 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 7 shows this distribution.

Chart 7 Default Distribution



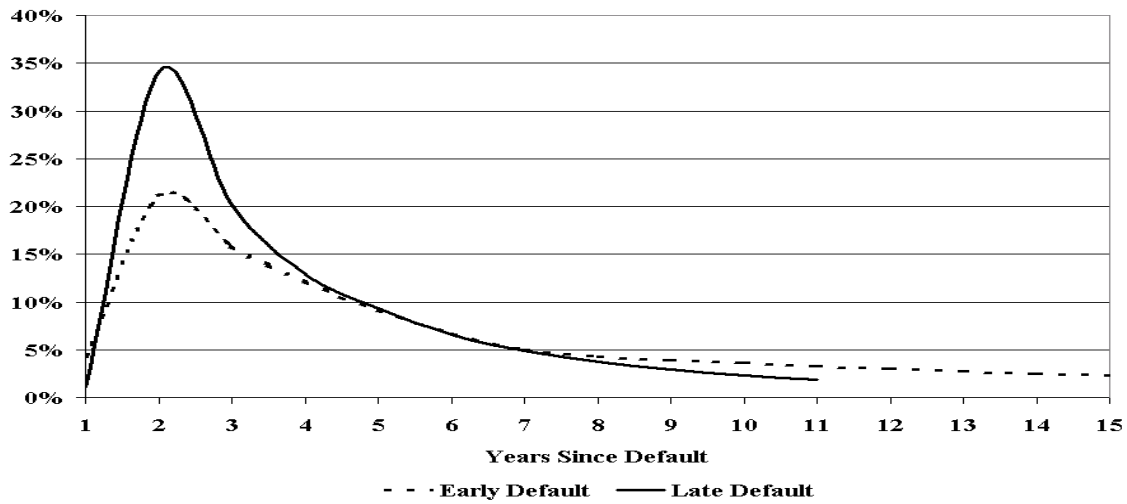
6. Recovery Rate

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 8).

Chart 8 Recovery Distribution Depending on Date of Default



To calculate the proportion of defaults and recoveries, HRSD data files were used to classify amounts of default according to consolidation year and recoveries associated with each default year.

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

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: program enhancements, economic environment, grace period interest accrued on loans and DRR. The adjustments are based on the same logic as previously reported and are summarized in the following table.

Table 30 Bad Debt Provision – Principal

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

The methodology for the calculation of the bad debt provision – interest was modified to match the DARS reporting of loans according to the number of years since impairment. In this report, interest on impaired loans is accrued until the loan reaches the “non recoverable” status. A loan reaches this status when the collectibility of either principal or interest is not reasonably assured. Generally, a loan is written-off in the year following its transfer from a “recoverable” to a “non-recoverable” status.

Since the interest on impaired loans is accounted for as revenue, an allowance is established to cover the risk that such accrued interest will never be recovered. Basically, the methodology implies the calculation of:

- accrued interest in each year on impaired loans at the student cost of borrowing rates,
- projected outstanding interest at the end of each year, using write-off and recovery distributions, as presented below, and
- projected allowance at the end of each year by adding per year since impairment the product of recoverable outstanding interest accounts and the corresponding provision rate; then 100% of outstanding non-recoverable accounts is added.

The expense for a year is equal to the variation between the total allowance (on recoverable and non-recoverable accounts) at the end of the year and the remaining allowance of the previous year.

Table 31 presents, according to the number of years since impairment, the write-off and recovery distributions for interest on impaired loans as well as the provision and recovery rates. The write-off distribution is also used for the calculation of provision for bad debt – principal.

Table 31 Distribution for Allowance for Bad Debt – Interest (Direct Loans)

Number of Years Since Impairment	Distribution (%)		Provision Rate (%)	Recovery Rate (%)
	Write-off	Recovery		
Less than 1	4	26	20.0	80.0
Between 1 and 2	4	19	40.8	59.2
Between 2 and 3	12	18	56.0	44.0
Between 3 and 4	12	12	70.4	29.6
Between 4 and 5	12	7	80.0	20.0
Between 5 and 6	11	4	85.6	14.4
Between 6 and 7	11	3	88.8	11.2
Between 7 and 8	10	3	91.2	8.8
Between 8 and 9	8	2	93.6	6.4
Between 9 and 10	5	1	95.2	4.8
Between 10 and 11	4	1	96.0	4.0
Between 11 and 12	3	1	96.8	3.2
Between 12 and 13	2	1	97.6	2.4
Between 13 and 14	1	1	98.4	1.6
Between 14 and 15	1	1	99.2	0.8

The recovery distribution is a weighted average of the distributions of the recovery of principal for early and late defaults. The provision rate for interest on loans in default less than a year is set at 20%, and the corresponding recovery rate is set at 80%. The following recovery rates are obtained by taking the product of 80% and the sum of future recovery percentages of the distribution. Provision rates are the difference between 100% and the recovery rate. For example, the calculation of the rates for the period “between 4 and 5” years is:

$$\begin{aligned}
 \text{Recovery rate} &= 80\% * (7\% + 4\% + 3\% + 3\% + 2\% + 1\% + 1\% + 1\% + 1\% + \\
 &\quad 1\% + 1\%) \\
 &= 80\% * 25\% \\
 &= 20\% \\
 \text{Provision rate} &= 100\% - 20\% = 80\%
 \end{aligned}$$

Using this methodology, about 38% of all projected accrued interest on impaired loans will be recovered, which corresponds to the Guaranteed Loans' experience over the last 15 years.

9. Debt Reduction in Repayment Provision

In accordance with the 2003 Federal Budget, DRR was enhanced as at 1 August 2003. As mentioned in the previous report, the provision rate was high last year compared to projected expenses; with the changes, the projected expenses are more in line with the provision. Therefore the DRR provision rate is assumed to remain constant at 0.7% on all new loans issued.

10. Other 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, Direct Loans' borrowing costs for loans in repayment or on interest relief (i.e. in good-standing) 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 was \$130.3 million for the loan year 2002-03 based on expenses and revenues of loan year 2001-02 and \$160.0 million for the loan year 2003-04 based on expenses and revenues of loan year 2002-03.

b) Recovery Costs

The recovery costs have been projected using a percentage of the recoveries. The assumptions used for the recovery costs is 18.5% of the total recoveries. This rate is assumed to be constant in the future.

c) Administration Costs

HRSD 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 32.

Table 32 Administration Costs

Loan Year	Administration Costs (\$ million)
2002-03	116.4
2003-04	115.7
2004-05	114.7
2005-06	115.8
2006+	Increase with wages

d) Administration Fees to Provinces

For the loan year 2002-03, 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 2002-03, the actual cost of the Canada Study Grants is \$75.5 million. For future years, the cost of Canada Study Grants is projected to increase with inflation.

f) Loans Forgiven

For the loan year 2002-03, the cost of loans forgiven is \$7.8 million. The projection of loans forgiven follows the increase of the portfolio that performs normally (loans in study and in repayment). The projection is based on loans forgiven in the loan year 2001-02 (\$11.3 million) because the amount in the loan year 2002-03 seems low compared with previous years and the experience for the first few months of 2003-04 shows that the amount will increase.

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 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 “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 33 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 are presented in Table 35 at the end of this Appendix.

Table 33 Long-term Sensitivity Test Assumptions

Assumption	Low-cost	Best-estimate	High-cost
1. Loan Limit	--	\$165	\$210 in 2005-06, maintained thereafter
2. Wage Increases	0.6%	1.1%	1.6%
3. Inflation	2.0%	3.0%	4.0%
4. Labour Force Participation Rates – 2027-28 Canada less Québec, Northwest Territories and Nunavut (ages 18-34)	83.4%	82.4%	81.4%
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	70%	100%	130%
8. Net Defaults	5.5%	10.9%	16.4%

1. Loan Limit

This scenario assumes that the current loan limit of \$165 per week is increased by \$45 to \$210 per week in the loan year 2005-06 and maintained at this level thereafter. This scenario shows the effect of a one-time significant increase to the limit. Contrary to the best-estimate scenario, the proportion of students at the loan limit will decrease in this scenario, but the amount of total loans issued will increase gradually from 14% in 2005-06 to 23% at the end of the projection period.

Chart 9 New Loans Issued (\$ million)

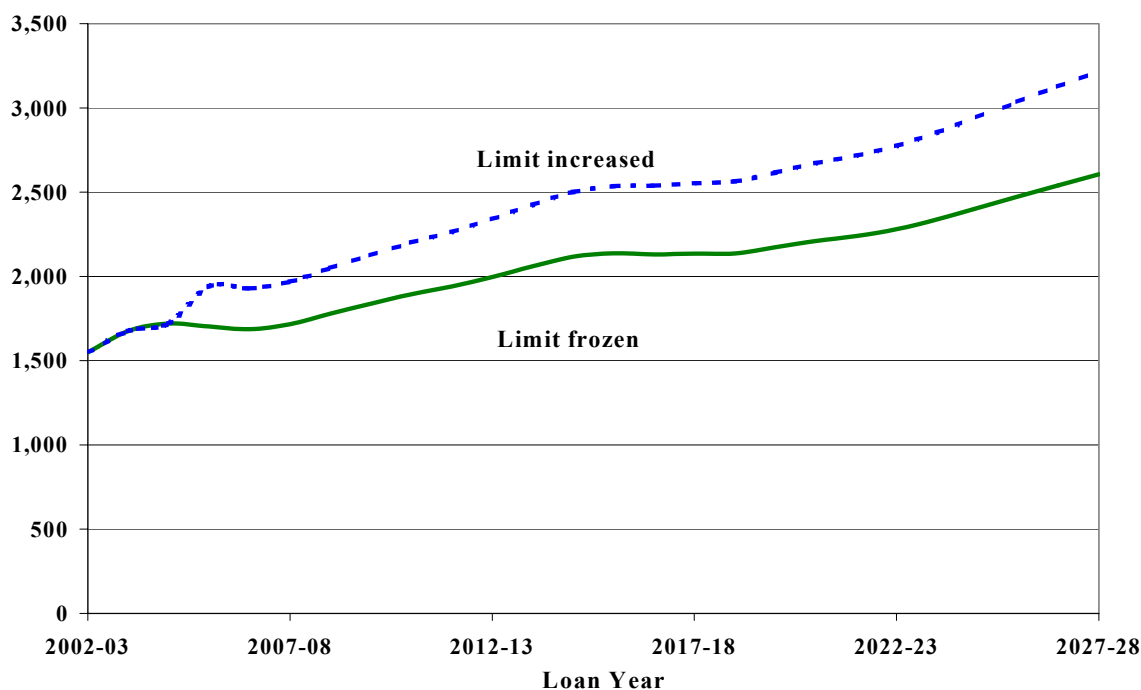


Chart 9 and Table 34 show the impact of increasing the loan limit on loans issued compared to keeping the limit frozen.

Table 34 Impact of Loan Limit on Loans Issued

Loan Year	Frozen at \$165			Increased to \$210 Starting in 2005-06				
	Limit	% of Students at the Limit	Total Loans Issued	Limit	% of Students at the Limit	Loans Issued		
						Total	Increase Over Frozen	
(\$)		(\$ million)	(\$)		(\$ million)	(\$ million)	(%)	
2002-03	165	46.9	1,549	165	46.9	1,549	-	-
2003-04	165	51.9	1,677	165	51.9	1,677	-	-
2004-05	165	53.6	1,720	165	53.6	1,720	-	0
2005-06	165	54.4	1,703	210	32.3	1,942	239	14
2010-11	165	62.8	1,895	210	40.9	2,201	306	16
2015-16	165	69.5	2,137	210	52.6	2,536	399	19
2020-21	165	77.0	2,211	210	63.7	2,672	461	21
2025-26	165	83.5	2,474	210	73.6	3,037	563	23
2027-28	165	85.7	2,607	210	77.0	3,215	608	23

2. Wage Increases

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 2004-05 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 1.9% in 2003-04 and 2.0% in 2004-05. It is then 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 rate 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 2012 to 2028, it is assumed that participation rates will increase overall to 82.4% to compensate for the labour shortage.

For the low-cost scenario, participation rates are assumed to reach their highest projected level of 83.4% by 2027-28. 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 81.4% by 2027-28. 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 increases is based on past increases of tuition relative to the CPI. Over the last 26 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, the ultimate tuition increase 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, the tuition increase 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. 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 has an impact on the cost of the interest subsidy for students in school and the cost of providing interest relief for students in need. 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 of interest relief by 30%. 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 of interest relief by 30%. 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 half to 10% and the recovery rate remains unchanged at 45.5%. Subsequently, the net default rate is 5.5% with a corresponding provision rate of 5.9% 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 10% to 30% and the recovery rate remains unchanged at 45.5%. Subsequently, the net default rate is 16.4% with a corresponding provision rate of 16.8% of new loans issued. The economic environment is assumed to be worse in this scenario with a higher unemployment rate for students.

Table 35 Sensitivity Tests Results for Loan Year 2027-28

Assumptions	Scenario	Loans		Average	Portfolio		Net Cost Increase	
		Issued	Increase	Growth Rate	July	Increase	(\$ million)	%
		(\$ million)	%	%	(\$ million)	%	(\$ million)	%
Base scenario	Best-estimate	2,607	-	2.1	19,492	-	1,173	-
Sensitivity tests								
1 - Increase limit to \$210 in 2005-06, and maintained thereafter	High-cost	3,215	23.3	3.0	23,760	21.9	1,378	17.5
2 - Wage differential -0.5%	Low-cost	2,668	2.3	2.2	19,884	2.0	1,159	-1.2
2 - Wage differential +0.5%	High-cost	2,523	-3.2	2.0	19,100	-2.0	1,186	1.2
3 - Inflation -1%	Low-cost	2,385	-8.5	1.8	18,141	-6.9	888	-24.3
3 - Inflation +1%	High-cost	2,802	7.5	2.4	20,931	7.4	1,495	27.5
4 - High labour force participation	Low-cost	2,506	-3.9	1.9	18,857	-3.3	1,141	-2.8
4 - Low labour force participation	High-cost	2,706	3.8	2.2	20,051	2.9	1,203	2.6
5 - Tuition: CPI	Low-cost	2,102	-19.4	1.3	16,377	-16.0	1,012	-13.7
5 - Tuition: CPI +6%	High-cost	3,149	20.8	2.8	22,694	16.4	1,341	14.4
6 - Interest rate -2%	Low-cost	2,607	-	2.1	19,070	-2.2	925	-21.2
6 - Interest rate +2%	High-cost	2,607	-	2.1	19,913	2.2	1,423	21.3
7 - Interest relief utilization 70%	Low-cost	2,607	-	2.1	19,368	-0.6	1,139	-2.8
7 - Interest relief utilization 130%	High-cost	2,607	-	2.1	19,756	1.4	1,202	2.5
8 - Net default rate 5.5%	Low-cost	2,607	-	2.1	19,271	-1.1	805	-31.3
8 - Net default rate 16.4%	High-cost	2,607	-	2.1	19,712	1.1	1,540	31.3

Appendix 5 – Acknowledgements

We would like to thank the Socio-Economic Analysis Group, Canada Student Loans Program Directorate of the Department of Human Resources and Skills Development 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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