



Office of the Superintendent of  
Financial Institutions Canada

Bureau du surintendant des  
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Office of the Chief Actuary

Bureau de l'actuaire en chef



# ACTUARIAL REPORT

on the  
**CANADA  
STUDENT  
LOANS  
PROGRAM**

as at 31 July 2005

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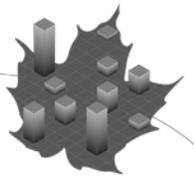
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9 June 2006

The Honourable Diane Finley, P.C., M.P.  
Minister of Human Resources and Social Development  
Gatineau, Canada

The Honourable James M. Flaherty, P.C., M.P.  
Minister of Finance  
Ottawa, Canada

Dear Ministers:

Pursuant to a request from the Assistant Deputy Minister, Human Resources and Social Development, I am pleased to submit the fifth actuarial report as at 31 July 2005 on the Canada Student Loans Program established under the *Canada Student Loans Act* and the *Canada Student Financial Assistance Act*.

Yours sincerely,

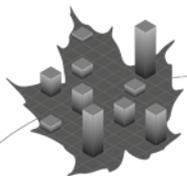
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Chief Actuary



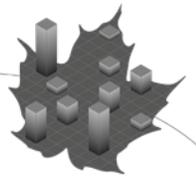


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## I. Executive Summary

Effective 1 August 2000, the Government redesigned the delivery of the Canada Student Loans Program (CSLP) 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 the 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, as well as a discussion of all the assumptions underlying the results of the review. The results are presented on a loan year basis from 1 August to 31 July.

### A. Purpose of the Report

This is the fifth 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 2005 and includes projections of future costs of the Program through loan year 2029-30. An actuarial review of the CSLP provides an evaluation of the Program's overall financial costs and increases the level of information provided to the Minister of Human Resources and Social Development, the Minister of Finance, Parliament and the public.

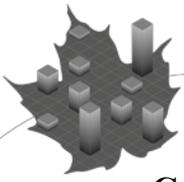
In accordance with accepted actuarial practice, the main purpose of this actuarial report is to show estimates of:

- projections 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 the best-estimate assumptions in section A of the Main Report, section B presents projections of new loans issued, the number of students eligible 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 regimes. These are followed by a conclusion of the actuarial review and the actuarial opinion regarding this review.

The various appendices provide supplemental information on Program provisions, a 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 of being involved in the Direct Loan Regime of the CSLP. The following summarizes the main findings of the report. The results are presented on a loan year basis from 1 August to 31 July.

- Although the number of students enrolled full-time in a post-secondary institution decreases over the projection period, the number of students receiving a CSLP loan in a year increases from 340,000 in 2004-05 to 444,000 in 2029-30. This represents an increase in the loan uptake rate of students in post-secondary institutions from 41% to 62%.
- Following an amendment to the *Canada Student Financial Assistance Act* (CSFAA), the weekly loan limit is increased by \$45 (from \$165 to \$210) in loan year 2005-06 and is maintained at that level thereafter. This results in the following:
  - new loans issued increase from \$1.6 billion in 2004-05 to \$1.9 billion in 2005-06, which is consistent with the data received so far for loan year 2005-06. New loans issued continue to increase during the projection period and reach \$2.9 billion in 2029-30; and
  - an immediate decrease in the percentage of students at the loan limit is expected (53% in 2004-05 to 34% in 2005-06), but the proportion will grow thereafter and is projected to reach 78% in 2029-30. In approximately ten years, the situation will be the same as today with just over half of all CSLP students at the loan limit. At that time, the loan limit may need to be revisited.
- The portfolio of student loans increases from \$10.9 billion in 2004-05 to \$19.8 billion by 2029-30. The amount of Direct loans which were in default on 31 July 2005 is \$674 million.
- According to the projections, the \$15 billion limit on the aggregate amount of outstanding loans in section 13 of the CSFAA is expected to be reached in loan year 2014-15.
- The total net cost (revenues less expenses) of the Government's involvement in the CSLP is expected to grow from \$761 million in 2004-05 to \$1.4 billion in 2029-30. This represents an average annual increase in cost to the Government of 2.3%.
- The provision rates for bad debt (principal and interest) and debt reduction in repayment are unchanged from the previous report.
- As a sensitivity test, the new limit of \$210 is indexed annually to inflation. The results of the test are included in Appendix 4 and are summarized below:
  - an additional \$102 million (5% increase) of new loans is issued in 2010-11 due to the indexation of the limit and an additional \$1,408 million (48% increase) in 2029-30; and
  - the portfolio reaches \$26.8 billion instead of the expected \$19.8 billion in loan year 2029-30 and the total net cost for the Government's involvement in the CSLP increases by \$408 million (30% increase) in loan year 2029-30.



## 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* (CSLA) applies to loan years preceding August 1995. The *Canada Student Financial Assistance Act* (CSFAA) replaced the previous act for loan years after July 1995.

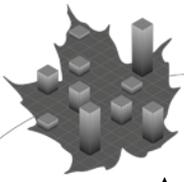
On 1 August 2000, the Government redesigned the delivery of the Program to disburse loans directly to students. The Office of the Chief Actuary was given the mandate to provide an assessment of the current costs of the CSLP, a long-term (25 years) forecast of these costs, a portfolio projection, as well as a discussion of all the assumptions underlying the results of the review. The results are presented on a loan year basis from 1 August to 31 July.

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.

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) in order 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 factors that affect eligibility. Such factors include the evolution of the projected student population, the participation of youth in the labour force and the enrolment rate in post-secondary education.

The projection of the portfolio of loans for each regime (Guaranteed, Risk-Shared and Direct) 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 student interest payments, interest relief payments and interest accrued during the grace period and 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 the 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 2003, to which future fertility, mortality and migration assumptions are applied. The population of Canada 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.

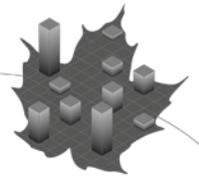
##### a) Evolution of the Labour Force

The “baby-boom” generation has and continues to exert a major influence on various aspects of society. It represents the 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 created an abundance of workers, thus increasing the unemployment rate and influencing the school-to-work transition over the last 20 years. In the 1990s, the poor labour market conditions meant that youths aged 15-24 were less likely to find work and thus, more likely to be in school than youths of previous decades.

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 80.7% in loan year 2004-05 to 83.5% in 2029-30. This implies that 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 remain low in the coming years. Hence, the annual inflation rate is assumed to be 2.3% in 2005-06 and 2.0% in 2006-07 and 2007-08. Starting in 2008-09, the rate is uniformly increased to its ultimate level of 2.5% in 2012-13. This rate of inflation is maintained for the remainder of the projection period.

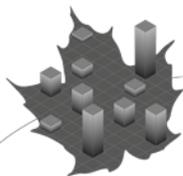
Student expenses are used in the need assessment process to determine the maximum loan amount that can be issued. These expenses include food, shelter, transportation and clothing, all of which tend to vary with consumer prices. As a result, the future anticipated rate of inflation is used to project 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 1.9% in loan year 2005-06, 3.8% in loan year 2006-07 and 3.4% in loan years 2007-08 and 2008-09. In the past, government budgetary cost pressures caused tuition fees to rise more quickly than inflation. Similar budgetary pressures are expected in the future due to the aging of population. Thus, tuition fees are indexed at the rate of inflation plus 3.0% for the long-term, in accordance with past experience.

Future student resources, including student earnings and parental contributions, are influenced by the increase of average annual earnings. The increase in average earnings is related to changes in the manpower supply in the labour force. Therefore, 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 2005-06, the real growth in average earnings is estimated to be -0.3%. After 2005-06, the real growth in average earnings increases gradually from 0.6% in 2006-07, reaching 1.2% by 2012-13. It is maintained at that level for the rest of the projection period.

## c) Cost of Borrowing

Since August 2000, students are indebted to the Government and, as a result, the Government bears the interest risk associated with the cost of borrowing for the entire duration of the loans. In general, the loan's duration is a combination of three periods. First, a student is in school and receives an interest subsidy for an average of three years. Next, the student enters a grace period of six months during which interest accrues but no payment is required. Finally, the student enters a period of repayment for the next nine and a half years. The historical 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 estimated at 1.8% in loan year 2005-06 and then increases gradually, reaching 2.7% in 2014-15. The rate remains at this level for the remainder of the projection period. The Government cost of borrowing consists of the real government cost of borrowing and the rate of inflation as summarized in Table 1.



# ACTUARIAL REPORT

## CANADA STUDENT LOANS PROGRAM

as at 31 July 2005

**Table 1 Borrowing Costs**

<b>Loan Year</b>	<b>Inflation (%)</b> (1)	<b>Real Government Cost of Borrowing (%)</b> (2)	<b>Government Cost of Borrowing (%)</b> (1) + (2)	<b>Real Prime Rate (%)</b> (3)	<b>Student Cost of Borrowing (%)</b> (1) + (3) + 250 bps
2005-06	2.3	1.8	4.1	2.8	7.6
2006-07	2.0	2.3	4.3	3.3	7.8
2007-08	2.0	2.3	4.3	3.2	7.7
2008-09	2.1	2.4	4.4	3.2	7.7
2009-10	2.2	2.4	4.6	3.1	7.8
2010-11	2.3	2.5	4.7	3.1	7.8
2011-12	2.4	2.5	4.9	3.0	7.9
2012-13	2.5	2.6	5.0	3.0	7.9
2013-14	2.5	2.6	5.1	2.9	7.9
2014-15	2.5	2.7	5.2	2.9	7.9
2015-16+	2.5	2.7	5.2	2.9	7.9

The real prime rate is set at 2.8% for 2005-06, but is projected to increase to 3.3% in 2006-07. After that, the real prime rate is projected to decrease until it reaches its ultimate rate of 2.9% in 2013-14. The student cost of borrowing, used to calculate the interest revenues and the cost of interest relief, is determined by adding the inflation rate to the real prime rate, as well as 250 basis points. The student cost of borrowing is presented in the last column of Table 1.

### 3. Provision Assumptions

As of August 2000, the CSLP is directly delivered and financed by the Government. Three provisions are established to cover future costs: bad debt – principal, bad debt – interest and debt reduction in repayment (DRR).

The provision rate for bad debt – principal remains unchanged from the last report at 14.6%. It is assumed that this rate will remain constant in the future. A comparison of the actual amounts of defaults and recoveries with the projected amounts, using the gross default and recovery rates set in the previous report, demonstrated that default and recovery rates do not require any adjustment. Thus, the provision rate for bad debt – principal is unchanged.

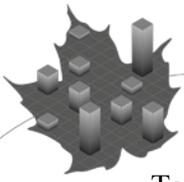
The allowance for bad debt – interest is based on the account’s recoverable status and its age since impairment or default. The interest accrued on impaired loans is considered a revenue until the loan reaches the “non-recoverable” status. To lessen the effect of changing this revenue to a loss, an allowance is created based on outstanding interest at the end of each year. The percentage of the allowance changes according to the number of years since impairment and is based on a distribution of recovery. The total allowance calculated at the end of a year less the net total allowance at the end of the previous year is charged as a provision for bad debt – interest. The provision rates for the allowance for bad debt – interest are the same as in the last report and are shown in Table 2.

The DRR provision rate remains unchanged from previous reports at 0.7% and is assumed to remain constant in the future. However, no loans from the Direct Loan Regime are eligible for DRR yet. Based on available data, interest relief (IR) take-up for Direct loans is lower than for the other regimes. Therefore, it is expected that DRR take-up will be slightly lower for Direct loans compared to the other regimes. This situation will continue to be closely monitored as more experience data becomes available.



**Table 2 Provision and Allowance Assumptions**

<b>Type of Provision</b>	<b>Assumptions</b>	
		(%)
<b>On new loans issued</b>		
Bad debt – principal		14.6
Debt reduction in repayment		<u>0.7</u>
<b>Total</b>		<b>15.3</b>
	<b>Number of Years</b>	
	<b>Since Impairment</b>	(%)
<b>On outstanding interest on recoverable impaired loans</b>		
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



# ACTUARIAL REPORT

## CANADA STUDENT LOANS PROGRAM

as at 31 July 2005

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

**Table 3 Best-estimate Assumptions**

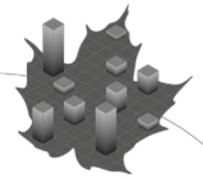
1. Total fertility rate for Canada	1.5 per woman in 2004 graded to 1.6 per woman in 2016
2. Mortality	1995-97 Life Tables for Canada with future improvements
3. Net migration rate	0.50% of the population to 2015 and 0.54% in 2020+
4. Youth participation rate (participating provinces/territory, ages 18-34)	80.7% (2004-05) 83.5% (2029-30)
5. Real wage differential	-0.3% (2005-06) 0.6% (2006-07) ⋮ 1.2% (2012-13+)
6. Inflation	2.3% (2005-06) 2.0% (2006-07) ⋮ 2.5% (2012-13+)
7. Tuition fee increases	1.9% (2005-06) 3.8% (2006-07) 3.4% (2007-08) 3.4% (2008-09) ⋮ CPI + 3.0% (2013-14+)
8. Government cost of borrowing	4.1% (2005-06) ⋮ 5.2% (2014-15+)
9. Student borrowing cost	7.6% (2005-06) ⋮ 7.9% (2011-12+)
10. Bad debt provision – principal	14.6% (2005+)
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% (2005-06+)

## 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 need 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 and post-secondary enrolment will have the largest impact on the progression of full-time students attending post-secondary institutions.



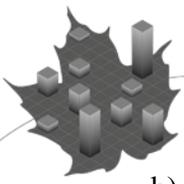
### a) Demographic Projections

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 projection of this population is a fairly good approximation since it originates from individuals born between 1970 and 2012, most of whom are already included in the population.

In the first 11 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 5,725,000 to 6,100,000 by 2015-16. In the last 14 years of the projection, the population aged 18-34 decreases to 5,828,000. Overall, as Table 4 shows, an increase of 103,000 is expected in the population aged 18-34 over the 25-year projection period.

**Table 4 Population and Post-secondary Enrolment**

<b>Loan Year</b>	<b>Population of Canada Less Québec, NWT and Nunavut (18-34) (Thousands)</b>	<b>Not Participating In Labour Force (18-34) (Thousands)</b>	<b>Students Enrolled Full-time (Thousands)</b>	<b>Increase (Thousands)</b>	<b>Growth Rate (%)</b>
2004-05	5,725	1,102	834	-	-
2005-06	5,751	1,091	827	-7.6	-0.9
2006-07	5,771	1,077	816	-10.8	-1.3
2007-08	5,810	1,075	814	-2.0	-0.2
2008-09	5,864	1,086	821	7.3	0.9
2009-10	5,919	1,092	824	2.6	0.3
2010-11	5,964	1,088	819	-4.4	-0.5
2011-12	6,003	1,084	815	-4.6	-0.6
2012-13	6,038	1,082	812	-2.8	-0.3
2013-14	6,073	1,087	814	2.4	0.3
2014-15	6,097	1,088	815	0.4	0.0
2015-16	6,100	1,077	804	-11.0	-1.3
2016-17	6,094	1,062	791	-12.5	-1.6
2017-18	6,079	1,050	780	-10.8	-1.4
2018-19	6,058	1,040	773	-7.9	-1.0
2019-20	6,028	1,023	758	-14.1	-1.8
2020-21	5,998	1,005	742	-16.3	-2.2
2021-22	5,969	994	732	-10.2	-1.4
2022-23	5,949	987	726	-6.0	-0.8
2023-24	5,934	982	722	-4.2	-0.6
2024-25	5,912	976	717	-4.3	-0.6
2025-26	5,884	969	713	-4.0	-0.6
2026-27	5,860	965	712	-1.1	-0.2
2027-28	5,842	962	713	0.7	0.1
2028-29	5,832	961	715	1.6	0.2
2029-30	5,828	959	716	1.9	0.3



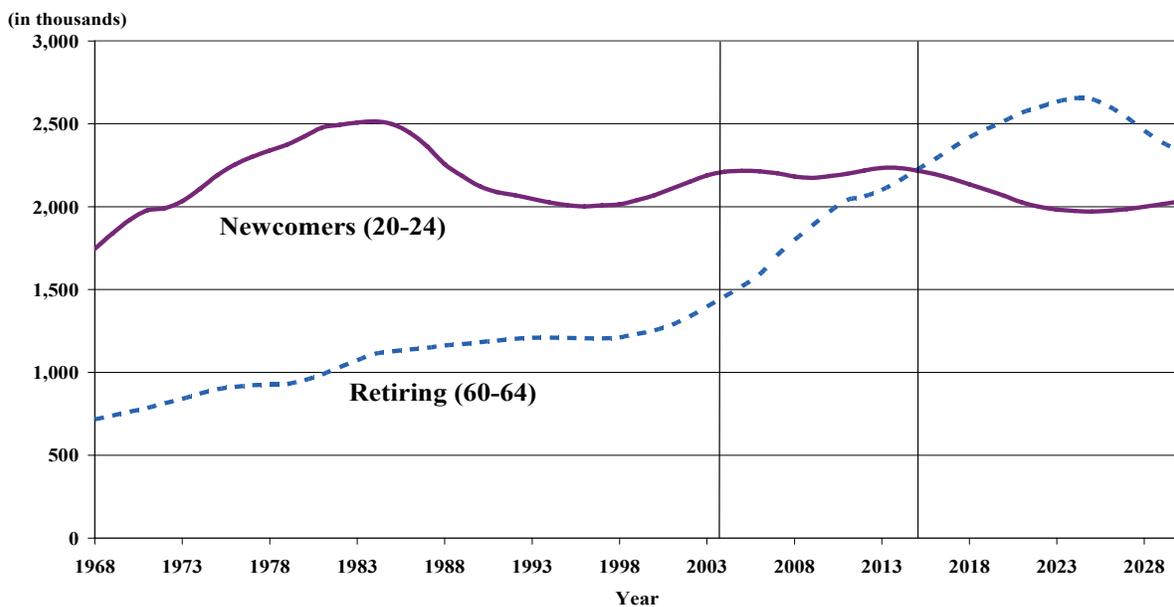
**b) Post-secondary Enrolment**

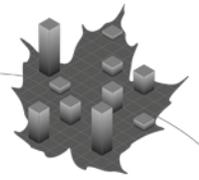
The number of students enrolled full-time in post-secondary institutions is closely linked to the evolution of the population aged 18-34 that is not participating in the labour force. Those individuals who are not participating in the labour force may be more inclined to pursue a post-secondary education. Thus, post-secondary enrolment is considered to be a subset of the population not participating in the labour force. During times when fewer jobs are available, the school to work transition period is longer, as more individuals decide to pursue post-secondary education. However, when more jobs are available, 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, caused by the low fertility rate, are expected to create strong 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 as more of the “baby-boomers” retire.

As shown in Chart 1, the number of persons retiring or in the age range 60-64 has been very low compared to the newcomers entering the labour force. This situation is expected to change radically over the next 10 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 2,219,000 persons. By 2025, the number of persons retiring (2,648,000) will surpass the number of newcomers (1,970,000) by 34%. 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 of the population aged 18-34 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.

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





In Table 4, the population not participating in the labour force is projected to decrease slightly from 1,102,000 to 1,088,000 during the first ten years of the projection, which is a decrease of only 14,000. Over the last fifteen years of the projection, the population not participating in the labour force decreases by 129,000 to reach 959,000 in loan year 2029-30. This large decrease is caused by the anticipated labour shortage and the assumption that over the last fifteen years of the projection period, the labour force participation rates of the population 18-34 will increase due to favourable labour market conditions and increased availability of work. As participation in the labour force increases, the population not participating in the labour force will, in turn, decrease.

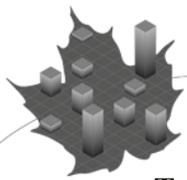
The evolution of the inactive population, those aged 18-34 not participating in the labour force, is a good indicator of the evolution of the population in post-secondary institutions. Enrolment in post-secondary institutions, as well as CSLP participation, varies between age groups. The age distribution of the CSLP shows that approximately 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.

In Table 4, the population aged 18-34 enrolled full-time in a post-secondary institution is projected to slowly decrease by 19,000 (834,000 to 815,000) during the first ten years of the projection period. Over the last fifteen years of the projection period, the number of students enrolled full-time decreases rapidly and reaches 716,000 in loan year 2029-30. This overall decrease of 99,000 students during the last fifteen years of the projection is a result of the decrease in the population aged 18-34 that is not participating in the labour force. The population aged 18-34 enrolled full-time is approximately 75% of the population not participating the labour force each year in the projection period. Thus, the significant decrease in the population not participating in the labour force, which was discussed above, results in a decrease in the population enrolled in a post-secondary institution.

## **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 Social Development (HRSD) has provided the CSLP student need assessment data for the last five loan years, which was used to project the future distributions of student need.

Not everyone enrolled in a post-secondary institution is eligible to participate in the CSLP. The need 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 expenses assessed include tuition fees, books, shelter, food and transportation. The resources assessed include student earnings, assets and parental contributions. In Budget 2006, the Government proposed a reduction to the required amount of parental contributions in order to increase eligibility to the Program. This reduction of required parental contributions is not taken into consideration for this report.



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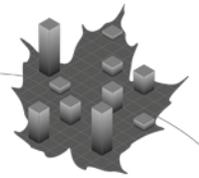
**Table 5 Average Student Need**

<b>Loan Year</b>	<b>Resources (\$) (1)</b>	<b>Tuition (\$) (2)</b>	<b>Other Expenses (\$) (3)</b>	<b>Total Expenses (\$) (2) + (3)</b>	<b>Average Student Need (\$) (2) + (3) - (1)</b>	<b>Average Student Need Increase (\$)</b>
2004-05	3,600	5,300	8,200	13,500	9,800	-
2005-06	3,700	5,400	8,900	14,200	10,500	700
2006-07	3,800	5,600	9,000	14,600	10,800	300
2007-08	3,900	5,800	9,200	15,000	11,100	300
2008-09	4,000	6,000	9,400	15,400	11,400	300
2009-10	4,100	6,200	9,600	15,800	11,600	200
2010-11	4,300	6,500	9,800	16,200	12,000	400
2011-12	4,400	6,800	10,000	16,700	12,300	300
2012-13	4,600	7,100	10,200	17,300	12,800	500
2013-14	4,700	7,500	10,400	17,900	13,200	400
2014-15	4,900	7,900	10,700	18,600	13,700	500
2015-16	5,100	8,300	10,900	19,300	14,200	500
2016-17	5,300	8,800	11,200	20,000	14,700	500
2017-18	5,500	9,300	11,500	20,800	15,300	600
2018-19	5,700	9,800	11,800	21,500	15,900	600
2019-20	5,900	10,300	12,000	22,400	16,500	600
2020-21	6,100	10,900	12,300	23,200	17,100	600
2021-22	6,300	11,500	12,600	24,100	17,800	700
2022-23	6,500	12,100	12,900	25,000	18,500	700
2023-24	6,800	12,800	13,200	26,000	19,200	700
2024-25	7,000	13,500	13,500	27,000	20,000	800
2025-26	7,300	14,200	13,900	28,100	20,800	800
2026-27	7,600	15,000	14,200	29,200	21,700	900
2027-28	7,800	15,900	14,600	30,400	22,600	900
2028-29	8,100	16,700	14,900	31,600	23,500	900
2029-30	8,400	17,600	15,300	32,900	24,500	1,000

Table 5 summarizes the three main elements of student need, as well as the average student need. The values in this table are consistent with the average values calculated from the need assessment data.

Student need is increasing on average because expenses are rising faster than resources. Tuition fees are the primary source of increases in student need and are ultimately indexed at 3.0% above inflation. However, tuition has been, on average, 4.0% above inflation over the past five years and 5.3% above inflation over the last ten years. Other expenses, which include books, shelter, food and transportation, are indexed at the rate of inflation. However, in loan year 2005-06, there is a large increase in the amount of other expenses, from \$8,200 to \$8,900, due to the inclusion of computers and computer-related costs as an eligible expense beginning in loan year 2005-06. Resources are increased at a slower pace than tuition and are ultimately indexed at 1.2% above inflation. Table 5 shows average tuition fees rising from \$5,300 in 2004-05 to \$17,600 in 2029-30. In fact, tuition fees rise from 147% of a student's available resources in 2004-05 to 210% in 2029-30.

Analysis of the need assessment data provided by HRSD has shown that the CSLP student need 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 a normal distribution and the 25 years of projected need increases, as shown in Table 5, need curves for the next 25 years were projected.

**Chart 2 CSLP Student Projected Need Curves**

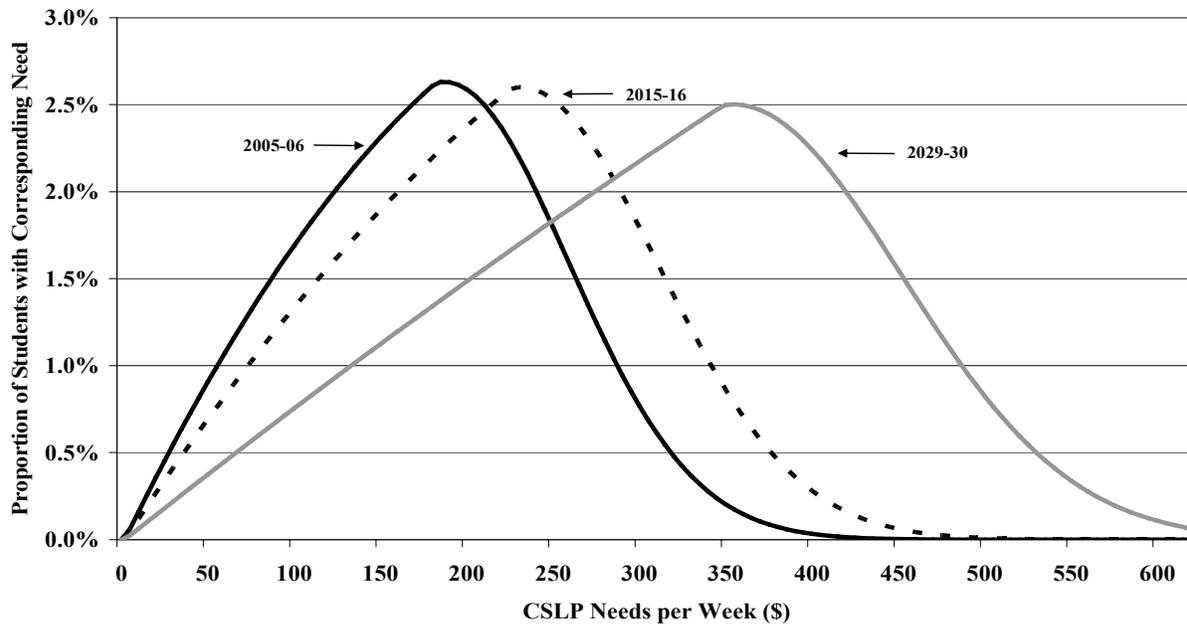
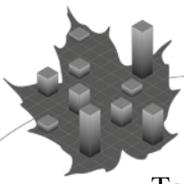


Chart 2 is a projection of the CSLP student need curves for three years during the twenty-five year projection period. The area under each successive need curve grows from year to year and thus represents the increased participation in the CSLP. Beginning with the base need curve for 2004-05, the area under the curve is 100% and the loan uptake rate, as shown in Table 6, is 40.7%. The area under the need curve for 2005-06 is 102.9% due to an increase in the proportion of students in the CSLP. Thus, the loan uptake rate for 2005-06 is 41.9% (40.7% x 1.029). The CSLP loan uptake rate is defined as the proportion of students enrolled full-time in a post-secondary institution who 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 need. Need will increase if expenses are increasing faster than resources, as is assumed. The need assessment data show that students with high need have a very low level of resources. Thus students to the right of the peak of the need curve have few resources and will see a large increase in their need. 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 student need increases, 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 need increases, participants will move towards the right of the peak.

Chart 2 shows that the proportion of participants with small loans (that is, low CSLP need), 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.



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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 need curve, gives the number of students in the CSLP. Table 6 shows that the loan uptake rate is expected to increase from 40.7% to 61.9%, adding 104,000 students to the Program. Thus, the number of students in the Program increases from 340,000 in 2004-05 to 444,000 in 2029-30.

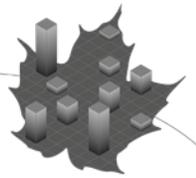
**Table 6 Loan Recipients**

Loan Year	Students Enrolled Full-time (Thousands) (1)	Loan Uptake Rate (%) (2)	Students in CSLP (Thousands) (1) x (2)	Annual Increase in CSLP Students (Thousands)	Annual Increase in CSLP Students (%)
2004-05	834	40.7	340	-	0.0
2005-06	827	41.9	346	6	1.8
2006-07	816	42.5	347	1	0.2
2007-08	814	42.7	348	1	0.3
2008-09	821	43.0	353	5	1.4
2009-10	824	43.6	359	6	1.8
2010-11	819	44.2	362	3	0.9
2011-12	815	44.9	366	4	1.0
2012-13	812	45.6	370	4	1.2
2013-14	814	46.5	378	8	2.2
2014-15	815	47.2	384	6	1.6
2015-16	804	48.0	386	1	0.4
2016-17	791	48.7	385	0	-0.1
2017-18	780	49.6	387	2	0.5
2018-19	773	50.4	390	2	0.6
2019-20	758	51.3	389	-1	-0.1
2020-21	742	52.1	387	-2	-0.6
2021-22	732	53.1	388	2	0.4
2022-23	726	53.8	391	2	0.6
2023-24	722	54.8	395	5	1.2
2024-25	717	55.6	399	3	0.9
2025-26	713	56.6	404	5	1.3
2026-27	712	57.9	413	9	2.1
2027-28	713	59.3	423	10	2.5
2028-29	715	60.6	433	10	2.4
2029-30	716	61.9	444	11	2.5

### 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 increasing 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 \$9,800 in 2004-05 to \$24,500 in 2029-30. Although the increasing student need causes more students to become

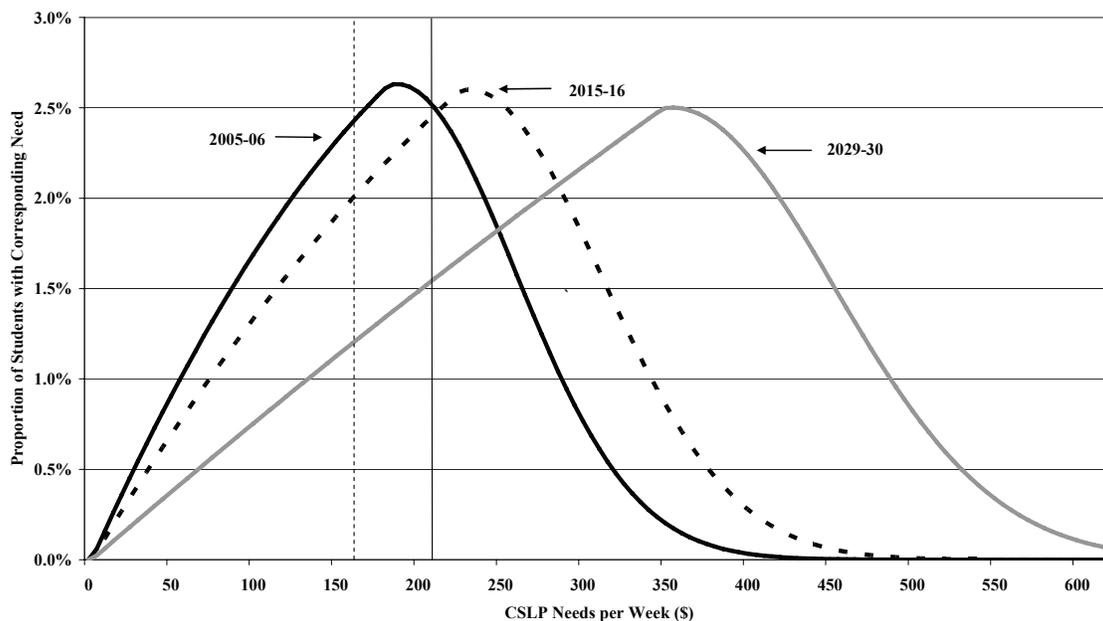


eligible to receive a loan, loans to newly eligible individuals are smaller in size and therefore slow the growth of the average loan size. This indirectly contributes to moderating the average loan growth over the 25-year period as an estimated 104,000 additional students will participate in the CSLP.

Secondly, in loan year 2005-06, the loan limit was increased by \$45 per week from \$165 to \$210. The loan limit will be held constant thereafter. A large increase in loans issued is projected at this point as students previously at the limit will be eligible for a larger loan, up to the new limit. Since the loan limit has increased, fewer students will be eligible for a loan the size of the new limit. Thus, the percentage of students at the limit will be lower than if the limit had not been increased.

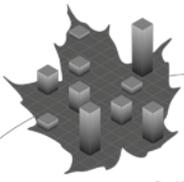
Chart 3 shows the same projected need curves from Chart 2, except that a vertical line has been added at the assessed need of \$165 and \$210 per week to represent the CSLP loan limit. Anyone whose need falls to the right of this line will receive a loan equal to the limit. Those whose need does not exceed the loan limit are eligible to receive a loan amount equal to their entire need. In loan year 2005-06, the CSLP loan limit was increased from \$165 to \$210 per week. Chart 3 shows that in loan year 2005-06, the proportion of students at the loan limit is projected to decrease significantly when the loan limit is increased.

**Chart 3 CSLP Student Need Curves and Loan Limit**



In 2004-05, with a loan limit of \$165 per week, the percentage of students at the limit was 52.9%. When the loan limit is increased to \$210 per week in 2005-06, the percentage of students at the limit is expected to drop to 33.6%. In Table 7, the percentage of students at the limit increases from 33.6% in 2005-06 to 78.2% in 2029-30. These students will not have an increase in loan size despite increasing cost pressures. In fact, in approximately ten years, the situation will be the same as today with just over half of all CSLP students at the loan limit. At that time, the loan limit may need to be revisited.

After 2005-06, the \$210 loan limit remains the same and slows the growth of new loans issued, as students with a need that is already at or above the loan limit cannot further increase the size of their loan. Further, Chart 3 supports the results in Table 7 that the proportion of students with



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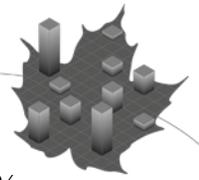
a need exceeding the loan limit is increasing during the projection period. The loan limit restricts the growth in new loans issued. Even though student need is increasing rapidly, the loan limit is not changing. Thus, new loans issued will not increase as quickly as CSLP student need.

**Table 7 Increase in New Loans Issued**

Loan Year	Average Student Need (\$)	Increase (%)	% of Students at Limit	New Loans Issued (\$ million)	Increase (%)	Students in CSLP (Thousands)	Increase (%)	Average Loan Size (\$)	Increase (%)
	(1)	(2)	(2)	(3)	(4)	(4)	(4)	(3) / (4)	(5)
2004-05	9,825	0.0	52.9	1,633	-	340	-	4,807	-
2005-06	10,506	6.9	33.6	1,875	14.8	346	1.8	5,417	12.7
2006-07	10,831	3.1	35.6	1,900	1.4	347	0.2	5,481	1.2
2007-08	11,090	2.4	36.8	1,920	1.0	348	0.3	5,521	0.7
2008-09	11,352	2.4	38.1	1,961	2.1	353	1.4	5,560	0.7
2009-10	11,645	2.6	39.5	2,010	2.5	359	1.8	5,599	0.7
2010-11	11,974	2.8	41.4	2,048	1.9	362	0.9	5,655	1.0
2011-12	12,342	3.1	43.2	2,086	1.8	366	1.0	5,702	0.8
2012-13	12,754	3.3	45.4	2,133	2.3	370	1.2	5,764	1.1
2013-14	13,217	3.6	47.8	2,205	3.4	378	2.2	5,827	1.1
2014-15	13,703	3.7	50.1	2,264	2.7	384	1.6	5,891	1.1
2015-16	14,211	3.7	52.3	2,294	1.3	386	0.4	5,946	0.9
2016-17	14,744	3.7	54.4	2,314	0.9	385	-0.1	6,003	1.0
2017-18	15,300	3.8	56.5	2,347	1.4	387	0.5	6,059	0.9
2018-19	15,883	3.8	58.7	2,383	1.5	390	0.6	6,116	0.9
2019-20	16,494	3.8	60.6	2,398	0.6	389	-0.1	6,164	0.8
2020-21	17,133	3.9	62.7	2,406	0.3	387	-0.6	6,221	0.9
2021-22	17,803	3.9	64.6	2,434	1.2	388	0.4	6,268	0.8
2022-23	18,505	3.9	66.5	2,467	1.3	391	0.6	6,317	0.8
2023-24	19,240	4.0	68.3	2,515	2.0	395	1.2	6,363	0.7
2024-25	20,011	4.0	70.1	2,556	1.6	399	0.9	6,410	0.7
2025-26	20,819	4.0	71.8	2,607	2.0	404	1.3	6,453	0.7
2026-27	21,667	4.1	73.5	2,679	2.8	413	2.1	6,494	0.6
2027-28	22,556	4.1	75.2	2,762	3.1	423	2.5	6,536	0.6
2028-29	23,489	4.1	76.7	2,845	3.0	433	2.4	6,573	0.6
2029-30	24,468	4.2	78.2	2,934	3.1	444	2.5	6,611	0.6

Table 7 shows the increase in new loans issued per loan year over the 25-year projection period. Overall, the total new loans issued increase from \$1,633 million in 2004-05 to \$2,934 million in 2029-30, resulting in an average increase of 2.4% per year. The ratio of new loans issued to 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.

Table 7 shows the year-to-year growth of total new loans issued during the projection period. New loans issued increase by 14.8% in loan year 2005-06 due to increasing the loan limit. Based on preliminary data for loan year 2005-06, new loans issued are approximately 15% higher than loans issued in 2004-05. This is consistent with the projections made in this report. The growth rate of the average loan size is moderated due to the constant loan limit from 2005-06 onward. Over the 25-year projection period, the growth in the amount of new loans is, on average, 2.4% a year. This is mainly due to the large increase in average student need (\$9,800 to \$24,500 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 attributed to two factors: a 1.1% average annual increase in the number of students in the CSLP and a 1.3% average annual increase in the average loan size.

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.

A sensitivity test demonstrating the effect of annually indexing the limit to inflation is included in Appendix 4. 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 is fully subsidized by the Government for full-time students in the CSLP. The loans in repayment consist of loans consolidated by students with financial institutions (or the Government) which are still outstanding.

### 1. Guaranteed and Risk-Shared Portfolios

The Guaranteed and 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 attending post-secondary institutions or repaying their loans. Table 8 presents the projections of the loans, separately for the Guaranteed and Risk-Shared regimes, as well as the projection of Risk-Shared impaired loans bought back by the Government. The projection of Risk-Shared impaired loans is necessary to determine when the limit on the aggregate amount of outstanding loans, imposed by the *Canada Student Financial Assistance Act* (CSFAA), will be reached.

Table 8 shows that the Guaranteed Regime is gradually being phased out over the next 11 years, while loans in the Risk-Shared Regime will take an extra nine years before being completely phased out.

As at July 2005, the total impaired loans coming from the Guaranteed and Risk-Shared regimes that are owned by the Government amount to approximately \$1.1 billion (principal and interest) and are subject to possible future recoveries. The Guaranteed impaired loans are not included in the projection of the Guaranteed portfolio in Table 8. The Government sets up a separate allowance in the Public Accounts for those loan guarantees and for Risk-Shared loans in default. This procedure is not shown in this report.



**Table 8 Guaranteed and Risk-Shared Regimes Portfolios (\$ million)**

As at 31 July	Guaranteed			Risk-Shared			
	Loans In-study	Loans in Repayment	Total	Loans In-study	Loans in Repayment	Impaired Loans (bought back)	Total
2005	36	258	294	365	3,469	252	4,086
2006	22	179	201	271	2,880	254	3,405
2007	10	128	138	203	2,282	242	2,726
2008	-	92	92	146	1,737	220	2,104
2009	-	62	62	103	1,264	198	1,565
2010	-	40	40	65	895	175	1,135
2011	-	26	26	35	617	149	801
2012	-	17	17	11	431	121	563
2013	-	10	10	-	299	93	392
2014	-	6	6	-	200	67	267
2015	-	3	3	-	130	46	176
2016	-	1	1	-	85	31	116
2017	-	-	-	-	55	21	76
2018	-	-	-	-	34	14	48
2019	-	-	-	-	20	9	29
2020	-	-	-	-	11	6	17
2021	-	-	-	-	6	3	9
2022	-	-	-	-	3	2	5
2023	-	-	-	-	2	1	3
2024	-	-	-	-	2	0	2
2025	-	-	-	-	1	0	2
2026	-	-	-	-	-	-	-

**2. Direct Loan Portfolio and Allowances**

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 have stopped making payments, allowances for bad debt (principal and interest separately) to cover the future risk of default, net of recoveries, from loans disbursed and the 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. The projections use the consolidation, default and recovery distributions discussed in Appendix 3. The rates and distributions of defaults and recoveries for the Direct Loan Regime are the same as in the previous report. In order to establish the gross default rate used for the Direct Loan Regime, the amounts of future defaulted loans were extrapolated using known defaults for the first four years of the Direct Loan Regime and the default distribution for Guaranteed loans. A Direct loan is considered impaired when it is returned to the Government, usually after 270 days in arrears. The gross default rate, set at 40.7%, is then adjusted to take into account the pre-authorized



payment program which was not available for a certain period and the rebalancing of the default rate between students from public and private institutions based on long-term consolidation proportions.

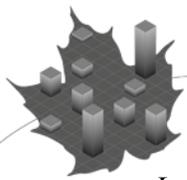
After these two adjustments, the gross default rate decreases to 35.4%. The recovery rate is set at 60% and the corresponding net default rate is 14.2%. The validation of the net default rate is shown in Appendix 3.

**Table 9 Direct Loan Portfolio and Allowances (\$ million)**

As at 31 July	Loans In-study	Loans in Repayment	Impaired Loans	Total	Allowances for		
					Bad Debt Principal	Bad Debt Interest	DRR
2005	3,480	2,647	674	6,802	1,155	28	55
2006	3,897	3,238	957	8,092	1,429	61	69
2007	4,164	3,843	1,256	9,263	1,705	110	77
2008	4,360	4,367	1,568	10,295	1,975	175	84
2009	4,524	4,806	1,877	11,208	2,236	252	90
2010	4,675	5,165	2,174	12,014	2,487	341	94
2011	4,804	5,518	2,451	12,772	2,722	438	98
2012	4,919	5,758	2,705	13,381	2,942	540	102
2013	5,033	5,964	2,935	13,932	3,147	644	104
2014	5,168	6,148	3,141	14,456	3,342	746	107
2015	5,306	6,319	3,324	14,948	3,525	843	110
2016	5,417	6,484	3,486	15,388	3,694	933	112
2017	5,506	6,637	3,636	15,779	3,848	1,017	114
2018	5,593	6,770	3,774	16,137	3,992	1,092	116
2019	5,681	6,894	3,899	16,474	4,128	1,161	118
2020	5,749	7,017	4,013	16,780	4,253	1,222	119
2021	5,799	7,125	4,118	17,043	4,368	1,278	120
2022	5,859	7,217	4,214	17,291	4,477	1,329	122
2023	5,926	7,303	4,301	17,530	4,582	1,375	123
2024	6,013	7,387	4,380	17,780	4,684	1,417	124
2025	6,102	7,478	4,454	18,033	4,785	1,455	125
2026	6,205	7,576	4,523	18,304	4,885	1,489	126
2027	6,335	7,687	4,592	18,614	4,990	1,521	128
2028	6,492	7,817	4,660	18,969	5,100	1,550	130
2029	6,665	7,970	4,732	19,367	5,217	1,577	132
2030	6,853	8,146	4,810	19,810	5,342	1,603	135

As at 31 July 2005, the outstanding Direct Loan portfolio is \$6.8 billion and is derived from new loans issued during loan years 2000-01 to 2004-05 (\$7.9 billion), plus the interest accrued during the grace period for these five years, minus repayments. The impaired loans are part of the assets and are included in the Direct Loan portfolio projection. The portfolio increases rapidly to reach \$12.0 billion within the next five years. By the end of loan year 2029-30, the portfolio reaches \$19.8 billion.

Compared to the evaluation as at 31 July 2004, the value of the portfolio of loans in-study at the end of the projection period is slightly higher, while the value of the portfolio of loans in repayment is significantly lower and the amount of impaired loans is slightly higher. The main reasons for these differences are summarized as follows.



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*Loans in-study:* In this report, based on the experience of Direct loans, a new consolidation distribution is used that reflects loans consolidating at a slower pace. As a consequence, the amount of loans in-study increases. This is counterbalanced, in part, by prepayments, which are payments that borrowers make while in school or during the grace period before the consolidation date. Prepayments are introduced in the valuation for the first time.

*Loans in repayment:* The report also incorporated accelerated payments which are payments made by borrowers that exceed the scheduled payment based on a 9.5-year repayment period. The lower amount of consolidations over the projection period, together with the accelerated payments, result in a significantly lower amount of loans in repayment at the end of the projection period compared to the previous report.

*Impaired Loans:* Intuitively, based on the elements described above, the projected portfolio of impaired loans at the end of the projection period should be lower than the impaired loans portfolio from the previous report. The write-off distribution used in this report is extended to 25 years including a 4-year lag. The new distribution defers the write-offs since no write-offs have occurred since the inception of the Direct Loan Regime, thus resulting in a higher amount of loans in default compared to the previous report.

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 1 August	Impaired Loans	Collected Loans	Write-offs	Balance 31 July	Allowance 1 August	New Provision*	Write-offs	Allowance 31 July
	(1)	(2)	(3)	(4)	(1 + 2) – (3 + 4)	(1)	(2)	(3)	(1 + 2) – (3)
2004-05	407	349	83	-	674	917	238	-	1,155
2005-06	674	396	114	0	957	1,155	274	0	1,429
2006-07	957	444	143	1	1,256	1,429	277	1	1,705
2007-08	1,256	496	173	10	1,568	1,705	280	10	1,975
2008-09	1,568	538	204	25	1,877	1,975	286	25	2,236
2009-10	1,877	572	232	43	2,174	2,236	294	43	2,487
2010-11	2,174	598	258	63	2,451	2,487	299	63	2,722
2011-12	2,451	622	283	85	2,705	2,722	305	85	2,942
2012-13	2,705	642	305	106	2,935	2,942	311	106	3,147
2013-14	2,935	660	327	127	3,141	3,147	322	127	3,342
2014-15	3,141	677	347	148	3,324	3,342	331	148	3,525
2015-16	3,324	696	367	166	3,486	3,525	335	166	3,694
2016-17	3,486	714	381	183	3,636	3,694	338	183	3,848
2017-18	3,636	731	394	199	3,774	3,848	343	199	3,992
2018-19	3,774	744	407	213	3,899	3,992	348	213	4,128
2019-20	3,899	757	418	225	4,013	4,128	350	225	4,253
2020-21	4,013	769	428	236	4,118	4,253	351	236	4,368
2021-22	4,118	779	437	246	4,214	4,368	355	246	4,477
2022-23	4,214	788	445	256	4,301	4,477	360	256	4,582
2023-24	4,301	796	452	265	4,380	4,582	367	265	4,684
2024-25	4,380	805	459	273	4,454	4,684	373	273	4,785
2025-26	4,454	816	466	280	4,523	4,785	381	280	4,885
2026-27	4,523	828	473	287	4,592	4,885	391	287	4,990
2027-28	4,592	842	480	293	4,660	4,990	403	293	5,100
2028-29	4,660	858	488	298	4,732	5,100	415	298	5,217
2029-30	4,732	878	496	303	4,810	5,217	428	303	5,342

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

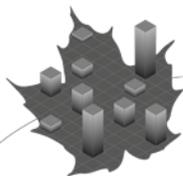


The allowance for bad debt – principal is reduced when there is a write-off. Contrary to the assumptions of the previous actuarial report, there have been no write-offs of Direct loans since the inception of the Direct Loan Regime. This has increased the value of the defaulted loans, which are included in the \$15 billion limit on the aggregate amount of outstanding loans. The assumption used for write-offs is a 21-year distribution based on the limited recent experience of the Guaranteed Loan Regime. Since no write-offs have occurred since the inception of the Direct Loan Regime, the distribution begins in the fifth year since impairment, to take the statute of limitations, among other things, into consideration.

As shown in Table 10, the allowance for bad debt – principal grows rapidly and reaches \$5.3 billion in 2029-30. As a percentage of the total Direct Loan portfolio, the allowance evolves from 17% in 2004-05 to stabilize at approximately 27% over the long-term.

In accordance with the collection practice, interest accrues on impaired loans until the loans reach a “non-recoverable” status. A provision is set to cover the risk that such accrued interest will never be recovered. The assumption for the distribution of loans that reach a “non-recoverable” status is shown in Appendix 3, along with distributions for write-offs and recoveries. The assumption for write-offs is the same as for principal and the distribution for recovery of interest is based on the distribution of the recovery of principal.

The allowance for bad debt – interest on recoverable accounts is determined using the outstanding interest and a variable provision rate for each year since impairment. The provision rate is set at 20% for defaulted interest in the year of impairment and increases each year thereafter using the recovery distribution as shown in Appendix 3. Under this methodology, the increasing provision rate reflects the fact that the difficulty of recovering defaults increases as the time since impairment increases. The allowance on non-recoverable accounts is 100% and the interest on these accounts is written off over a 21-year period, starting in the fifth year after the impairment occurs. The variation in allowance for a given year and the remaining allowance of the previous year is charged as part of the annual expense. In the Public Accounts, the Department of Human Resources and Social Development is using this methodology to calculate the allowance and annual expense as at March 31<sup>st</sup> of each year.



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

<b>Loan Year</b>	<b>Allowance 1 August</b>	<b>Write-Off</b>	<b>Allowance 31 July</b>	<b>Yearly Expense</b>
	(1)	(2)	(3)	(3) – (1 – 2)
2004-05	10	-	28	17
2005-06	28	0	61	33
2006-07	61	0	110	50
2007-08	110	1	175	66
2008-09	175	5	252	82
2009-10	252	10	341	99
2010-11	341	18	438	115
2011-12	438	27	540	130
2012-13	540	39	644	143
2013-14	644	52	746	154
2014-15	746	66	843	163
2015-16	843	80	933	171
2016-17	933	94	1,017	178
2017-18	1,017	108	1,092	184
2018-19	1,092	121	1,161	189
2019-20	1,161	132	1,222	194
2020-21	1,222	143	1,278	199
2021-22	1,278	152	1,329	203
2022-23	1,329	161	1,375	207
2023-24	1,375	169	1,417	210
2024-25	1,417	176	1,455	214
2025-26	1,455	182	1,489	217
2026-27	1,489	189	1,521	220
2027-28	1,521	194	1,550	223
2028-29	1,550	199	1,577	226
2029-30	1,577	203	1,603	229



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

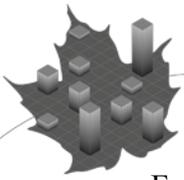
**Table 12 Allowance for Debt Reduction in Repayment (\$ million)**

Loan Year	Allowance 1 August (1)	Provision* (2)	DRR Payment (3)	Allowance 31 July (1) + (2) - (3)
2004-05	44	11	-	55
2005-06	55	13	-	69
2006-07	69	13	4	77
2007-08	77	13	7	84
2008-09	84	14	8	90
2009-10	90	14	9	94
2010-11	94	14	10	98
2011-12	98	15	11	102
2012-13	102	15	12	104
2013-14	104	15	13	107
2014-15	107	16	13	110
2015-16	110	16	14	112
2016-17	112	16	14	114
2017-18	114	16	14	116
2018-19	116	17	15	118
2019-20	118	17	15	119
2020-21	119	17	16	120
2021-22	120	17	16	122
2022-23	122	17	16	123
2023-24	123	18	17	124
2024-25	124	18	17	125
2025-26	125	18	17	126
2026-27	126	19	17	128
2027-28	128	19	17	130
2028-29	130	20	17	132
2029-30	132	21	18	135

\* 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 remains unchanged at 0.7%. In loan year 2004-05, the DRR payments for the Guaranteed and Risk-Shared regimes were significantly higher than the previous year. However, the data indicates that DRR payments for loan year 2005-06 will not reach the same level. None of the loans issued under the Direct Loan Regime are eligible for DRR yet. However, it is anticipated that DRR costs will be lower for Direct loans than for loans issued under the previous regimes due to lower IR take-up under the Direct Loan Regime. The first loan year that a Direct loan borrower may apply for DRR is 2005-06. The first significant DRR cost is projected to be \$4 million in 2006-07. If actual DRR costs are higher than projected, then the provision rate will likely have to be raised. This situation will continue to be monitored and examined as more experience data becomes available for the next report.

The maximum reductions in each of the three instalments of DRR are \$10,000, \$10,000 and \$6,000.



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For comparison purposes, Table 13 shows the Direct Loan portfolio in 2005 constant dollars. Starting in loan year 2017-18, the portfolio decreases because the assumed inflation rate is higher than the annual growth of the portfolio in Table 9.

**Table 13 Direct Loan Portfolio and Allowances (in millions of 2005 constant dollars)<sup>1</sup>**

As at 31 July	Loans In-study	Loans in Repayment	Impaired Loans	Total	Allowances for		
					Bad Debt Principal	Bad Debt Interest	DRR
2005	3,480	2,647	674	6,802	1,155	28	55
2006	3,810	3,166	935	7,911	1,397	60	67
2007	3,991	3,683	1,204	8,878	1,634	106	74
2008	4,097	4,103	1,474	9,674	1,856	164	79
2009	4,168	4,427	1,730	10,325	2,060	232	83
2010	4,218	4,660	1,962	10,840	2,244	308	85
2011	4,241	4,872	2,164	11,276	2,403	387	87
2012	4,245	4,969	2,334	11,548	2,539	466	88
2013	4,241	5,026	2,474	11,741	2,653	543	88
2014	4,249	5,055	2,582	11,886	2,748	613	88
2015	4,252	5,064	2,663	11,979	2,825	675	88
2016	4,227	5,060	2,721	12,008	2,882	728	87
2017	4,183	5,043	2,763	11,989	2,924	773	87
2018	4,138	5,008	2,792	11,939	2,954	808	86
2019	4,093	4,966	2,809	11,867	2,974	836	85
2020	4,033	4,922	2,815	11,770	2,983	858	84
2021	3,961	4,867	2,813	11,641	2,983	873	82
2022	3,897	4,800	2,803	11,499	2,978	884	81
2023	3,838	4,729	2,785	11,352	2,967	891	79
2024	3,791	4,658	2,762	11,211	2,954	893	78
2025	3,746	4,591	2,734	11,072	2,938	893	77
2026	3,709	4,529	2,704	10,943	2,921	890	75
2027	3,688	4,474	2,673	10,835	2,904	885	74
2028	3,680	4,431	2,641	10,752	2,891	878	74
2029	3,678	4,399	2,612	10,689	2,879	870	73
2030	3,683	4,378	2,585	10,646	2,871	861	73

<sup>1</sup> For a given year, the value in 2005 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 2005.

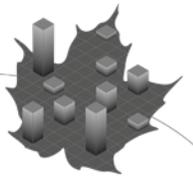
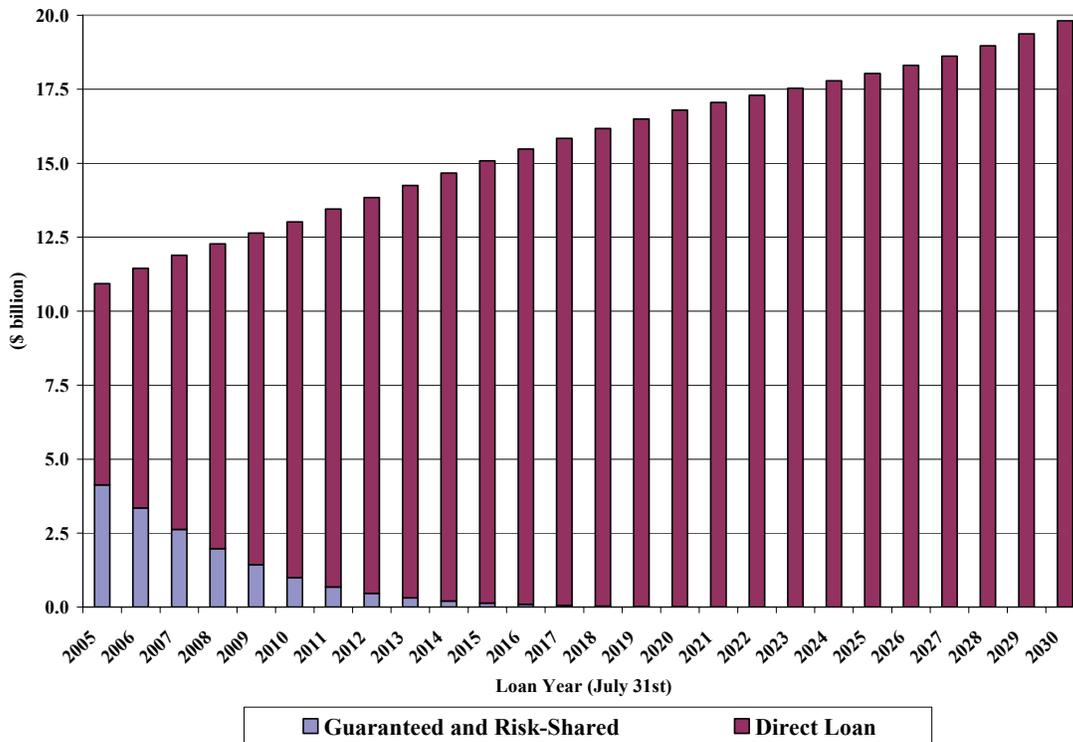
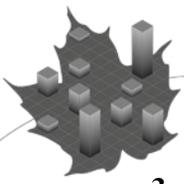


Chart 4 shows a projection of the loan portfolio split between the Direct Loan, Guaranteed and Risk-Shared regimes. Guaranteed and Risk-Shared loans are phased-out over time.

**Chart 4 Projection of the Loan Portfolios**





**3. Limit on Aggregate Amount of Outstanding Loans**

The CSFAA imposes a limit on the aggregate amount of outstanding loans in the CSLP. The current limit, in section 13 of the CSFAA, is set at \$15 billion and was increased from the previous \$5 billion ceiling through an amendment to the CSFAA in 2000. The CSFAA applies to the Risk-Shared and Direct Loan regimes. The aggregate amount of outstanding loans is the principal portion of all loans disbursed and not yet repaid, which consists of the total principal amounts of loans in-study, loans in repayment and impaired loans. Table 14 presents the projections of the aggregate amount of outstanding Risk-Shared and Direct loans in the CSLP.

As of 31 July 2005, the aggregate amount of outstanding Risk-Shared and Direct loans is \$11 billion. This projection shows that the \$15 billion limit would be reached in loan year 2014-15.

**Table 14 Aggregate Amount of Outstanding Risk-Shared and Direct Loans (\$ million)**

As at 31 July	Total of Risk-Shared Loans	Total of Direct Loans	Total
2005	4,086	6,802	10,888
2006	3,405	8,092	11,497
2007	2,726	9,263	11,990
2008	2,104	10,295	12,399
2009	1,565	11,208	12,773
2010	1,135	12,014	13,148
2011	801	12,772	13,573
2012	563	13,381	13,944
2013	392	13,932	14,323
2014	267	14,456	14,723
2015	176	14,948	15,124
2016	116	15,388	15,505
2017	76	15,779	15,855
2018	48	16,137	16,185
2019	29	16,474	16,503
2020	17	16,780	16,797
2021	9	17,043	17,052
2022	5	17,291	17,296
2023	3	17,530	17,533
2024	2	17,780	17,782
2025	2	18,033	18,035
2026	0	18,304	18,304
2027	0	18,614	18,614
2028	0	18,969	18,969
2029	0	19,367	19,367
2030	0	19,810	19,810



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

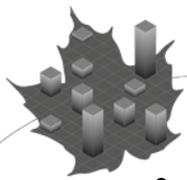
### 1. Student Related Expenses

The most important expense of the CSLP is 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 Canada Study Grants support students directly rather than assisting them in the form of loans. Following the amendment to the CSFAA, Canada Access Grants, as described in Appendix 1, are included in this cost starting in loan year 2005-06.

**Table 15 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		
2004-05	149.0	33.6	11.4	16.0	48.1	36.0	73.0	367.2
2005-06	160.2	47.1	13.1	14.3	36.0	25.6	112.9	409.2
2006-07	178.2	55.6	13.3	10.6	20.7	18.6	114.9	412.0
2007-08	188.8	60.6	13.4	7.3	11.9	11.3	116.9	410.2
2008-09	200.8	65.1	13.7	5.0	7.0	6.1	119.3	417.0
2009-10	214.5	69.1	14.1	3.1	4.2	3.9	122.0	431.0
2010-11	227.6	72.6	14.3	1.6	2.7	1.8	124.6	445.3
2011-12	240.4	75.7	14.6	0.6	1.7	1.0	127.4	461.3
2012-13	253.5	78.4	14.9	-	1.2	0.6	130.4	479.1
2013-14	265.1	80.5	15.4	-	0.7	0.4	134.0	496.2
2014-15	274.8	82.1	15.9	-	0.4	0.3	137.5	510.9
2015-16	281.7	84.5	16.1	-	0.2	0.3	140.4	523.1
2016-17	286.3	86.6	16.2	-	0.1	0.2	143.1	532.4
2017-18	290.9	88.4	16.4	-	-	0.1	146.2	542.0
2018-19	295.4	90.1	16.7	-	-	-	149.4	551.6
2019-20	299.0	91.6	16.8	-	-	-	152.2	559.5
2020-21	301.6	92.9	16.8	-	-	-	154.9	566.3
2021-22	304.7	94.1	17.0	-	-	-	158.2	573.9
2022-23	308.2	95.1	17.3	-	-	-	161.5	582.1
2023-24	312.7	96.1	17.6	-	-	-	165.3	591.7
2024-25	317.3	97.3	17.9	-	-	-	169.0	601.5
2025-26	322.7	98.6	18.3	-	-	-	173.0	612.5
2026-27	329.4	100.1	18.8	-	-	-	177.4	625.7
2027-28	337.6	101.9	19.3	-	-	-	182.2	641.0
2028-29	346.6	104.0	19.9	-	-	-	187.0	657.5
2029-30	356.4	106.4	20.5	-	-	-	192.1	675.4

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



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### 2. Program Risk Expenses

Another expense for the Government is the risk involved in disbursing loans to students. Specifically, the risk of loan default and the risk of loans being forgiven upon a student's death or disability are included in this section.

**Table 16 Risks to the Government (\$ million)**

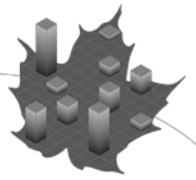
Loan Year	Direct Loan		Risk-Shared			Guaranteed	Loans Forgiven	Total
	Provisions for Bad Debt Principal	Interest	Risk Premium	Put-back Fees	Refunds to FIs	Claims for Impaired Loans		
2004-05	238.5	17.4	5.7	2.4	2.9	18.0	11.4	296.3
2005-06	273.7	33.2	4.7	2.4	3.4	11.8	19.3	348.5
2006-07	277.4	49.6	3.4	2.3	3.5	8.5	15.1	359.8
2007-08	280.3	65.8	2.8	2.1	3.0	6.6	15.6	376.2
2008-09	286.3	82.3	2.2	1.8	2.7	5.1	16.2	396.5
2009-10	293.5	98.8	1.9	1.4	2.5	2.5	16.9	417.5
2010-11	299.0	114.7	1.5	0.9	2.3	1.2	17.8	437.4
2011-12	304.6	129.5	1.2	0.6	2.1	0.5	18.6	457.0
2012-13	311.4	143.1	0.6	0.4	1.7	0.3	19.3	476.8
2013-14	321.9	154.2	-	0.3	1.3	0.1	20.0	497.9
2014-15	330.6	162.9	-	0.2	0.9	0.1	20.8	515.4
2015-16	335.0	171.2	-	0.1	0.6	0.0	21.4	528.3
2016-17	337.8	177.8	-	0.1	0.4	-	21.9	538.1
2017-18	342.7	183.6	-	-	0.3	-	22.5	549.1
2018-19	347.9	189.1	-	-	0.2	-	23.0	560.2
2019-20	350.1	194.0	-	-	0.1	-	23.4	567.7
2020-21	351.2	198.7	-	-	0.1	-	23.8	573.8
2021-22	355.4	202.9	-	-	0.0	-	24.2	582.6
2022-23	360.2	206.9	-	-	-	-	24.5	591.6
2023-24	367.2	210.5	-	-	-	-	24.8	602.6
2024-25	373.2	213.8	-	-	-	-	25.2	612.1
2025-26	380.7	216.9	-	-	-	-	25.6	623.1
2026-27	391.2	219.9	-	-	-	-	26.0	637.0
2027-28	403.3	222.9	-	-	-	-	26.5	652.7
2028-29	415.4	226.0	-	-	-	-	27.0	668.4
2029-30	428.4	229.3	-	-	-	-	27.6	685.2

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 for which provisions for loan guarantees and 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 sell. 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 a revenue in Table 18. According to the agreement, amounts 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.

There has been an amendment to the *Canada Student Financial Assistance Act* (CSFAA) regarding loans forgiven. Section 10.1 has been added in order to extend eligibility for loan forgiveness in the event that a borrower dies during the period of repayment. The loan forgiveness following death was already applied to loans in-study under Section 10 and is now applied to loans in repayment and impaired loans. Since June 2005, death is treated the same way as permanent disability. Loans forgiven in loan year 2005-06 include a retroactive amount that corresponds to borrowers who died before the change to the CSFAA, since the remaining balance of those student loans has been forgiven.



# ACTUARIAL REPORT

## CANADA STUDENT LOANS PROGRAM

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### 3. Other Expenses

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.

The administration expenses include the fees paid to provinces, the recovery costs of impaired loans for the three regimes and general administration, which are the expenses incurred by the departments involved and fees paid to service providers.

**Table 17 Summary of Expenses (\$ million)**

Loan Year	Student Related Expenses	Risks to the Government	Alternative Payments*	Administration			Total Expenses
				Fees Paid to Provinces	Recovery Cost	General	
2004-05	367.2	296.3	152	8.3	14.8	112.5	951.6
2005-06	409.2	348.5	161	8.5	17.2	123.4	1,067.8
2006-07	412.0	359.8	150	8.7	19.6	123.0	1,073.0
2007-08	410.2	376.2	146	8.9	22.1	121.7	1,085.0
2008-09	417.0	396.5	145	9.2	24.7	125.3	1,117.2
2009-10	431.0	417.5	145	9.5	26.9	129.2	1,158.7
2010-11	445.3	437.4	145	9.8	29.1	133.5	1,200.5
2011-12	461.3	457.0	148	10.1	31.4	138.3	1,245.8
2012-13	479.1	476.8	155	10.5	33.9	143.4	1,298.8
2013-14	496.2	498.0	160	10.9	36.4	148.7	1,350.0
2014-15	510.9	515.4	164	11.3	38.8	154.3	1,394.8
2015-16	523.1	528.3	167	11.7	41.3	160.0	1,431.9
2016-17	532.4	538.1	168	12.2	43.0	166.0	1,459.5
2017-18	542.0	549.1	168	12.6	44.6	172.2	1,488.0
2018-19	551.6	560.2	165	13.1	46.0	178.6	1,514.9
2019-20	559.5	567.7	164	13.6	47.4	185.3	1,537.9
2020-21	566.3	573.8	164	14.1	48.7	192.2	1,558.9
2021-22	573.9	582.6	164	14.6	49.8	199.3	1,584.2
2022-23	582.1	591.6	164	15.2	50.7	206.8	1,610.6
2023-24	591.7	602.6	165	15.7	51.6	214.5	1,640.9
2024-25	601.5	612.1	167	16.3	52.5	222.5	1,671.7
2025-26	612.5	623.1	170	16.9	53.3	230.8	1,706.4
2026-27	625.7	637.0	174	17.6	54.1	239.4	1,747.3
2027-28	641.0	652.7	178	18.2	55.0	248.3	1,792.7
2028-29	657.5	668.4	182	18.9	55.8	257.6	1,840.1
2029-30	675.4	685.2	187	19.6	56.8	267.2	1,891.4

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

As shown in Table 17, total expenses associated with the Program increase from \$1.0 billion in 2004-05 to \$1.9 billion in 2029-30. On average, total expenses increase at a rate of 2.8% per year from 2004-05 to 2029-30.



#### 4. Total Revenues

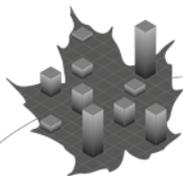
In Table 18, the revenues for the Direct Loan Regime come from the interest earned from student loans in repayment, which include interest accrued during the six-month grace period following the study end date, interest accrued on impaired loans and interest relief. This revenue is reduced by the Government's cost of borrowing to obtain the net interest revenue. The interest on impaired Direct loans is accrued until the status of the loans becomes "non-recoverable". The interest recovered on Direct loans is part of the provision calculation and is not considered to be revenue. The amount of interest earned is lower compared to the previous report since prepayments and accelerated payments of principal are included for the first time in this valuation.

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 owned by the Government.

On average, total revenues increase at a rate of 4.2% per year from 2004-05 to 2029-30, which is lower than the overall average annual increase of 4.7% from the previous report.

**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	
2004-05	248.9	-141.7	107.3	12.4	70.7	190.3
2005-06	345.7	-171.0	174.7	12.9	61.1	248.8
2006-07	436.9	-215.3	221.6	12.6	52.4	286.5
2007-08	513.8	-252.2	261.7	11.9	44.0	317.5
2008-09	589.8	-289.6	300.2	11.1	36.0	347.3
2009-10	664.2	-327.0	337.1	10.3	26.9	374.3
2010-11	732.3	-365.0	367.3	9.1	16.1	392.5
2011-12	771.6	-398.0	373.6	7.7	10.1	391.4
2012-13	814.3	-429.5	384.8	6.2	6.7	397.7
2013-14	847.1	-454.6	392.5	4.7	4.5	401.8
2014-15	872.4	-474.8	397.6	3.5	3.1	404.2
2015-16	903.2	-491.5	411.7	2.5	2.1	416.3
2016-17	928.9	-505.0	423.8	1.8	1.4	427.0
2017-18	954.9	-517.0	437.9	1.2	0.9	439.9
2018-19	975.9	-528.1	447.7	0.8	0.6	449.1
2019-20	995.6	-538.8	456.8	0.5	0.4	457.7
2020-21	1,013.6	-548.3	465.3	0.3	0.3	465.8
2021-22	1,029.3	-556.7	472.6	0.2	0.1	472.9
2022-23	1,043.8	-564.4	479.4	0.1	-	479.6
2023-24	1,057.6	-571.7	485.9	0.1	-	486.0
2024-25	1,071.7	-579.1	492.5	-	-	492.6
2025-26	1,086.1	-586.9	499.2	-	-	499.3
2026-27	1,101.7	-595.3	506.3	-	-	506.3
2027-28	1,119.3	-604.9	514.4	-	-	514.4
2028-29	1,139.5	-615.8	523.7	-	-	523.7
2029-30	1,162.5	-628.3	534.1	-	-	534.1



# ACTUARIAL REPORT

## CANADA STUDENT LOANS PROGRAM

as at 31 July 2005

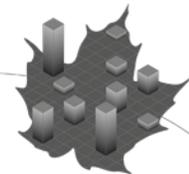
### 5. Net Cost of the Program

Table 19 shows, in current dollars, total expenses, revenues and the net cost of the Program for the 25-year projection period, while Table 20 shows the same, but in 2005 constant dollars. The expenses and revenues shown correspond to values 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
2004-05	951.6	190.3	761.2	700.1	61.1
2005-06	1,067.8	248.8	819.0	781.3	37.8
2006-07	1,073.0	286.5	786.5	772.6	13.9
2007-08	1,085.0	317.5	767.4	769.2	-1.7
2008-09	1,117.2	347.3	769.9	779.9	-10.0
2009-10	1,158.7	374.3	784.4	796.7	-12.3
2010-11	1,200.5	392.5	808.0	817.6	-9.6
2011-12	1,245.8	391.4	854.4	862.1	-7.7
2012-13	1,298.8	397.7	901.1	907.4	-6.3
2013-14	1,350.0	401.8	948.3	953.4	-5.2
2014-15	1,394.8	404.2	990.6	994.5	-3.9
2015-16	1,431.9	416.3	1,015.6	1,018.4	-2.8
2016-17	1,459.5	427.0	1,032.5	1,034.6	-2.0
2017-18	1,488.0	439.9	1,048.1	1,049.4	-1.3
2018-19	1,514.9	449.1	1,065.7	1,066.8	-1.0
2019-20	1,537.9	457.7	1,080.2	1,080.9	-0.7
2020-21	1,558.9	465.8	1,093.1	1,093.5	-0.4
2021-22	1,584.2	472.9	1,111.2	1,111.5	-0.2
2022-23	1,610.6	479.6	1,131.1	1,131.1	-0.1
2023-24	1,640.9	486.0	1,155.0	1,155.0	-
2024-25	1,671.7	492.6	1,179.1	1,179.1	-
2025-26	1,706.4	499.3	1,207.1	1,207.1	-
2026-27	1,747.3	506.3	1,241.0	1,241.0	-
2027-28	1,792.7	514.4	1,278.3	1,278.3	-
2028-29	1,840.1	523.7	1,316.4	1,316.4	-
2029-30	1,891.4	534.1	1,357.3	1,357.3	-

As shown in Table 19, the initial net annual cost for the Direct Loan Regime is \$700 million for loan year 2004-05 and reaches \$1.4 billion in loan year 2029-30. This represents an annual average increase of 2.7% for the entire projection period.

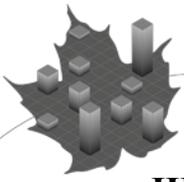


In 2005 constant dollars (Table 20), the cost of the Direct Loan Regime increases by an average of 0.2% a year, from \$700 million in loan year 2004-05 to \$729 million in 2029-30.

**Table 20 Net Annual Cost of the Program (in millions of 2005 constant dollars)<sup>1</sup>**

Loan Year	All Regimes			Net Cost of the Program	
	Total Expenses	Total Revenue	Total Net Cost of the Program	Direct Loan	Risk-Shared & Guaranteed
2004-05	951.6	190.3	761.2	700.1	61.1
2005-06	1,043.9	243.2	800.7	763.8	36.9
2006-07	1,028.4	274.6	753.8	740.5	13.3
2007-08	1,019.5	298.4	721.1	722.8	-1.6
2008-09	1,029.2	320.0	709.3	718.5	-9.2
2009-10	1,045.5	337.7	707.8	718.9	-11.1
2010-11	1,059.9	346.6	713.3	721.8	-8.5
2011-12	1,075.1	337.7	737.4	744.0	-6.6
2012-13	1,094.6	335.2	759.5	764.8	-5.3
2013-14	1,110.1	330.4	779.7	783.9	-4.3
2014-15	1,117.7	323.9	793.9	797.0	-3.1
2015-16	1,117.3	324.8	792.5	794.7	-2.2
2016-17	1,109.0	324.4	784.5	786.1	-1.5
2017-18	1,100.9	325.5	775.4	776.4	-1.0
2018-19	1,091.3	323.6	767.7	768.5	-0.7
2019-20	1,078.7	321.1	757.7	758.2	-0.5
2020-21	1,064.7	318.2	746.6	746.9	-0.3
2021-22	1,053.6	314.5	739.0	739.2	-0.2
2022-23	1,043.0	310.5	732.4	732.5	-0.1
2023-24	1,034.7	306.4	728.2	728.3	-
2024-25	1,026.3	302.4	723.9	723.9	-
2025-26	1,020.1	298.5	721.6	721.7	-
2026-27	1,017.1	294.7	722.4	722.4	-
2027-28	1,016.1	291.6	724.5	724.5	-
2028-29	1,015.6	289.0	726.5	726.5	-
2029-30	1,016.4	287.0	729.4	729.4	-

<sup>1</sup> For a given year, the value in 2005 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 2005.



### 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 the utmost importance to challenge the administration on the quality of data and to gain access to such data.

The number of students receiving a CSLP loan in a year is expected to increase from 340,000 to 444,000 over the projection period. This represents an increase in the loan uptake of students in post-secondary institutions from 41% to 62%. Such an increase in participation in the Program is mainly a result of rising student need. This need is affected by the projection of tuition fees and other expenses, which increase at a faster rate than resources. Contrary to the past two decades, the number of students enrolled in post-secondary institutions is not a contributing factor to the increase in the cost of the Program, as fewer students are expected to enroll in post-secondary institutions over the projection period. Instead, it is rising student need that mostly contributes to increasing Program costs.

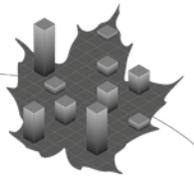
The growth rate of new loans issued is, on average, 2.4% per year; it comprises an annual average increase of 1.1% in the number of students participating in the CSLP and a 1.3% increase in the average loan size.

The amount of new loans issued increases from \$1.6 billion in loan year 2004-05 to \$1.9 billion in 2005-06 when the loan limit is increased to \$210 per week due to an amendment to the CSFAA. It continues to increase during the projection period and reaches \$2.9 billion in 2029-30.

The portfolio of student loans increases from \$10.9 billion in 2004-05 to \$19.8 billion by 2029-30.

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 \$0.8 billion to \$1.4 billion over the projection period. This represents an average annual increase in the cost to the Government of 2.3%.

The provision rates for bad debt (principal and interest) and debt reduction in repayment are unchanged from the previous report.



#### IV. Actuarial Opinion

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

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

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

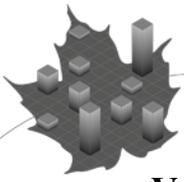
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Michel Millette, F.S.A., F.C.I.A.  
Senior Actuary

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

Ottawa, Canada  
9 June 2006



## 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 in order 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* (CSLA) was established, applying to loan years preceding August 1995 and the *Canada Student Financial Assistance Act* (CSFAA) replaced the previous act for loan years after July 1995. Both acts permit the Minister of Human Resources and Social 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 each year to their province of residence, loans are available to full-time students regardless of age and, since 1983, to part-time students.

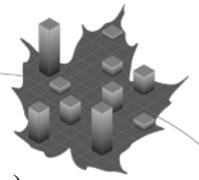
#### 2. Partnerships

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 need of the student based on the difference between costs and available resources. For each school year, the CSLP covers 60% of the assessed need with a maximum of \$210 per week. The participating provinces complement the CSLP by providing 40% of the assessed need. The amount of money students may borrow depends on their individual circumstances.

Effective 1 August 2005, enhancements were made to the CSLP. The first enhancement is the inclusion of computers as an eligible expense. The second enhancement is a reduction in the required amount of parental contributions in order to extend eligibility to more students from middle-income families. In Budget 2006, the Government proposed a further reduction to the required amount of parental contributions. This reduction has not been taken into consideration for this report.

The National Student Loans Service 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. 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 to assist in repaying the loan.

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 risk 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 were no longer fully guaranteed by the Government. Instead, the *Canada Student Financial Assistance Act* permitted the Government to pay financial institutions a risk premium of five per cent of the value of loans that consolidated each loan 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 risk involved.

### 3. Loan Benefit

#### a) In-study Interest Subsidy

The CSLP provides an interest-free loan during the period that the student is studying full-time. 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 cost of borrowing) on the loan and no payment on the principal is required.

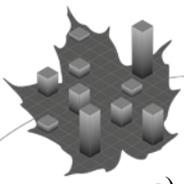
Part-time students are provided assistance in the form of a line of credit. Unlike full-time students, they must make interest payments while in school. If a student's income is below a certain level while in school, the student may qualify for interest relief.

#### 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 is required; the student has to negotiate an agreement to set out the repayment terms. Once consolidation occurs, the student is considered 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 accrued 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 occurring 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 required. 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, entitling anyone 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 exhausting 30 months of interest relief. First, the repayment period is extended from 10 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 completely cover 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 determining eligibility for interest relief, a borrower’s monthly family income must fall below an established income threshold in relation to the required monthly payment on the loan. In 2005, the Government increased the income thresholds by 5 per cent.

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. Two new loan reductions up to \$5,000 each were introduced for borrowers still experiencing financial hardship in repayment. In 2005, the second reduction was increased to \$10,000 and the third reduction to \$6,000. To determine whether the previous reduction has resulted in a manageable debt level, twelve months must elapse between each reduction. The table below briefly describes this assistance since its introduction.

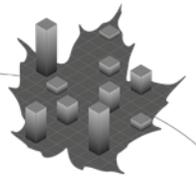
**Table 21 Debt Reduction in Repayment**

<b>Year</b>	<b>Maximum Reduction per 12-month Period*</b>			<b>Total Maximum Reduction</b>
2005	1 <sup>st</sup> - \$10,000	2 <sup>nd</sup> - \$10,000	3 <sup>rd</sup> - \$6,000	\$26,000
2003	1 <sup>st</sup> - \$10,000	2 <sup>nd</sup> - \$5,000	3 <sup>rd</sup> - \$5,000	\$20,000
1998	50% of loan principal			\$10,000

\* Borrowers still experiencing financial hardship may be eligible for another reduction in 12 months.

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.

The 2005 Federal Budget proposed to extend eligibility for loan forgiveness for Canada Student Loans in the unfortunate event that a borrower dies during the period of repayment. This measure has been in force since 29 June 2005.



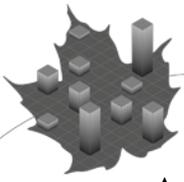
#### **4. Canada Study Grants**

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.

#### **5. Canada Access Grants**

Following an amendment to the CSFAA, Canada Access Grants are available starting in loan year 2005-06. They include:

- the Canada Access Grant for students from low-income families. This grant is available to dependent students whose family income falls within the range of entitlement to the National Child Benefit supplement (generally, those are families with incomes under \$35,000). The grant covers half of tuition, up to the lesser of \$3,000 or the student's assessed federal need for their first year of post-secondary education. It reduces the amount of federal student debt that would otherwise be incurred.
- the Canada Access Grant for students with permanent disabilities. This grant covers the lesser of \$2,000 or the student's assessed federal need. The new grant replaces the existing grant for students with disabilities that is paid only to those who have financial need in excess of the weekly loan ceiling. The Canada Study Grant for students with disabilities that covers the cost of education-related services and equipment is still available.



**Appendix 2 – Data**

The input data required with respect to Direct loans were extracted from data files provided by Human Resources and Social Development (HRSD).

**1. Direct Loans Issued**

Table 22 presents the data extracted from an HRSD file on the number of students and amount of Direct loans issued for loan years 2000-01 to 2004-05 compared with HRSD publicized data. The data regarding loans issued were found to be complete.

**Table 22 Direct Loans Issued and Number of Students**

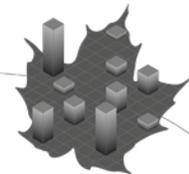
Loan Year	Amount of Loans Issued (\$ million)		Number of Students	
	HRSD File	HRSD Publication	HRSD File	HRSD Publication
2000-01	1,578	1,570	344,341	346,568
2001-02	1,509	1,512	328,755	331,541
2002-03	1,543	1,549	328,546	331,763
2003-04	1,646	1,648	340,398	342,982
2004-05	1,624	1,633	336,528	339,828

**2. Direct Loans Consolidated**

Table 23 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). The consolidation date is not available in the data file. It is approximated from the last post-secondary end date. Therefore, the consolidated amounts may be overestimated, especially in the last two loan years, since some students that are still in school are assumed to have consolidated their loan.

**Table 23 Direct Loans Consolidated**

Loan Year	Amount of Loans Consolidated Including Six-month Interest in the Grace Period (\$ million)	
	HRSD File	MFIS
2000-01	29.1	62.2
2001-02	708.3	772.2
2002-03	1,058.2	988.8
2003-04	1,285.1	1,151.3
2004-05	1,443.5	1,296.7
All	4,524.3	4,271.2



### 3. Defaults and Recoveries for Direct Loans

Table 24 shows the data on defaults and recoveries (principal only) for Direct loans extracted from HRSD data files. The data regarding defaults and recoveries were found to be complete.

**Table 24 Defaults and Recoveries for Direct Loans**

Loan Year	Defaults (\$ million)	Recoveries (\$ million)
2000-01	3.9	0
2001-02	6.2	0.2
2002-03	236.0	22.4
2003-04	254.4	46.8
2004-05	348.8	81.9

### 4. Interest Relief

Table 25 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 25 Interest Relief Payment Data for Direct Loans (\$ million)**

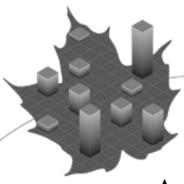
Loan Year	Amounts Obtained from HRSD	Estimated from HRSD Files
2000-01	0	0
2001-02	3.1	3.9
2002-03	13.4	14.5
2003-04	24.0	25.0
2004-05	33.7	38.6

### 5. Debt Reduction in Repayment

Table 26 compares payment amounts of DRR, obtained from HRSD, with the DRR amounts extracted from HRSD data files.

**Table 26 Debt Reduction in Repayment for Guaranteed and Risk-Shared Loans (\$ million)**

Loan Year	Amounts Obtained from HRSD	Estimated from HRSD Files
2001-02	5.3	5.7
2002-03	8.6	8.1
2003-04	12.1	12.0
2004-05	36.1	36.0



## 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 need of those CSLP students and the loan limit. The evolution of the number of CSLP students and their need 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.

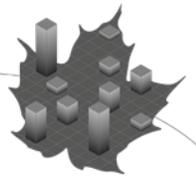
##### ii) Post-secondary Enrolment

The evolution of post-secondary enrolment shows a long-term decrease in post-secondary enrolment primarily caused by the labour shortage forecasted in Canada after the year 2015. It is anticipated that this labour shortage will be caused by the significant aging of the Canadian population and will considerably raise labour force participation rates in the age range 18-34. A higher expected labour force participation rate in the future implies that a smaller percentage of potential students will choose to attend a post-secondary institution on a full-time basis. The labour force non-participation rates associated with post-secondary enrolment are shown for years 2004-05, 2015-16 and 2029-30 in Table 27 below.

**Table 27 Labour Force Non-participation Rates by CSLP Age Band**

Age Band	Not in Labour Force		Change – Not in Labour Force (2) / (1) - 1	Not in Labour Force 2029-30 (3)	Change – Not in Labour Force (3) / (1) - 1
	2004-05 (1)	2015-16 (2)			
	%	%	%	%	%
18-19	33.8	33.1	-2.1	29.4	-13.0
20-24	22.9	21.5	-6.1	20.9	-8.7
25-29	15.6	14.3	-8.3	13.3	-15.1
30-34	13.4	12.1	-9.5	11.2	-16.2
18-34	19.3	17.6	-8.3	16.5	-14.5

Table 27 shows a decrease in the inactive population, with an expected cumulative decrease of 8.3% over the next eleven years and a larger decrease of 14.5% by 2029-30. This labour shortage will cause the expected decrease in the population not participating in the labour force from 2015-16 to 2029-30. 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 than the older age group to attend college or university regardless of the situation in the labour force.



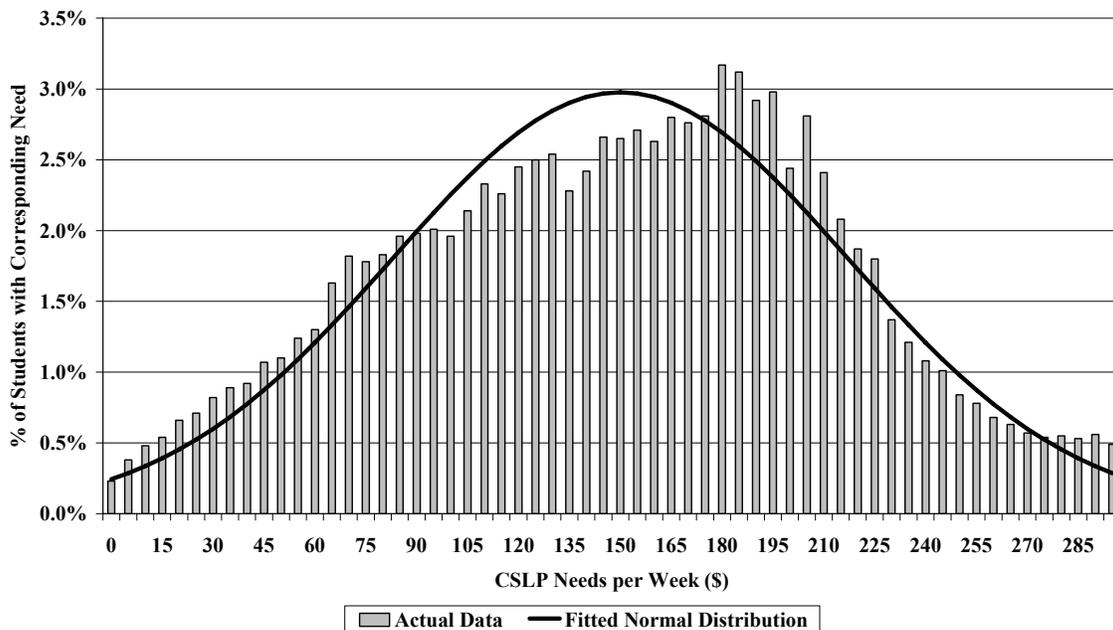
iii) Participation in the CSLP

HRSD has provided CSLP need assessment data for the past five loan years. The CSLP need per week was determined using the following calculation:

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

The CSLP weekly need represents 60% of the assessed weekly need 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 need was created and very closely resembles a normal distribution. Chart 5 below shows the normal distribution fitted to the actual CSLP student weekly need data.

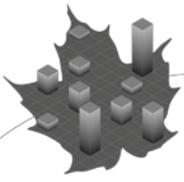
**Chart 5 2003-04 Actual Need and Fitted Normal Distribution**



The normal distribution provides a good fit, but was 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 need may experience a small increase in their need since they have resources to offset the expense increase. Students with high need 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 five years of need assessment data showed that the mean of the need curves increased at a slower rate than the projected average student need. Thus, the mean of the CSLP student need curve is assumed to be the



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average of the prior year plus two-thirds of the projected average student need increase. After the new parameters are determined, the CSLP student need 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 need increases from year to year, students will move further to the right of the need 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. Beginning with the base need curve for 2004-05, the area under the curve is 100% and the loan uptake rate is 40.7%. The area under the need curve for 2005-06 is 102.9% due to an increase in the proportion of students in the CSLP. Thus, the loan uptake rate for 2005-06 is 41.9% ( $40.7\% \times 1.029$ ). 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 CSLP Student Need

As discussed in the Main Report, student need is defined as the excess of tuition and other expenses over student resources. These elements were also checked for consistency with the average values contained in the need assessment files. Table 5 shows the evolution of student need throughout the projection period.

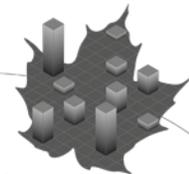
#### i) Tuition

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 increases in tuition fees. The future evolution of tuition is shown both in Table 5 of the Main Report and Table 28 of this appendix.

To arrive at an estimate, the provinces' respective budgets stating their intentions, along with actual tuition increases as reported in news releases and by statistics sources, were used to project tuition increases for the next four years. Table 28 below illustrates these results.

**Table 28 Short-term Increase of Tuition Expenses**

Province	Weight %	Budget/Experience	Results			
			2005-06 %	2006-07 %	2007-08 %	2008-09 %
Newfoundland	2.9	Tuition freeze	0.0	0.0	0.0	0.0
Prince Edward Island	0.9	4.2% increase	4.2	4.2	4.2	4.2
Nova Scotia	6.3	4.6% increase, followed by increases of 3.9%	4.6	3.9	3.9	3.9
New Brunswick	4.8	6.1% increase	6.1	6.1	6.1	6.1
Ontario	47.2	second year of a two-year freeze, followed by a 5.0% increase and increases of 4.0% thereafter	0.7	5.0	4.0	4.0
Manitoba	2.6	0.9% increase	0.9	0.9	0.9	0.9
Saskatchewan	4.0	1.2% increase	1.2	1.2	1.2	1.2
Alberta	12.4	3.7% increase	3.7	3.7	3.7	3.7
British Columbia	19.0	2.1% initial increase, followed by tuition indexed to inflation	2.1	2.0	2.0	2.1
Weighted Average			1.9	3.8	3.4	3.4



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, on average, close to 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 3.4% tuition increase for 2008-09 is graded to reach the CPI increase plus 3% by 2013-14.

The starting point for the 2004-05 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 \$5,282 for average tuition fees in 2004-05.

ii) 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.

Expenses are separated into two categories: books and living costs. As in the last report, the CSLP need assessment data was used to set assumptions for student living arrangements and the percentage of maximum allowable expenses incurred by living arrangement. The table below uses these assumptions to calculate the annual living cost per student.

**Table 29 Monthly Living Costs 2004-05**

Living Arrangement	Weight in %	Maximum Monthly Living Costs (\$)					Avg % Spent	Annual Living Costs (\$)
		Shelter	Food <sup>(1)</sup>	Trans- portation	Miscel- laneous <sup>(2)</sup>	Total		
Single, living away from home	68.0	429	203	62	218	911	59.0	6,452
Single parent	7.5	688	203	62	218	1,170	95.0	13,341
Married student & spouse	8.5	859	372	124	417	1,772	70.0	14,884
Single, living at home	16.0	0	164	62	171	396	63.0	2,996
<b>Weighted Average</b>		<b>417</b>	<b>211</b>	<b>67</b>	<b>227</b>	<b>921</b>		<b>7,133</b>

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

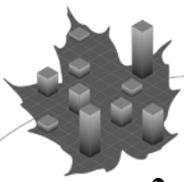
<sup>(2)</sup> Personal and health care, clothing, household cleaning, communications.

Books and supplies are assumed to be roughly equal to 20% of tuition, which is \$5,282 for 2004-05. The assumption of 20% is consistent with the ratio of books and supplies to tuition in the five years of need assessment data. The total expense attributable to books and supplies is \$1,056 (20% x \$5,282). The total amount of the CSLP student expenses (excluding tuition), indexed to future increases in the CPI, amounts to \$8,189 (\$7,133 + \$1,056) for loan year 2004-05.

iii) Student Resources

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

The starting point for average resources in 2004-05 is calculated as a residual value. Since the average loan size approximately equals average expenses minus average resources, then average resources are roughly equal to average expenses minus average loan size with adjustments for unmet need. This results in an estimate of \$3,646 for a student's average resources in 2004-05.



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## 2. Consolidation

Under the Direct Loan Regime, loan consolidation is assumed to occur according to the distribution of consolidation by year, shown in Table 30, over a period of fourteen years after a loan is issued. This distribution is built using the first five years of data for Direct Loan consolidations. A constant decreasing rate is applied for the years that follow.

**Table 30 Distribution of Consolidation**

Year After the Loan was Issued	% Consolidated
1 <sup>st</sup>	3.2
2 <sup>nd</sup>	47.1
3 <sup>rd</sup>	15.7
4 <sup>th</sup>	12.5
5 <sup>th</sup>	6.7
6 <sup>th</sup>	4.7
7 <sup>th</sup>	3.2
8 <sup>th</sup>	2.3
9 <sup>th</sup>	1.6
10 <sup>th</sup>	1.1
11 <sup>th</sup>	0.8
12 <sup>th</sup>	0.5
13 <sup>th</sup>	0.4
14 <sup>th</sup>	0.3

## 3. Interest Relief

Table 31 shows the base utilization rates of interest relief for the Direct Loan Regime for loan year 2004-05 and onwards. These rates are equal to the non-adjusted rates for the Guaranteed and Risk-Shared regimes. The utilization rates in Table 31 are adjusted to take into account Direct Loan interest relief experience for the past four loan years. For loan year 2004-05, the utilization rates are adjusted to 82% of the rates in Table 31. The adjustment is 86% for loan year 2005-06 and 88% for loan year 2006-07 and onward.

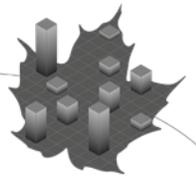
**Table 31 Utilization Rates for Interest Relief for the Direct Loan Regime**

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	34.45%	18.64%	10.87%	5.57%	1.67%
1 – 2	4.93%	2.24%	1.21%	0.49%	
2 – 3	2.81%	1.22%	0.62%		
3 – 4	1.53%	0.61%	0.27%		
4 – 5	0.72%	0.25%	0.12%		
5 – 6	0.30%	0.10%			
6 – 7	0.13%				
7 – 8	0.06%				

## 4. Debt Reduction in Repayment

Debt reduction in repayment (DRR) is taken once all possible interest relief is exhausted by the student borrower. This is a relatively new program and there is limited experience from it. Moreover, DRR was enhanced through both the 2003 and 2004 Federal Budgets. Thus, starting in loan year 2005-06, the DRR measure consists of three reductions: \$10,000, \$10,000 and \$6,000.

The assumptions regarding the proportion of loans going on DRR and the average amount of debt relief remain almost unchanged from the previous report due to limited experience data.



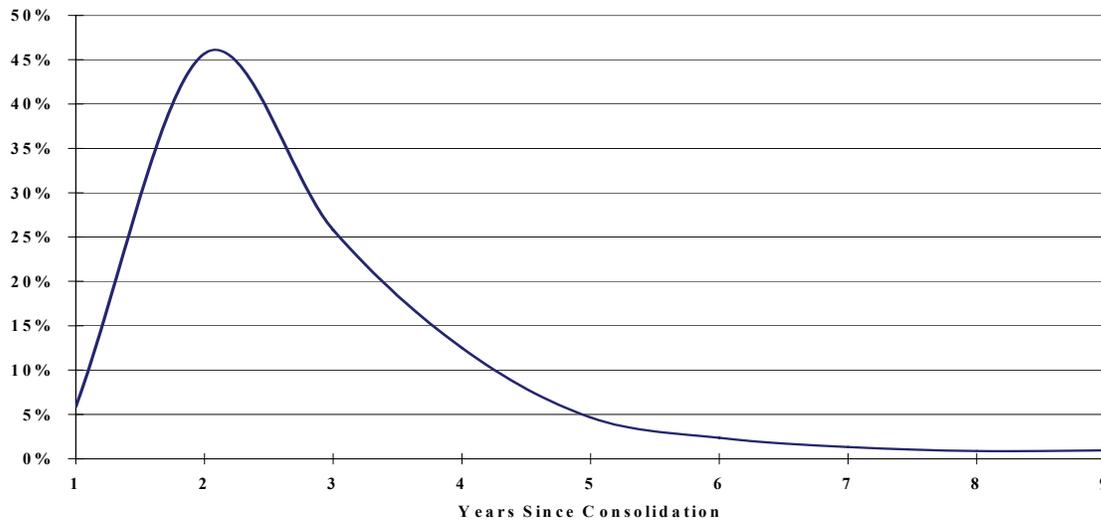
The assumption for the proportion of loans going on DRR, after exhausting interest relief, is 63%, 12% and 3%, respectively for each of the three DRR reductions. The average amount of debt relief is set at 40%, 8% and 2%, respectively for the three reductions. These rates will be modified as more experience data becomes available.

Although the data received for DRR is more complete than at the last report, there are still some issues that need to be resolved. It is very important to be able to make a link between the IR and DRR data files as borrowers exhaust their IR and move into DRR. Also, the DRR file is missing data regarding a borrower's outstanding principal. The DRR assumptions mentioned in the previous paragraph are based on outstanding principal and without accurate data on outstanding principal, these values may not be reliable.

**5. Default Rate**

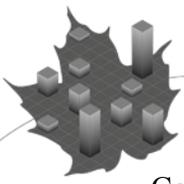
To determine the initial default distribution, the amounts of impaired loans from the Guaranteed Regime were analyzed by consolidation year. Consolidation loan years 1992-93 to 1995-96 were considered for the analysis. The average distribution is shown in Chart 6. According to this distribution, around 77% of defaulted loans occurred in the first three years following consolidation.

**Chart 6 Default Distribution**



In the Actuarial Report as at 31 July 2004, the gross default rate was set at 40.7% according to experience data. The gross default rate was adjusted for the following two reasons:

- a) in August 2003, the automatic pre-authorized payment program was temporarily unavailable for legal reasons. This situation led to exceptional defaults that should not be considered in the establishment of the long-term default rate, and
- b) the experience shows that the default rate is higher for students from private institutions than students from public institutions. Moreover, students from private institutions consolidated their loans at a faster pace than those from public institutions due to the shorter programs of study. This situation inflated the default rate at the beginning of the Direct Loan Regime. In the long-term, the proportions of consolidations for private and public institutions for a year should be proportional to the loans issued for private and public institutions. Using these as the consolidation proportions, a downward adjustment was applied to the gross default rate.



Considering these two adjustments, the gross default rate was decreased from 40.7% to 35.4%.

As presented in Table 32, using consolidation amounts for the first five years of Direct loans, the default distribution shown in Chart 6 and a default rate of 40.7%, the projected amount of defaulted loans is \$384 million for loan year 2004-05. The amount is \$334 million with a default rate of 35.4%. The actual amount of defaults is \$350 million in loan year 2004-05. The difference between projected and actual amounts may be due to the automatic pre-authorized program that was not completely recovered at the beginning of the year and because the ultimate consolidation proportion between private and public institutions is not yet reached. Overall, for the last 5 years, the projected amount of defaults is \$854 million with a default rate of 40.7% and \$743 million with a rate of 35.4%. The actual total amount of defaults extracted from the data file is \$849 million, which is closer to the amount projected using 40.7% due to, as mentioned, the automatic pre-authorized payment program and the consolidation proportions.

**Table 32 Direct Loan Regime – Projected and Actual Defaulted Amounts (\$ million)**

Gross Default Rate	Loan Year 2004-05		Total 2000-01 to 2004-05	
	Projected	Actual	Projected	Actual
40.7%	384		854	
35.4%	334	350	743	849

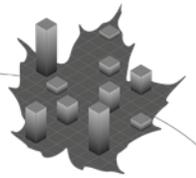
The gross default rate remains unchanged at 35.4%. This is the best estimate that can be set for the long term from the data that are currently available.

**6. Recovery Rate**

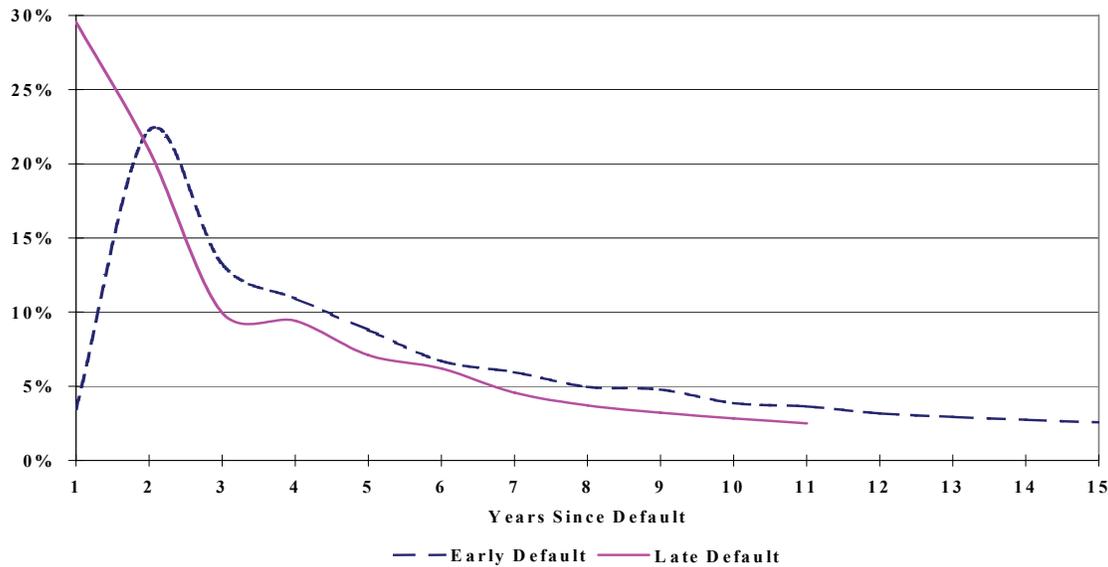
The recovery amounts for loans in the Guaranteed Regime were analyzed by consolidation year and by year since default. The empirical data were fit to a Weibull distribution. The flexible shape of this distribution makes it an appropriate fit for modelling the recovery process.

To fit the empirical data to a Weibull distribution, the parameters of the distribution were estimated by minimizing the sum of squares 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.

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 7). The distribution curves are used to extrapolate recoveries for Direct loans.



**Chart 7 Recovery Distribution Depending on Date of Default**



In the Actuarial Report as at 31 July 2004, the assumed recovery rate for Direct loans was set at 60%. Using the actual default amount distributed by consolidation year and default year, the recovery distribution shown in Chart 7 and a recovery rate of 60%, the resulting projected amount of recoveries is \$81.6 million for loan year 2004-05, which matches almost exactly the actual amount of \$81.9 million. Since 2000-01, the overall projected amount of recoveries is \$158 million, which is close to the actual amount of recoveries extracted from the data file, which totals \$151 million.

The recovery rate for Direct loans is not modified and the resulting net default rate is 14.2% (35.4% x (1 – 60%)).

**7. Bad Debt Provision – Principal**

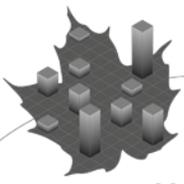
According to the accounting recommendations under Section PS 3050 Loans Receivable of the Public Sector Accounting Handbook of the Canadian Institute of Chartered Accountants, a provision should be determined using the best-estimate available in light of past experience, current conditions and future expectations. As described previously, the net default rate is set at 14.2% and an upward adjustment for interest accrued during the grace period is applied.

**Table 33 Provision Rate – Bad Debt – Principal**

Historical Net Default Rate	14.2%
Adjustment: Interest Accrued on Loans during Grace Period	+0.4%
<b>Bad Debt Provision – Principal</b>	<b>14.6%</b>

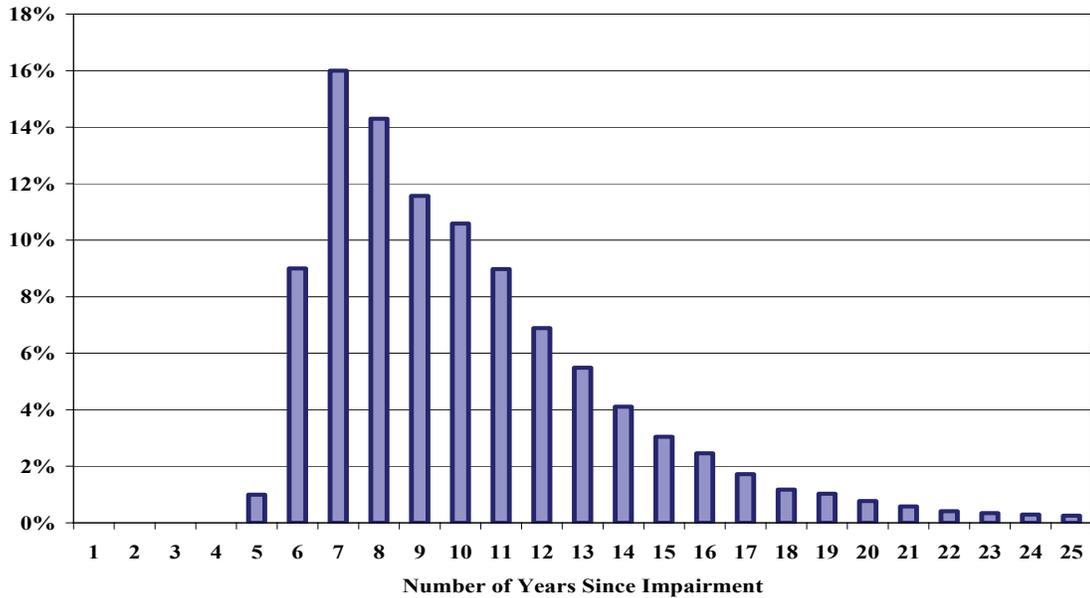
For the Direct Loan Regime projections, the assumption used for the gross default rate on loans consolidated is 35.4%, while the assumption used for the recovery rate is 60%. This gives a net default rate of 14.2%. The provision rate is set at 14.6% on new loans issued to take into account the interest accrued on loans during the grace period.

The allowance for bad debt-principal is reduced when there is a write-off. Since there have not been any write-offs of Direct loans in the first five years of the regime, the write-off distribution used in the previous report has been modified. The assumption for the new write-off distribution



consists of a 21-year distribution based on the limited recent experience of write-offs for the Guaranteed Loan Regime. The first rate of the distribution is applied in the fifth year after the establishment of the default. The write-off distribution is presented in Chart 8.

**Chart 8 Write-off Distribution**



**8. Bad Debt Provision – Interest**

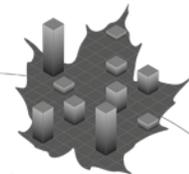
The methodology for the calculation of the bad debt provision – interest takes into account the number of years since impairment. Interest on impaired loans is accrued until the loan reaches the “non recoverable” status. A loan reaches this status when the collectibility of either principal or interest is not reasonably assured. A loan is transferred to “non-recoverable” status according to a 15-year distribution (shown in Table 34) and is then written off according to the write-off distribution used for the principal portion.

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. The methodology involves the calculation of:

- the accrued interest in each year on impaired loans at the student cost of borrowing rates,
- the projected outstanding interest at the end of each year, using non-recoverable and recovery distributions, as presented below, and
- the 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 34 presents, according to the number of years since impairment, the non-recoverable status and recovery distributions for interest on impaired loans, as well as the provision and recovery rates. The distribution of transfers to the non-recoverable status corresponds to the write-off



distribution of the previous report. The write-off distribution is also used for the calculation of the provision for bad debt – principal. As no write-offs have occurred since the inception of the Direct Loan Regime, the write-off distribution used in this report shows a 4-year lag and is extended compared to the previous report (see Chart 8).

**Table 34 Provision Rates - Bad Debt – Interest**

Number of Years Since Impairment	Distribution (%)		Provision Rate (%)	Recovery Rate (%)
	Non-recoverable status	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 based on the distribution of the recovery of principal. The provision rate for interest on loans in default less than one 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 5 and 6” years is:

$$\begin{aligned}
 \text{Recovery rate} &= 80\% * (4\% + 3\% + 3\% + 2\% + 1\% + 1\% + 1\% + 1\% + 1\%) \\
 &= 80\% * 18\% \\
 &= 14.4\%
 \end{aligned}$$

$$\text{Provision rate} = 100\% - 14.4\% = 85.6\%$$

Using this methodology, about 42% of all projected accrued interest on impaired loans will be recovered, which is close to the Guaranteed Loans’ experience over the last 15 years.

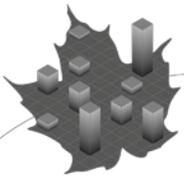
**9. Other Assumptions**

a) Prepayments and Accelerated Payments

The payments of principal received from students were analysed using the Designation Monthly data files for loan year 2004-05. The analysis revealed that some payments are received while the student is in school or during the grace period (prepayments) and some payments are received in excess of the scheduled payments during the repayment period (accelerated payments).

i) Prepayments

Prepayments correspond to the payments applied to principal during the period of study and during the six-month grace period after the period of study end date. The amount of



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prepayments for loan year 2004-05 is around \$130 million. The proportion of prepayments received during the period of study represents 25% of total prepayments. Since the major proportion of prepayments (75%) is made during the six-month grace period, the assumption is established in relation to the consolidation amount. The assumption is set at around 10% of consolidations and remains constant for all future consolidation years.

#### ii) Accelerated Payments

Accelerated payments correspond to the payments received during the repayment period that exceed the scheduled payment based on a 114-month (9.5 years) repayment period. Based on the information from the Designation Monthly data files, it is assumed that students pay, on average, additional payments that correspond to 48% of scheduled payments, calculated using the standard 114-month repayment period. This is a single accelerated payment rate that is used for all consolidation and payment years.

This assumption will be revised for the next report since a Guideline on amortization periods for consolidating loans with Service Providers has been implemented. It provides direction on the maximum period over which full-time consolidating loans are to be amortized taking into consideration the total dollar value of all student loans at the time of consolidation. Starting early in loan year 2005-06, the scheduled payments for newly consolidated loans are calculated using a repayment period that varies according to the outstanding loan amount.

For the next report, the assumption for accelerated payments may be modified into a distribution of rates according to the number of years since consolidation.

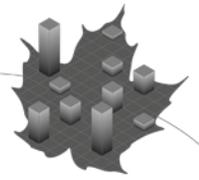
#### b) Alternative Payments

Alternative payments are projected 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 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: student interest payments and principal and interest from recoveries. The cost of alternative payments was \$152 million for loan year 2004-05 based on expenses and revenues of loan year 2003-04 and \$161 million for loan year 2005-06 based on expenses and revenues of loan year 2004-05.

#### c) Recovery Costs

The recovery costs have been projected using a percentage of the recoveries. The assumption used for recovery costs is 8.5% of total recoveries. This rate is assumed to be constant in the future.



d) Administration Costs

HRSD provided estimates of the administration costs to support the CSLP for three fiscal years. 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 35.

**Table 35 Administration Costs**

Loan Year	Administration Costs (\$ million)
2004-05	112.5
2005-06	123.4
2006-07	123.0
2007+	Increase with wages

e) Administration Fees Paid to Provinces

For loan year 2004-05, the administration fees paid to the participating provinces and territory was \$8.3 million. The increase in wages is used to project this expense.

f) Canada Study Grants

For loan year 2004-05, the actual cost of the Canada Study Grants is \$73 million. For future years, the cost of Canada Study Grants is projected to increase with inflation.

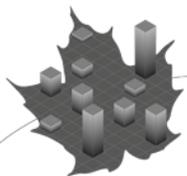
Following the amendment to the CSFAA, Canada Access Grants are considered in this evaluation beginning in loan year 2005-06.

g) Loans Forgiven

The projection of loans forgiven for the Direct Loan Regime is based on the following methodology:

- Loans forgiven are projected using the actual 2004-05 data and the annual overall increase in the loans portfolio.
- Projected loans forgiven are separated into three classes (in-study, in repayment and in default), using the projected loans portfolio for each class.
- A rate of loans forgiven is then obtained for each class. This rate is increased by 30% for loans forgiven while in repayment and in default to take into account the modification to the CSFAA, effective on 29 June 2005, which extends the eligibility for loan forgiveness in the event of a borrower's death during the period of repayment.
- In the long term, rates of loans forgiven correspond to 0.12% of loans in-study and 0.15% of loans in repayment and in default.

The total amount of \$19.3 million for loans forgiven in loan year 2005-06 includes a retroactive amount that corresponds to borrowers who died before the change to the law, since the remaining balance of those student loans has been forgiven.



## 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.

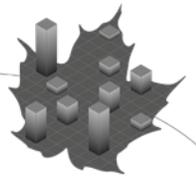
For each sensitivity test, key assumptions were changed individually, with the other assumptions being maintained at their best-estimate levels. Two tests were performed with respect to each of the assumptions tested, except for the loan limit where only one test was performed. The alternative assumptions 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 36 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 38 at the end of this Appendix.

**Table 36 Long-term Sensitivity Test Assumptions**

Assumption	Low-cost	Best-estimate	High-cost
1. Loan Limit	--	\$210	Indexed to inflation for 2006-07 and thereafter
2. Wage Increases	0.7%	1.2%	1.7%
3. Inflation	1.5%	2.5%	3.5%
4. Labour Force Participation Rates – 2029-30 Canada less Québec, Northwest Territories and Nunavut (ages 18-34)	89.9%	83.5%	81.2%
5. Tuition Cost	CPI	CPI + 3.0%	CPI + 6.0%
6. Rate of Borrowing:			
Government cost of borrowing	3.2%	5.2%	7.2%
Student cost of borrowing	5.9%	7.9%	9.9%
7. Interest Relief Utilization	70%	100%	130%
8. Net Defaults	10.2%	14.2%	18.2%



## 1. Loan Limit

This scenario assumes that the loan limit of \$210 per week and thereafter is indexed annually to inflation, thereby showing the effect of many small increases to the limit. Contrary to the best-estimate scenario, the proportion of students at the loan limit will decrease in this scenario. However, the amount of total loans issued will increase gradually from 0.9% over total loans issued under the frozen limit in 2006-07 to 48% at the end of the projection period.

**Chart 9 New Loans Issued**

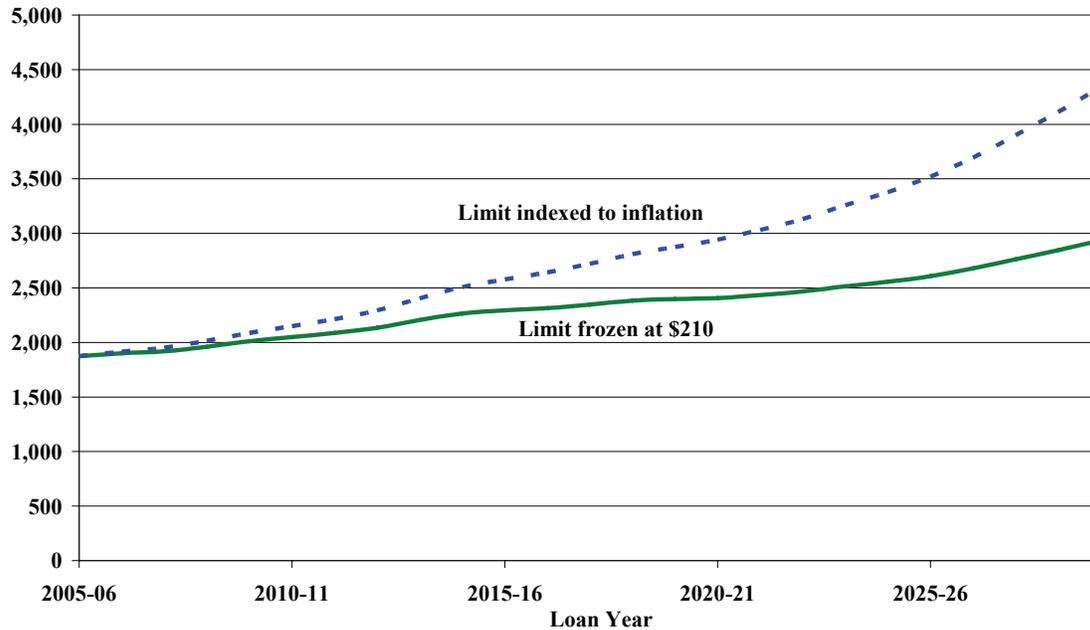
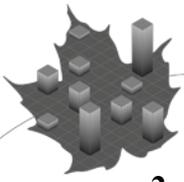


Chart 9 and Table 37 show the impact of gradually increasing the loan limit on loans issued compared to keeping the limit frozen.

**Table 37 Impact of Loan Limit on Loans Issued**

Loan Year	Increased to \$210 in 2005-06			Indexed to Inflation Starting in 2006-07				
	Limit	% of Students at the Limit	Loans Issued Total	Limit	% of Students at the Limit	Loans Issued		
						Total	Increase Over Frozen	
(\$)		(\$ million)	(\$)		(\$ million)	(\$ million)	(%)	
2004-05	165	52.9	1,633	165	52.9	1,633	-	-
2005-06	210	33.6	1,875	210	33.6	1,875	-	-
2006-07	210	35.6	1,900	214	33.7	1,917	17	1
2010-11	210	41.4	2,048	233	30.8	2,150	102	5
2015-16	210	51.9	2,294	263	29.6	2,577	283	12
2020-21	210	63.0	2,406	298	29.5	2,941	535	22
2025-26	210	72.4	2,607	337	30.7	3,518	911	35
2029-30	210	78.9	2,934	372	33.7	4,342	1,408	48



### 2. Wage Increases

Wage increases affect the CSLP by increasing the resources of a student determined in the need assessment process. This, in turn, reduces the need of a student, which can reduce a student's loan 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 its initial to its ultimate level. An ultimate real-wage differential of 1.2% has been assumed in years 2012-13 and thereafter for the best-estimate projections. Combined with the best-estimate inflation assumption of 2.5%, it results in assumed nominal annual increases in wages of 3.7% in 2012-13 and thereafter.

For the low-cost scenario, the assumed real-wage differential is reduced by 0.5%. This results in an ultimate level of 0.7% in 2012-13.

For the high-cost scenario, the assumed real-wage differential is increased by 0.5%. This results in an ultimate level of 1.7% in 2012-13. 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 2.5% has been assumed for the best-estimate projections. The rate of inflation is assumed to be 2.3% in 2005-06 and 2.0% in 2006-07 and 2007-08. The inflation rate is then assumed to increase uniformly and reach its ultimate level of 2.5% in 2012-13. 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 1.5% in 2012-13. This level of inflation is comparable to that of the 1960s and 1990s.

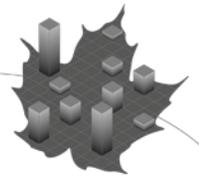
For the high-cost scenario, the annual rate of inflation is assumed to increase by 1.0%. This increases the long-term rate of inflation to 3.5% in 2012-13. This level of inflation is comparable to long-term historical averages.

### 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 decreasing 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 (ages 18 to 34), averaging 80.0%. For 2012 to 2029, it is assumed that participation rates will increase overall to 83.5% to compensate for the labour shortage.

For the low-cost scenario, participation rates are assumed to reach their highest historical level of 89.9% by 2029-30. 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 only 81.2% by 2029-30. 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 tuition increases relative to the CPI. Over the last 26 years, yearly tuition increases have, on average, corresponded to increases in the CPI plus 3.0%. Since budgetary pressures are anticipated in the future, given the aging of the population, CPI plus 3.0% was used as the 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 ultimate tuition increase is expected to correspond to increases in the CPI plus 6.0%. The anticipated budgetary pressures due to the aging of the population 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 assumption also affects the student 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.

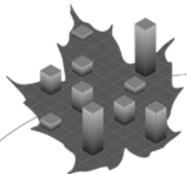
The low-cost scenario reduces the utilization rate of interest relief by 30%.

The high-cost scenario increases the utilization rate of interest relief by 30%. Better communication to students could increase awareness of the existence of this relatively new extended benefit, which would 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 14.2%, which corresponds to a provision rate of 14.6% 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 10 percentage points to 25.4% and the recovery rate remains unchanged at 60%. Subsequently, the net default rate is 10.2%, with a corresponding provision rate of 10.6% of new loans issued. An assumed enhanced economic environment in the future will reduce the default rate. Potential better communication with students could also serve to reduce this rate.



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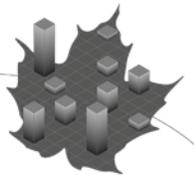
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In the high-cost scenario, the gross default rate is increased by 10 percentage points to 45.4% and the recovery rate remains unchanged at 60%. Subsequently, the net default rate is 18.2%, with a corresponding provision rate of 18.6% of new loans issued. The economic environment is assumed to be worse in this scenario with a higher unemployment rate for students.

**Table 38 Sensitivity Tests Results for Loan Year 2029-30**

Assumptions	Scenario	Loans		Average	Portfolio		Net	
		Issued	Increase	Growth	July	Increase	Cost	Increase
		(\$ million)	%	%	(\$ million)	%	(\$ million)	%
Base scenario	Best-estimate	2,934	-	2.4	19,810	-	1,357	-
Sensitivity tests								
1 - Increase limit to \$210 in 2005-06, and indexed to inflation thereafter	High-cost	4,342	48.0	4.0	26,768	35.1	1,765	30.1
2 - Wage differential -0.5%	Low-cost	2,963	1.0	2.4	20,003	1.0	1,335	-1.7
2 - Wage differential +0.5%	High-cost	2,862	-2.5	2.3	19,486	-1.6	1,371	1.0
3 - Inflation -1%	Low-cost	2,663	-9.2	2.0	18,262	-7.8	1,104	-18.7
3 - Inflation +1%	High-cost	3,237	10.3	2.8	21,832	10.2	1,666	22.8
4 - High labour force participation	Low-cost	2,013	-31.4	0.8	14,862	-25.0	1,087	-19.9
4 - Low labour force participation	High-cost	3,232	10.1	2.8	21,684	9.5	1,446	6.6
5 - Tuition: CPI	Low-cost	2,239	-23.7	1.3	15,824	-20.1	1,551	-15.2
5 - Tuition: CPI +6%	High-cost	3,534	20.5	3.1	23,014	16.2	1,536	13.1
6 - Interest rate -2%	Low-cost	2,934	0.0	2.4	19,378	-2.2	1,163	-14.3
6 - Interest rate +2%	High-cost	2,934	0.0	2.4	20,213	2.0	1,554	14.5
7 - Interest relief utilization 70%	Low-cost	2,934	-	2.4	19,524	-1.4	1,330	-2.0
7 - Interest relief utilization 130%	High-cost	2,934	-	2.4	20,093	1.4	1,385	2.1
8 - Net default rate 10.2%	Low-cost	2,934	-	2.4	19,334	-2.4	1,154	-15.0
8 - Net default rate 18.2%	High-cost	2,934	-	2.4	20,250	2.2	1,560	14.9



## **Appendix 5 – Acknowledgements**

We would like to thank the staff of the Director General Office, Canada Student Loans Program of the Department of Human Resources and Social Development that provided the relevant data used in this report. Without their useful assistance, we would not have been able to produce this report.

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