Office of the Superintendent of Financial Institutions Canada
Bureau du surintendant des institutions financières Canada

Office of the Chief Actuary
Bureau de l'actuaire en chef

ACTUARIAL REPORT

on the

CANADA STUDENT LOANS PROGRAM

as at 31 July 2017

Canada

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26 June 2018

The Honourable Patricia A. Hajdu, P.C., M.P.
Minister of Employment, Workforce Development, and Labour
House of Commons
Ottawa, Canada
K1A 0A6

Dear Minister:

In accordance with section 19.1 of the *Canada Student Financial Assistance Act*, which provides that a report shall be prepared on financial assistance provided under this Act, I am pleased to submit the Actuarial Report on the Canada Student Loans Program, prepared as at 31 July 2017.

Yours sincerely,

Jean-Claude Ménard, F.S.A., F.C.I.A.
Chief Actuary
Office of the 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, as well as a portfolio projection. The results are presented on a loan year basis from 1 August to 31 July.

A. Purpose of the Report

Section 19.1 of the *Canada Student Financial Assistance Act* provides that the Chief Actuary of the Office of the Superintendent of Financial Institutions shall prepare a report on the financial assistance provided under this Act no later than three years apart. This is the sixth statutory Actuarial Report on the CSLP, prepared as at 31 July 2017. As provided in subsection 19.1(3), the report includes a forecast of the costs and revenues of the Program for the next 25 years (through the 2041-42 loan year). The purpose of the actuarial review of the CSLP is to provide a valuation of the Program's overall financial costs and increase the level of information provided to the Minister of Employment, Workforce Development and Labour, Parliament and the public. The next triennial statutory report will be prepared as at 31 July 2020. Interim reports for Employment and Social Development Canada (ESDC) accounting purposes will be prepared as at 31 July 2018 and 31 July 2019.

The report shows estimates of:

- the number of students receiving a loan under the CSLP and the amount of new loans issued;
- the portfolio of loans in-study, loans in repayment and loans in default;
- the allowances under the direct loan regime in effect since August 2000; and
- the revenues, the expenses and the net resulting cost by type of regime.

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, while section D contains projections for the operating cost of the Program for all three regimes. A conclusion of the actuarial review ensues, followed by the actuarial opinion regarding the review.

The various appendices provide supplemental information on Program provisions, data used, a reconciliation of the portfolio, a description of assumptions and methods employed, sensitivity tests conducted as well as concessionary terms.

C. Main Findings

The following summarizes the main findings of this Actuarial Report. The results are presented on a loan year basis from 1 August to 31 July. Comparisons with the previous report refer to the interim report, prepared as at 31 July 2016[1].

- Budgets 2016 and 2017 increased the amount of student loans and grants provided to Canadians for post-secondary education:
    - In 2016-17, $2,628 million in new loans were issued to 497,000 students. New loans issued are projected to increase to $3,317 million in 2017-18 due to the introduction of the fixed student contribution. It is expected to reach $5,230 million by the end of the projection period in 2041-42.
    - In 2016-17, $1,015 million of Canada Student Grants (CSG) were disbursed to 380,000 students. CSG are projected to increase to $1,372 million in 2017-18, considering the new single progressive income threshold.
- The direct loan portfolio increases from $18.2 billion as at 31 July 2017 to $38.5 billion by the end of the projection period. The $24 billion limit on the aggregate amount of outstanding loans is projected to be reached in 2021-22.
- The total net cost (expenses less revenues) of the Government's involvement in the CSLP is expected to grow from $1.7 billion in 2016-17 to $3.8 billion in 2041-42, which represents an average annual increase of 3.2%. Grants disbursed represent 57% of the Program's net cost in 2016-17.
- The future default rate, net of recoveries, is unchanged from the previous report at 9.0% of consolidations. Higher than expected utilization of the Repayment Assistance Plan (RAP) was observed.
- Three allowances are accounted for to cover the future risk of loss associated with the Program:
    - The allowance for bad debt – principal covers the risk of future default, net of recoveries. It corresponds to $2,538 million as at 31 July 2017, which is slightly lower than the $2,577 million projected in the previous report.
    - The allowance for bad debt – interest covers the risk that the interest accrued on defaulted loans will never be recovered. It corresponds to $224 million as at 31 July 2017, which is comparable to the $222 million projected in the previous report.
    - The allowance for the RAP – principal recognizes that part of the loan principal of borrowers benefiting from RAP-Stage 2 and RAP-PD will be paid by the Government. It corresponds to $1,213 million as at 31 July 2017, which is higher than the $1,075 million projected in the previous report. The increased income eligibility thresholds for the RAP announced in Budget 2016 are taken into account in the determination of this allowance.
    - Overall, there is an increase of $101 million (a 2.6% increase) for the three allowances as at 31 July 2017 compared with the projections in the previous report.

[1] The interim report as at 31 July 2016 can be found on http://www.osfi-bsif.gc.ca/Eng/Docs/CSLP_2016.pdf

II. Main Report

The Canada Student Loans Program (CSLP) has been in effect since 1964; it provides Canadians with financial assistance to pursue a post-secondary education. 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, and a portfolio projection. The results are presented on a loan year basis from 1 August to 31 July.

Section A of the report provides a brief discussion of the best-estimate assumptions. The projection of loans issued to eligible students for each loan year is presented in section B. This includes a projection of the population in order to determine the future number of students enrolled in post-secondary education and thus eligible to qualify for a loan under the CSLP. The projection of the loan portfolio for each regime (guaranteed, risk-shared, and direct) is provided in section C and the forecast of the CSLP's net cost is presented in section D. The government has been incurring higher public debt charges since the implementation of the direct loan arrangement. The costs related to direct loans include the interest subsidy on in-study loans, the interest relief from the Repayment Assistance Plan (RAP), the provisions for RAP (principal) and bad debt (principal and interest), the Canada Student Grants (CSG), the alternative payments, loan forgiveness and administrative expenses. The costs are reduced by an estimate of the net interest revenues coming from student interest payments, RAP interest payments and the net interest accrued during the six-month non-repayment period and on defaulted loans.

The actuarial estimates in this report are based on the current provisions of the Program as described in Appendix 1. Appendix 2 provides additional information on some of the data used for this valuation. The portfolio reconciliation is presented in Appendix 3. Appendix 4 summarizes the assumptions and methodology used. Appendices 5 and 6 present sensitivity tests and information on concessionary terms respectively.

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 the actuary's best judgment and are referred to as "best-estimate" assumptions. Some of these assumptions are based on the most recent actuarial reports prepared by the Office of the Chief Actuary, 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 between them. The following sections present the assumptions used as well as their future evolution.

1. Demographic Assumptions

Demographic projections are based on the population projected in the 27th Actuarial Report on the Canada Pension Plan as at 31 December 2015. More specifically, it starts with the Canadian and Québec populations on 1 July 2015, to which future fertility, mortality and migration assumptions are applied. The population of Canada is adjusted to exclude the non-participating province of Québec as well as the Northwest Territories, Nunavut, and the non-permanent residents. The CPP population projections are essential in determining the future number of students expected to pursue 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.

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. Due to its size, this generation has exerted the strongest single influence on Canadian demographics over the last several decades and will continue to do so over the next 20 years.

When the “baby-boom” generation entered the labour market it created an abundance of workers, which increased the unemployment rate and influenced the transition from school to work. The poor labour market conditions of the 1900s meant that youths aged 15-24 were less likely to find work and thus, more likely to remain in school than youths in previous decades.

Today, a large proportion of baby-boomers have already retired. The aging of this cohort creates a strong labour demand that will likely entice youths to leave school earlier to enter the labour market.

Inflation, Tuition Fees and Wage Increases

Price increases, as measured by changes in the Consumer Price Index, tend to fluctuate from year to year. In 2016, the Bank of Canada and the Government renewed their commitment to keep inflation between 1% and 3% until the end of 2021, targeting the 2% midpoint of the range. A price increase rate of 1.8% is assumed for the 2017-18 loan year. Beginning in 2018-19, the rate is expected to settle at 2.0%.

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 (including compulsory fees) have been treated separately from other expenses in the previous years since their evolution is, in part, a result of government policies. Based on provincial budgets and actual tuition increases as reported in news releases, the tuition increase is estimated to be 2.6% for loan years 2017-18 to 2019-20. In the previous years, 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 the population. Thus, tuition fees are indexed at the rate of inflation plus 2.0% for the long term, in accordance with the experience observed over the last ten years. As with compulsory fees, an analysis of the available data (2010-11 to 2015-16) revealed that they have been increasing at an average annual rate of 4.8%, which is used for the annual compulsory fees increase starting in 2019-20.

Future student resources, including student, parental and spousal contributions, are influenced by increases in the average annual earnings. Increases in average earnings are related to changes in the labour market supply. Therefore, the expected strong labour demand resulting from the aging population will likely lead to a higher real wage growth. The real wage growth is projected to increase from 0.5% in 2017-18 to 1.1% in 2024-25. It then remains at that level for the rest of the projection period.

Cost of Borrowing

Since August 2000, borrowers are indebted to the Government of Canada 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, a loan's duration is a combination of three periods. The first one is the study period when the student is in school and receives an interest subsidy; this period lasts approximately three years. The following period generally covers the six months after the end of studies (the non-repayment period) when interest accrues but no payment is required. The third and final period is the one where the student is expected to repay the loan; a normal repayment period lasts 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. It is estimated to be 2.1% for the 2017-18 loan year and is anticipated to gradually increase to reach an ultimate rate of 4.2% for the 2026-27 loan year. Table 1 presents the assumptions related to the cost of borrowing for the Government as well as for borrowers. The Government's cost of borrowing is the sum of the real Government's cost of borrowing and the rate of inflation.

Table 1 Borrowing Cost

Loan Year	Inflation (%)	Government's Real Cost of Borrowing (%)	Government's Cost of Borrowing (%)	Prime Rate (%)	Student's Cost of Borrowing (%)
	(1)	(2)	(1) + (2)	(3)	(3) + 250 bps
2017-18	1.8	0.3	2.1	3.3	5.8
2018-19	2.0	0.5	2.6	3.6	6.1
2019-20	2.0	1.0	3.0	3.8	6.3
2020-21	2.0	1.2	3.2	3.9	6.4
2021-22	2.0	1.3	3.3	4.0	6.5
2022-23	2.0	1.4	3.4	4.1	6.6
2023-24	2.0	1.6	3.6	4.2	6.7
2024-25	2.0	1.8	3.8	4.4	6.9
2025-26	2.0	2.0	4.0	4.6	7.1
2026-27+	2.0	2.2	4.2	4.8	7.3

The average prime rate for the 2017-18 loan year is 3.3%. The prime rate is expected to increase gradually to an ultimate rate of 4.8% in 2026-27. The student's cost of borrowing, used to calculate interest revenue, is the sum of the prime rate and a spread of 250 basis points. The student's cost of borrowing is 5.8% in 2017-18 and is expected to increase to an ultimate rate of 7.3% by the 2026-27 loan year.

3. Provision Assumptions

Since August 2000, the CSLP has been delivered and financed directly by the Government. Three allowances exist to cover future costs: bad debt – principal, bad debt – interest and Repayment Assistance Plan (RAP) – principal. The RAP came into effect in August 2009, replacing the former Debt Reduction in Repayment (DRR) and Interest Relief (IR) measures.

Long-Term Default and Recovery Rate Assumptions

The default and recovery rate assumptions are based on gross defaults (before recalls and rehabilitations). The ultimate assumptions are the same as in the previous report:

- The future gross default rate assumption is 14.8% of future consolidations.
- The recalls and rehabilitations represent 8.3% of gross defaults in the long term, which decreases the default rate to 13.6% [(14.8% x (1 – 8.3%)].
- The future recovery rate is 31.1% of gross defaults (before recalls and rehabilitations).
- The resulting future net default rate is 9.0% [14.8% x (1 – 8.3% – 31.1%)].

Allowance for Bad Debt – Principal for the 2017-18 Loan Year

The allowance for bad debt – principal is based on a prospective approach that uses a snapshot of the portfolio at a specific point in time to determine the amount of the allowance at that time. The calculation of the allowance is separated into three components according to the status of the loan; that is whether the loan is in-study, in repayment (according to the number of years since consolidation) or in default (according to the number of years since default).

The rehabilitation criteria were modified in March 2011. Instead of repaying all outstanding interest and the equivalent of six monthly payments, borrowers are now required to repay all outstanding interest and the equivalent of two monthly payments. Rehabilitations have increased in the last few years, most likely because more borrowers are able to meet the rehabilitation criteria. The introduction of RAP also created an incentive for borrowers who would meet the RAP criteria to rehabilitate their loans, as borrowers in default must bring their loans into good standing to become eligible for the RAP. In addition, ESDC has recently been working closely with the Canada Revenue Agency (CRA) to promote rehabilitation to borrowers in default which has contributed to an increase in loan rehabilitations as more borrowers are aware of the option to rehabilitate their loans.

a) The allowance component on the balance of loans in-study is determined using a blend of short and long-term assumptions as loans presently in study will consolidate according to the consolidation distribution over the next 15 years. The blended net default rate is 8.9%, which is slightly lower than the long-term net default rate of 9.0%. The net default rate of 8.9% needs to be adjusted to reflect the variation between loans at issuance and loans at consolidation. A small upward adjustment of 0.4% is required to account for the interest accrued during the six-month non-repayment period that is capitalized into loans at consolidation. Another adjustment is required to reflect future prepayments (payments received from students prior to consolidation). Based on the experience, prepayments represent approximately 15% of loans in-study, resulting in a provision rate for loans in-study rounded to 7.9% [(8.9% + 0.4%) x (1 – 15%)].

b) The allowance component on the balance of loans in repayment is determined using projected future defaults according to the number of years since consolidation. The recovery

rate assumption is then applied to determine the portion of projected defaulted loans that will not be recovered. This result corresponds to the allowance on the balance of loans in repayment. The future recovery rate is 31.1% for each gross default cohort; hence, it is assumed that 68.9% (1 – 31.1%) of the projected gross defaulted loans (before recalls and rehabilitations) will not be recovered. The resulting provision rate on outstanding loans in repayment for the 2017-18 loan year is 3.9%. This is lower than the provision rate of 7.9% for loans in-study since the portfolio in repayment includes cohorts of loans for which some defaults and partial reimbursements have already occurred, resulting in a lower inherent risk of loss for the remaining loans.

c) The last allowance component is the one on the balance of loans in default that will not be recovered. The resulting provision rate on outstanding loans in default for the 2017-18 loan year is 77.3%. This rate is higher than the non-recovery rate of 68.9% (1 – 31.1%) since the portfolio in default includes cohorts of loans that have been transferred in default for a certain number of years and for which some recoveries have already occurred. Thus, the remaining loans have aged and have an increased risk of loss.

In summary, the provision rates for the 2017-18 loan year are: 7.9% for loans in-study, 3.9% for loans in repayment and 77.3% for loans in default.

The level of the total allowance is determined at the end of the loan year. The annual expense for bad debt – principal is equal to the difference between the total allowance at the end of a year and the total allowance at the end of the previous year net of write-offs that have occurred during the year.

Allowance for Bad Debt – Interest for the 2017-18 Loan Year

The allowance for bad debt – interest is based on the account's recoverable status and the number of years since default. The interest accrued on defaulted 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 the outstanding interest at the end of each year. The provision rate is 26.3% of interest accrued in the first year after loans are transferred in default. It increases in each of the four subsequent years before decreasing in the sixth and seventh years when a large portion of interest is transferred to the "non-recoverable" status because of the six-year limitation period (statute of limitations). The provision rate increases each year thereafter. The provision rate for the allowance on non-recoverable accounts is 100%. Under this methodology, the increasing provision rate reflects the fact that the difficulty of recovering defaults increases with time. The annual expense for bad debt – interest is equal to the difference between the total allowance at the end of a year and the total allowance at the end of the previous year net of write-offs that have occurred during the year.

The provision rates for bad debt – interest are slightly revised upward in this report to reflect recent experience. The set of provision rates used to determine the allowance on recoverable accounts in the 2017-18 loan year is shown in Table 2.

Allowance for the Repayment Assistance Plan – Principal for the 2017-18 Loan Year

The two stages of the RAP are aimed to help student borrowers, who apply and meet the eligibility criteria, fully repay their student loan within fifteen years (or ten years for borrowers with permanent disabilities). During Stage 1, the Government covers the monthly interest amount owed that the borrower's affordable payment does not cover. Stage 2 begins once the borrower has completed five years in Stage 1, or has been in repayment for ten years following

the end of the study period. The Government continues to cover the interest, as in Stage 1, but also begins to cover a portion of the student loan's principal amount (i.e. the difference between the required and affordable payment). Borrowers with a permanent disability can elect to apply for either RAP Stage 2 or RAP-PD, on approval of their RAP-PD application.

The RAP – principal provision covers future costs related to RAP-Stage 2 and RAP-PD, which corresponds to the portion of the loan principal paid off by the Government. As with the provision for bad debt – principal, the methodology to determine the provision rates and allowance for the RAP – principal is based on a prospective approach that uses a snapshot of the portfolio at a particular point in time to determine the amount of the allowance at that time. The calculation of the allowance is separated into three components according to the status of the loan; that is whether the loan is in-study, in repayment (excluding loans in the RAP) or in the RAP (considering the current stage). The provision rates are set based on current and future RAP utilization rates at each stage. Three distinct provision rates, depending on the status of the loan at a given time, will be used to determine the required allowance. The provision rates for the 2017-18 loan year are: 5.3% for loans in-study, 1.3% for loans in repayment (net of loans in the RAP), and 22.2% for loans in the RAP (all stages combined). These rates are higher than the rates presented in the previous report. This increase is consistent with the recent experience showing higher RAP utilization than expected following the new RAP eligibility thresholds introduced in 2016-17 by Budget 2016.

The annual expense for the RAP – principal provision is equal to the difference between the total allowance at the end of a year and the total allowance at the end of the previous year net of the current year's expenses.

The RAP is a program that was introduced in 2009 and thus, has limited experience. The related projection of costs and underlying assumptions may be revised in the future as experience emerges, and the provision rates would then be updated accordingly. As with the former Interest Relief measure, a modest provision for the RAP – interest is determined by ESDC for accounting purposes to take into account the timing of the interest accrued.

Table 2 shows the provision rates used to determine the allowances in the 2017-18 loan year for Public Accounts purposes. The provision rates for future loan years evolve with the aging of the loan cohorts.

Table 2 Provision and Allowance Assumptions

Type of Provision		Assumptions
		(%)
Bad Debt – Principal		
On the outstanding balance of loans:		
In-Study		7.9
In Repayment		3.9
In Default		77.3
Repayment Assistance Plan – Principal		
On the outstanding balance of loans:		
In-Study		5.3
In Repayment (net of loans in RAP)		1.3
In the Repayment Assistance Plan (all stages combined)		22.2
Bad Debt – Interest	**Year Since Default**	(%)
On outstanding recoverable interest	1st	26.3
	2nd	36.9
	3rd	47.2
	4th	57.0
	5th	67.4
	6th	58.7
	7th	53.1
	8th	55.6
	9th	58.1
	10th	61.0
	11th	64.8
	12th	70.7
	13th	79.2
	14th	88.9
	15th	100.0

The calculation of the allowance is separated into three components according to the status of the loan:

Status	Description
• In-Study:	Loans for students currently enrolled in a post-secondary institution and for those who have terminated their studies within the last six months (six-month non-repayment period).
• In Repayment:	Loans for borrowers in the repayment period, including delinquent loans and loans approved or waiting for the RAP. In the calculation of the provision for the RAP – principal, they are further split, with loans in the RAP being considered together as a subgroup.
• In Default:	Loans for which no payments have been made for at least nine months but for which the government might be able to recover money.

Table 3 contains a summary of the best-estimate assumptions used for this report.

Table 3 Best-estimate Assumptions

1.	Total fertility rate for Canada (ultimate)	1.65 per woman	
2.	Mortality	Canadian Human Mortality Database with assumed future improvements	
3.	Net migration rate for Canada (ultimate)	0.62% of population	
4.	Youth participation rate (participating provinces/territory, ages 15-29)	70.2%	(2017-18)
		70.7%	(2018-19)
		71.0%	(2019-20)
		• • •	
		73.2%	(2041-42)
5.	Real wage increases	0.5%	(2017-18)
		0.8%	(2018-19)
		0.9%	(2019-20)
		1.0%	(2020-21)
		• • •	
		1.1%	(2024-25+)
6.	Inflation	1.8%	(2017-18)
		2.0%	(2018-19)
7.	Tuition fee increases	3.1%	(2017-18)
		2.6%	(2018-19)
		2.6%	(2019-20)
		2.6%	(2020-21)
		2.9%	(2021-22)
		• • •	
		CPI + 2.0%	(2025-26+)
8.	Government's cost of borrowing	2.1%	(2017-18)
		2.6%	(2018-19)
		3.0%	(2019-20)
		• • •	
		4.2%	(2026-27+)
9.	Student's cost borrowing	5.8%	(2017-18)
		6.1%	(2018-19)
		6.3%	(2019-20)
		• • •	
		7.3%	(2026-27+)
10.	Provision rate for Bad Debt – Principal (2017-18)	7.9%	of the portfolio in-study
		3.9%	of the portfolio in repayment
		77.3%	of the portfolio in default
11.	Provision rate for RAP – Principal (2017-18)	5.3%	of the portfolio in-study
		1.3%	of the portfolio in repayment (net of loans in RAP)
		22.2%	of the portfolio in the RAP
12.	Provision rate for Bad Debt – Interest (2017-18)	26.3%	(Interest on loans in default for less than a year)
		• • •	
		58.7%	(Interest on loans in default for 5 to 6 years)
		• • •	
		100.0%	(Interest on loans in default for 14 to 15 years)

B. Projection of Total Loans Issued

The purpose of this section is to discuss the projection of the total amount of loans issued by the CSLP. The first step is to project full-time enrolment in post-secondary institutions. The future number of students participating in the CSLP is determined using a projection of the loan uptake rate. Finally, the average assessed need of a CSLP student is projected net of grants and capped according to the loan limit. The total amount of loans issued is then calculated by multiplying the average assessed need with the number of students in the CSLP.

The projections include modifications to the CSLP introduced by Budget 2016:

- Starting in the 2016-17 loan year, CSG amounts were increased by 50% for students from low- and middle-income families as well as for part-time students.
- Starting in November 2016, based on the increased loan repayment threshold under RAP, no student will have to repay their CSL until they are earning at least $25,000 per year ($25,000 is the threshold for a single student with no dependents, which scales up based on family size).
- Starting in the 2017-18 loan year, a single progressive threshold was introduced to determine eligibility for the CSG for full-time students (CSG-FT), replacing the former low- and middle-income cut-offs.
- Starting in the 2017-18 loan year, a fixed student contribution was introduced to determine eligibility for student loans and grants. Under the fixed student contribution, determined by family income and size, students are expected to contribute between $1,500 and $3,000 per loan year toward their post-secondary education costs. Students with disabilities, students with dependent children, Indigenous students, and current or former Crown wards are exempt from the fixed student contribution.

The projections also include modifications to the CSLP introduced by Budget 2017 and taking place in the 2018-19 loan year:

- Expanding eligibility for CSG and CSL for part-time students by replacing low- and middle-income cut-offs with the same single progressive thresholds used for the CSG-FT.
- Expanding eligibility for CSG for student with dependent children by replacing low- and middle-income cut-offs with the same single progressive thresholds used for the CSG-FT.

Starting in the 2018-19 loan year, a three-year pilot project will be implemented to provide adults returning to school full-time, who have been out of secondary school for at least 10 years, with a top-up grant funding of $1,600 per school year. The pilot project allows these students who experience a decline in income to be reassessed for CSG based on their reduced current year's income while in school as opposed to their prior year's income. This three-year pilot project will make it easier for these adult full-time students to qualify for grants.

1. Projection of Full-time Post-secondary Enrolment

The first step is to determine the projected number of full-time students in post-secondary institutions using demographic projections.

Demographic Projections

Demographic projections are based on the population projected in the 27th Actuarial Report on the Canada Pension Plan as at 31 December 2015. The population of Canada less Québec,

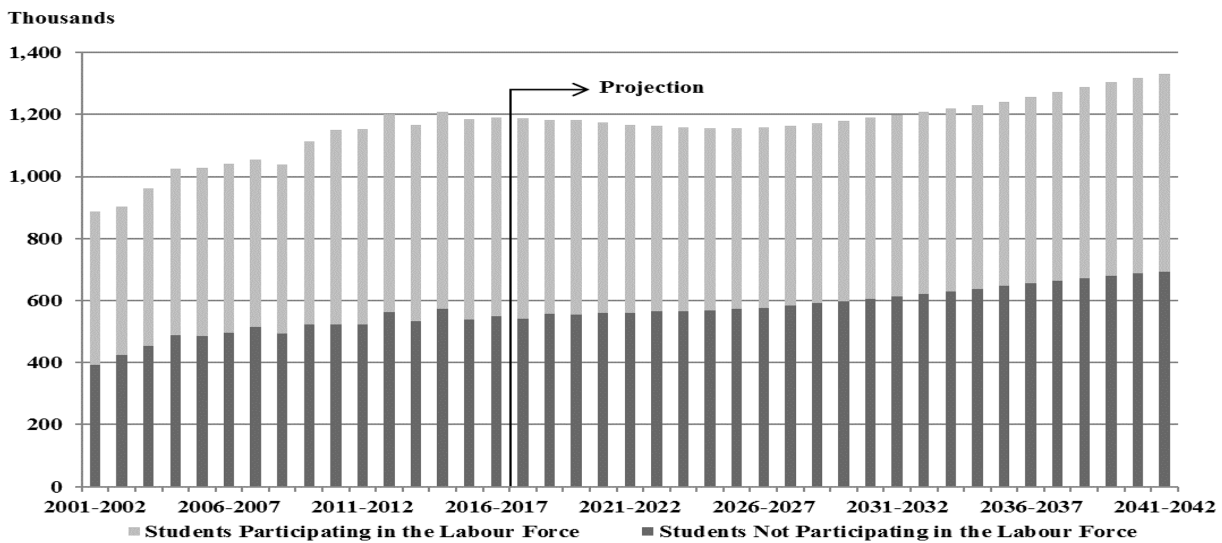
Northwest Territories, Nunavut, and non-permanent residents is used to project the number of students enrolled in post-secondary institutions.

The population aged 15-29 is expected to decrease from 5,116,000 in 2016-17 to 5,081,000 in 2017-18. It is expected to continue to decrease for the following ten years, bringing it to 4,729,000 in 2027-28. In the following fourteen years, the population aged 15-29 is expected to increase and reach 5,464,000 by 2041-42. Overall, as Table 4 shows, an increase of 348,000 is expected in the population aged 15-29 over the 25-year projection period.

Post-secondary Enrolment

The number of students enrolled full-time in post-secondary institutions is based on both the evolution of the population in labour force (persons who are employed or looking for employment) and the population not in labour force. The individuals who are not participating in the labour force may be more inclined to pursue a post-secondary education; however, due to economic pressures, many students are working part-time or looking for employment during the course of their post-secondary education and are thus part of the labour force population. Based on historical data for the population aged 15-29 (from 2000-01 to 2016-17), 47% of students enrolled full-time in post-secondary institutions were participating in the labour force while 53% were not participating in the labour force. As described in Appendix 4, post-secondary enrolment has been projected separately according to labour force status. Chart 1 shows both the historical and the projected post-secondary enrolment by labour force status for full-time students.

Chart 1 Evolution of Enrolment in Post-Secondary Institutions by Labour Force Status



Enrolment in post-secondary institutions also varies according to the student's age group, gender and whether the student is in college or university. Therefore for projection purposes enrolment is separated into these groups for both labour force status. Non-permanent residents and international students are now excluded from the projection since they are not eligible to participate in the CSLP. As a result of this change, population and students enrolled are lower compared with the previous report.

Projections are based on enrolment data from Statistics Canada's Labour Force Survey up to February 2018. Table 4 shows the evolution of the population aged 15-29, along with the number

of students enrolled full-time in a post-secondary institution (age group 15-29 and total). The students aged 15-29 are used for illustrative purposes as they represent more than 85% of the total post-secondary enrolment and better demonstrate the movement of this population across time. Total full-time enrolment in post-secondary institutions (all ages) is also presented in Table 4.

Table 4 Population and Post-Secondary Enrolment(1)

Loan Year	Population of Canada Less Québec, Nunavut, and NWT (15-29)(2) (thousands)	Students Enrolled Full-Time (15-29)(3) (thousands)	Students Enrolled Full-Time (Total)(3) (thousands)	Increase (thousands)	Increase (%)
2016-17	5,116	1,051	1,190		
2017-18	5,081	1,047	1,188	-2	-0.1
2018-19	5,044	1,054	1,183	-5	-0.4
2019-20	5,000	1,038	1,181	-2	-0.2
2020-21	4,942	1,031	1,175	-6	-0.5
2021-22	4,891	1,022	1,166	-9	-0.8
2022-23	4,850	1,020	1,165	-1	-0.1
2023-24	4,818	1,014	1,159	-6	-0.5
2024-25	4,787	1,011	1,156	-3	-0.2
2025-26	4,755	1,010	1,155	-1	-0.2
2026-27	4,730	1,012	1,157	2	0.2
2027-28	4,729	1,019	1,163	6	0.5
2028-29	4,745	1,028	1,172	9	0.7
2029-30	4,774	1,036	1,180	8	0.7
2030-31	4,812	1,046	1,189	9	0.8
2031-32	4,864	1,056	1,199	10	0.9
2032-33	4,928	1,066	1,210	11	0.8
2033-34	4,996	1,076	1,219	9	0.8
2034-35	5,062	1,086	1,230	11	0.9
2035-36	5,131	1,098	1,242	12	1.0
2036-37	5,197	1,113	1,257	15	1.3
2037-38	5,255	1,128	1,273	16	1.3
2038-39	5,307	1,142	1,289	16	1.2
2039-40	5,359	1,156	1,304	15	1.2
2040-41	5,410	1,169	1,318	14	1.1
2041-42	5,464	1,180	1,331	13	1.0

(1) Full-time enrolment in post-secondary institutions in Canada, excluding Québec, Nunavut, NWT.
(2) Excluding non-permanent residents.
(3) Excluding international students.

The future population enrolled full-time in a post-secondary institution is determined by multiplying projected enrolment rates for each future year to its corresponding projected population. Based on enrollment data provided by Statistic Canada for the first half of the 2017-18 loan year, students enrolled full-time, excluding international students, are projected to decrease until 2025-26 due to a decline in the population aged 15-29. The year-over-year variation should eventually revert to a steady increase and the number of enrolled students should surpass its current level towards the end of the projection period.

2. Student Need

Not every student 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. The need is defined as the excess of expenses over resources, if positive. The expenses assessed include tuition fees, compulsory fees, books, shelter, food and

transportation. The loan issued by the federal Government under the CSLP covers 60% of the assessed need, up to a maximum of $210 per week. Sometimes, a student's need is completely fulfilled by a grant and no loan is issued. Future distributions of student need are projected using the CSLP need assessment data for the 2015-16 loan year provided by Employment and Social Development Canada (ESDC). Low- and middle-income CSG amounts were increased by 50% effective from 2016-17 loan year. In addition, a single progressive threshold was introduced in the 2017-18 loan year to determine eligibility for the CSG-FT. These changes increase the average grant and the number of grant recipients and decrease the average student net need.

For projection purposes, students are separated into three groups based on the type of educational institution they attend (college, university or private). The results are aggregated using a weighted average based on the number of students.

Table 5 summarizes the three main elements of student need, as well as the average student need, average grant used for the net need calculation and CSLP average student net need (net of grant). The average resources and expenses specific to the students receiving a loan is presented for the average number of study week. Note that resources for the 2017-18 loan year and the following years reflect the change to a fixed student contribution announced in Budget 2016. Under the new resources assessment model, students' pre-study and in-study incomes, as well as all financial assets, are replaced by a fixed student contribution amount between $1,500 and $3,000. Students with disabilities, students with dependent children, Indigenous students, and current and former crown wards are exempt from the fixed student contribution. There is no change in the assessment of parental contribution. The new fixed student contribution model generally decreases resources considered in the need assessment process. Consequently, most students will be eligible to receive more in loans and grants under this new model.

Table 5 Student Need(1)

Loan Year	Resources ($)	Tuition ($)	Other Expenses ($)	Total Expenses ($)	Average Student Need ($)	Average Grant for Net Need Calculation(2) ($)	CSLP Average Student Net Need(3) ($)	CSLP Average Student Net Need Increase ($)
	(1)	(2)	(3)	(4) = (2) + (3)	(5) = (4) - (1)	(6)	(7) = (5) * 0.6 - (6)	
2016-17	5,300	8,600	10,800	19,400	14,100	2,000	6,500	
2017-18	2,600	8,700	11,300	20,000	17,500	2,300(4)	8,100	1,600
2018-19	2,600	9,000	11,500	20,500	17,900	2,300	8,400	300
2019-20	2,600	9,200	11,700	20,900	18,300	2,300	8,700	300
2020-21	2,700	9,500	12,000	21,400	18,800	2,300	9,000	300
2021-22	2,700	9,700	12,200	21,900	19,200	2,300	9,300	300
2022-23	2,700	10,100	12,400	22,500	19,800	2,300	9,600	300
2023-24	2,800	10,400	12,700	23,100	20,300	2,300	9,900	300
2024-25	2,800	10,800	12,900	23,700	20,900	2,200	10,300	400
2025-26	2,900	11,300	13,200	24,400	21,500	2,200	10,700	400
2026-27	2,900	11,700	13,400	25,100	22,200	2,200	11,100	400
2027-28	3,000	12,200	13,700	25,800	22,900	2,200	11,500	400
2028-29	3,000	12,700	13,900	26,600	23,600	2,200	12,000	500
2029-30	3,000	13,200	14,200	27,400	24,300	2,200	12,400	400
2030-31	3,100	13,700	14,400	28,200	25,100	2,200	12,900	500
2031-32	3,100	14,300	14,700	29,000	25,900	2,200	13,400	500
2032-33	3,200	14,900	15,000	29,900	26,700	2,100	13,900	500
2033-34	3,300	15,500	15,300	30,800	27,500	2,100	14,400	500
2034-35	3,300	16,100	15,600	31,700	28,400	2,100	14,900	500
2035-36	3,400	16,800	15,900	32,700	29,300	2,100	15,500	600
2036-37	3,400	17,500	16,200	33,700	30,200	2,100	16,000	500
2037-38	3,500	18,200	16,500	34,700	31,200	2,100	16,600	600
2038-39	3,600	18,900	16,800	35,700	32,200	2,100	17,200	600
2039-40	3,600	19,700	17,100	36,800	33,200	2,100	17,900	700
2040-41	3,700	20,500	17,400	38,000	34,300	2,000	18,500	600
2041-42	3,800	21,400	17,800	39,100	35,400	2,000	19,200	700

(1) Some numbers do not reconcile properly due to rounding.
(2) This average grant is strictly used for the purpose of calculating the net need, hence included in the calculation are all students receiving a loan (including the 151,000 with a grant of $0). The real average grant (paid only to grant recipients) would be $2,611 in the 2016-17 loan year.
(3) The loan amount paid by the federal Government represents 60% of the assessed need reduced by grants.
(4) The low- and middle-income CSG are replaced by the CSG-FT with a single progressive threshold (Budget 2016).

Table 5 shows that tuition fees are the primary source of increase in student need. They are ultimately indexed at 2.0% above inflation. This assumption is based on the average increase over the last ten years. Other expenses, which include books, shelter, food and transportation, are indexed at the rate of inflation.

The net need increases over time since expenses are assumed to increase at a faster pace than resources. It is anticipated that as the student net need increases, newly eligible participants will enter the CSLP because their previously negative net need became positive or their net need increased enough that it became worthwhile to take a loan.

3. Number of Students in the Canada Student Loans Program (CSLP)

The projected number of students in the CSLP is based on the expected future enrolment, as well as the future loan uptake rate. 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 pace than resources, especially since the implementation of the fixed student contribution for which the minimum and maximum amounts ($1,500 and $3,000) are

kept constant for the entire projection period. Students with disabilities, students with dependent children, Indigenous students, and current and former Crown wards are exempt from the fixed student contribution.

The product of the number of students enrolled full-time and the CSLP loan uptake rate gives the number of students in the CSLP. Table 6 shows that the loan uptake rate is expected to increase from 41.8% in 2016-17 to 55.4% in 2041-42, adding 240,000 students to the Program (from 497,000 students in 2016-17 to 737,000 in 2041-42). The number of students in the CSLP shown in Table 6 represents those who receive a Canada Student Loan in each loan year; it does not include the small proportion of students that only receives a CSG because their assessed need was lower than the maximum amount of grant they were eligible for, and the grant therefore covered their total need (no loan was issued). According to the ESDC data file, the total number of students who received a grant in the 2016-17 loan year is 380,000. The majority of grant recipients (91%) received both a loan and a grant. For the 2017-18 loan year, the increase in the loan uptake rate is mainly attributable to the change in student contribution formula.

Table 6 Loan Recipients

Loan Year	Students Enrolled Full-Time (thousands)	Loan Uptake Rate (%)	Students in CSLP (thousands)	Annual Increase in CSLP Students (thousands)	Annual Increase in CSLP Students (%)
	(1)	(2)	(1) x (2)		
2016-17	1,190	41.8	497		
2017-18	1,188	49.6	589	92	18.5
2018-19	1,183	49.7	588	-1	-0.2
2019-20	1,181	50.3	594	6	1.0
2020-21	1,175	50.4	592	-2	-0.3
2021-22	1,166	50.6	590	-3	-0.4
2022-23	1,165	50.7	591	1	0.2
2023-24	1,159	51.0	591	0	0.0
2024-25	1,156	51.3	593	2	0.3
2025-26	1,155	51.5	595	2	0.3
2026-27	1,157	51.7	599	4	0.7
2027-28	1,163	52.0	605	6	1.0
2028-29	1,172	52.2	612	7	1.1
2029-30	1,180	52.4	619	7	1.1
2030-31	1,189	52.7	626	8	1.3
2031-32	1,199	52.9	635	8	1.3
2032-33	1,210	53.2	643	8	1.3
2033-34	1,219	53.4	651	8	1.3
2034-35	1,230	53.7	660	9	1.3
2035-36	1,242	53.9	669	9	1.4
2036-37	1,257	54.1	681	11	1.7
2037-38	1,273	54.4	693	12	1.7
2038-39	1,289	54.6	704	12	1.7
2039-40	1,304	54.9	716	11	1.6
2040-41	1,318	55.1	726	11	1.5
2041-42	1,331	55.4	737	10	1.4

4. New Loans Issued

This section focuses on the determination of the amount of new loans issued in each loan year. The three factors primarily responsible for the evolution of new loans issued are student need, the amount of CSG disbursed, and the percentage of students reaching the loan limit.

Impact of Student Need on Loans Issued

An increasing student need puts growing pressure on new loans issued since more students become eligible for a loan and previously eligible students qualify for a larger loan. Table 7 shows that the average student need increases from $14,100 in 2016-17 to $35,400 in 2041-42. Although an increasing student need causes more students to become eligible to receive a loan, loans to newly eligible individuals are smaller in size and therefore reduce the growth of the average loan size. This indirectly moderates the average loan growth over the 25-year projection period.

Due to the introduction of the new fixed student contribution announced in Budget 2016, resources considered in the need assessment process are expected to increase at a much slower pace starting in the 2017-18 loan year. This results in a further increase in student need and expands the eligibility to student loans.

Impact of Grants on Loans Issued

The CSG introduced in the 2009-10 loan year alleviates the financial needs of many students, thus reducing the amount of loans issued by the Program. Since the 2016-17 loan year, the CSG amounts have increased by 50% for students from low- and middle-income families and for part-time students. In addition, the eligibility to CSG has been expanded starting in 2017-18 as the existing low- and middle-income cut-offs were replaced with a single progressive threshold under which grant amounts would gradually decline based on income and family size. The amount of grants disbursed (Table 15) is expected to increase from $1,015 million in 2016-2017 to $1,372 million in 2017-18. It is expected to further increase to $1,456 million in 2018-19 due to the increased eligibility for CSG for part-time students and students with dependent children as well as introduction of the adult learners' pilot project. Ultimately, the amount of grants disbursed is projected to reach $1,584 million in 2041-42. The CSG are described in Appendix 1.

Impact of Loan Limit on Loans Issued

A constant loan limit (currently $210 per week) restricts the growth of new loans issued. Over time, more students reach the loan limit without their needs being completely fulfilled. In the 2016-17 loan year, the percentage of students at the loan limit is 36.4% and Table 7 shows that this percentage is projected to increase to 43.0% in the 2017-18 loan year. The percentage of students receiving the maximum increases significantly in 2017-18 as most students are eligible to more loans under the new fixed student contribution formula. Since the minimum and maximum amounts of the fixed student contribution[1] remain unchanged at $1,500 and $3,000 for the projection, resources become much lower than student's costs in 25 years from now as student's costs are expected to increase at least with inflation. As a result, 93.9% of student are projected to receive the current loan limit of $210 per week in 2041-42. The maximum CSG amounts are also kept constant. A sensitivity test showing an alternate scenario with an increase to the fixed contribution limit is provided in Appendix 5.

[1] There are exemptions from the fixed student contribution (students with disabilities, students with dependent children, Indigenous students, and current or former crown wards).

Table 7 Increase in New Loans Issued

Loan Year	Average Student Need ($)	Increase (%)	% of Students at Limit[1]	New Loans Issued ($ million)	Increase (%)	Students in CSLP (thousands)	Increase (%)	Average Loan Size ($)	Increase (%)
				(1)		(2)		(1) / (2)	
2016-17	14,100	0.0	36.4	2,628	0.0	497	0.0	5,287	0.0
2017-18	17,500	24.1	43.0	3,317	26.2	589	18.5	5,632	6.5
2018-19	17,900	2.3	45.8	3,371	1.6	588	-0.2	5,733	1.8
2019-20	18,300	2.2	48.4	3,455	2.5	594	1.0	5,816	1.5
2020-21	18,800	2.7	50.6	3,502	1.4	592	-0.3	5,913	1.7
2021-22	19,200	2.1	52.9	3,543	1.2	590	-0.4	6,008	1.6
2022-23	19,800	3.1	55.4	3,609	1.8	591	0.2	6,104	1.6
2023-24	20,300	2.5	57.9	3,662	1.5	591	0.0	6,195	1.5
2024-25	20,900	3.0	60.5	3,726	1.8	593	0.3	6,286	1.5
2025-26	21,500	2.9	63.2	3,792	1.8	595	0.3	6,376	1.4
2026-27	22,200	3.3	66.0	3,869	2.0	599	0.7	6,461	1.3
2027-28	22,900	3.2	68.8	3,954	2.2	605	1.0	6,539	1.2
2028-29	23,600	3.1	71.8	4,044	2.3	612	1.1	6,613	1.1
2029-30	24,300	3.0	74.4	4,131	2.1	619	1.1	6,678	1.0
2030-31	25,100	3.3	76.8	4,220	2.2	626	1.3	6,737	0.9
2031-32	25,900	3.2	79.1	4,309	2.1	635	1.3	6,790	0.8
2032-33	26,700	3.1	81.0	4,397	2.0	643	1.3	6,838	0.7
2033-34	27,500	3.0	83.1	4,481	1.9	651	1.3	6,882	0.6
2034-35	28,400	3.3	84.7	4,567	1.9	660	1.3	6,921	0.6
2035-36	29,300	3.2	86.2	4,656	1.9	669	1.4	6,956	0.5
2036-37	30,200	3.1	87.7	4,757	2.2	681	1.7	6,988	0.5
2037-38	31,200	3.3	89.0	4,860	2.2	693	1.7	7,017	0.4
2038-39	32,200	3.2	90.2	4,959	2.0	704	1.7	7,042	0.4
2039-40	33,200	3.1	91.5	5,055	1.9	716	1.6	7,065	0.3
2040-41	34,300	3.3	92.8	5,146	1.8	726	1.5	7,084	0.3
2041-42	35,400	3.2	93.9	5,230	1.6	737	1.4	7,099	0.2

(1) The Percentage of Students at Limit represents the number of students with a weekly need of $210 or more divided by the total number of students receiving a loan (students only receiving a grant are excluded from both the numerator and the denominator).

Table 7 shows the annual increase in new loans issued over the 25-year projection period. Overall, the total new loans issued increase from $2,628 million in 2016-17 to 3,317 in 2017-18 due to the new fixed student contribution that results in lower assessed resources and higher average needs. In 2041-42, the new loans issued total 5,230 million, resulting in an average annual increase of 2.8%. This average annual increase can be attributed to two factors: an average annual increase in the number of students in the CSLP of 1.6% and an average annual increase in the average loan size of 1.2% over the 25-year projection period. The average loan size is calculated as the ratio of new loans issued over the number of students in the CSLP. The growth rate of the average loan size is moderated due to the constant loan limit.

The total amount of new loans issued in 2016-17 can be reconciled as follow from the information contained in the Monthly Financial Information Schedule (MFIS).

	($ million)
Disbursements (full-time loans)	2,608.5
Disbursements (part-time loans)	19.2
Subtotal	**2,627.7**
CSG converted to loans	8.2
Loans converted to CSG	-7.7
Total	**2,628.2**

C. Portfolio Projections

This section presents projections of the portfolio for all three regimes described in Appendix 1. 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 students in the CSLP. Loans in repayment consist of loans consolidated by students with financial institutions (or the Government) that are still outstanding.

1. Guaranteed and Risk-Shared Regimes

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 defaulted risk-shared loans bought back by the Government (principal only). The projection of risk-shared impaired loans purchased by the Government is necessary to determine when the limit on the aggregate amount of outstanding loans prescribed through the *Canada Student Financial Assistance Regulations* will be reached, as presented in Table 14. The guaranteed and risk-shared regimes are gradually being phased out.

At the end of the 2016-17 loan year, the sum of all loans in default coming from the guaranteed and risk-shared regimes that are owned by the Government amounts to approximately $220 million (principal and interest) but is subject to possible future recoveries. The guaranteed loans in default 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, as well as for risk-shared defaulted loans bought back by the Government. This provision calculation is not included in this report.

Table 8 Guaranteed and Risk-Shared Regimes Portfolio

As at July 31	Guaranteed			Risk-Shared			
	Loans In-Study (with financial institutions)	Loans in Repayment (with financial institutions)	Total	Loans In-Study (with financial institutions)	Loans in Repayment (with financial institutions)	Defaulted Loans (bought back by the Government)	Total
	($ million)			($ million)			
2017	1	3	4	3	888	44	935
2018	0	2	3	2	809	38	849
2019	-	2	2	1	720	34	755
2020	-	1	1	1	626	30	657
2021	-	1	1	0	526	27	553
2022	-	1	1	-	415	24	440
2023	-	-	-	-	307	21	328
2024	-	-	-	-	212	19	230
2025	-	-	-	-	135	16	151
2026	-	-	-	-	86	13	100
2027	-	-	-	-	55	11	67
2028	-	-	-	-	35	9	44
2029	-	-	-	-	23	7	30
2030	-	-	-	-	14	4	18
2031	-	-	-	-	9	1	10
2032	-	-	-	-	6	-	6

2. Direct Loan Regime

The projection of the direct loan portfolio includes the balance of outstanding loans (in-study and in repayment separately) and the balance of loans in default. There are two allowances for bad debt (principal and interest) to cover the risk of future default, net of recoveries, and an allowance for the RAP (principal) to cover the future cost of students benefiting from this program. The projection of the direct loan portfolio and allowances is shown in Table 9.

Table 9 Direct Loan Portfolio and Allowances

As at July 31	Principal only				Allowance for		
	Loans In-Study	Loans in Repayment	Defaulted Loans	Total	Bad Debt Principal	Bad Debt Interest	Repayment Assistance Plan – Principal
	($ million)				($ million)		
2017	6,625	9,439	2,149[1]	18,214	2,538	224	1,213
2018	7,314	9,934	2,164	19,412	2,643	226	1,297
2019	7,841	10,481	2,183	20,506	2,745	237	1,372
2020	8,430	10,987	2,219	21,636	2,851	248	1,441
2021	8,898	11,504	2,262	22,665	2,955	256	1,507
2022	9,269	12,033	2,316	23,618	3,056	264	1,569
2023	9,579	12,539	2,385	24,503	3,165	274	1,628
2024	9,845	12,999	2,474	25,318	3,282	286	1,688
2025	10,099	13,432	2,571	26,102	3,400	300	1,745
2026	10,318	13,887	2,671	26,877	3,517	318	1,800
2027	10,543	14,336	2,774	27,652	3,621	339	1,855
2028	10,765	14,775	2,876	28,416	3,737	359	1,910
2029	10,997	15,189	2,977	29,163	3,851	378	1,963
2030	11,233	15,591	3,076	29,899	3,964	396	2,014
2031	11,472	15,978	3,172	30,622	4,076	413	2,064
2032	11,714	16,357	3,267	31,338	4,187	429	2,113
2033	11,958	16,728	3,360	32,046	4,296	445	2,161
2034	12,200	17,096	3,451	32,747	4,404	459	2,209
2035	12,443	17,461	3,540	33,444	4,510	473	2,256
2036	12,689	17,824	3,628	34,141	4,616	485	2,303
2037	12,949	18,188	3,715	34,851	4,721	498	2,351
2038	13,219	18,558	3,800	35,577	4,827	510	2,400
2039	13,492	18,936	3,885	36,312	4,932	522	2,450
2040	13,765	19,320	3,969	37,054	5,038	534	2,500
2041	14,033	19,708	4,054	37,795	5,143	545	2,550
2042	14,290	20,099	4,141	38,530	5,269	557	2,600

(1) Outstanding balance of defaulted loans based on the DARS data file. There is a difference between the outstanding balance determined using the DARS data file and the outstanding balance shown in the "Detailed Age Analysis by Account Status" provided by ESDC. At the end of calendar year 2017, this difference is about $15 million (0.7%).

The outstanding direct loans portfolio increases rapidly from $18.2 billion as at 31 July 2017 to $23.6 billion five years later. By the end of the 2041-42 loan year, the portfolio reaches $38.5 billion.

As at 31 July 2017, the outstanding direct loan portfolio is $18.2 billion and is retrospectively derived from the experience during loan years 2000-01 to 2016-17 as follow:

New loans Issued	$35.9 billion
Plus the interest accrued during the non-repayment period	$ 1.1 billion
Minus repayments[1]	$17.5 billion
Minus loans forgiven and debt reductions in repayment[2]	$ 0.4 billion
Minus defaulted loans written-off	$ 0.9 billion
	$18.2 billion

Allowance for Bad Debt – Principal: Table 10 provides the calculation details for the projection of the defaulted loans portfolio and the allowance for bad debt – principal under the direct loan regime.

Table 10 Defaulted Loans and Allowance for Bad Debt – Principal

	Defaulted Loans Portfolio					Allowance for Bad Debt – Principal			
Loan Year	Balance 1 August	Defaulted Loans	Collected Loans	Write-offs	Balance 31 July	Allowance 1 August	Write-offs	Allowance 31 July	Yearly Expense
			($ million)				($ million)		
	(1)	(2)	(3)	(4)	(1+2) - (3+4)	(1)	(2)	(3)	(3) - (1 - 2)
2016-17	2,126	274	115	136	2,149	2,511	136	2,538	163
2017-18	2,149	283	113	155	2,164	2,538	155	2,643	261
2018-19	2,164	292	107	167	2,183	2,643	167	2,745	269
2019-20	2,183	313	107	169	2,219	2,745	169	2,851	276
2020-21	2,219	326	106	176	2,262	2,851	176	2,955	280
2021-22	2,262	344	109	182	2,316	2,955	182	3,056	283
2022-23	2,316	360	112	180	2,385	3,056	180	3,165	289
2023-24	2,385	377	111	177	2,474	3,165	177	3,282	293
2024-25	2,474	391	113	181	2,571	3,282	181	3,400	299
2025-26	2,571	403	116	186	2,671	3,400	186	3,517	304
2026-27	2,671	416	119	194	2,774	3,517	194	3,621	298
2027-28	2,774	427	123	201	2,876	3,621	201	3,737	317
2028-29	2,876	438	128	209	2,977	3,737	209	3,851	324
2029-30	2,977	448	132	218	3,076	3,851	218	3,964	331
2030-31	3,076	459	136	226	3,172	3,964	226	4,076	338
2031-32	3,172	469	140	234	3,267	4,076	234	4,187	345
2032-33	3,267	480	144	243	3,360	4,187	243	4,296	352
2033-34	3,360	490	148	251	3,451	4,296	251	4,404	359
2034-35	3,451	501	152	259	3,540	4,404	259	4,510	366
2035-36	3,540	511	156	268	3,628	4,510	268	4,616	373
2036-37	3,628	521	159	276	3,715	4,616	276	4,721	381
2037-38	3,715	532	163	284	3,800	4,721	284	4,827	389
2038-39	3,800	543	166	292	3,885	4,827	292	4,932	397
2039-40	3,885	554	170	299	3,969	4,932	299	5,038	405
2040-41	3,969	565	174	307	4,054	5,038	307	5,143	412
2041-42	4,054	578	177	314	4,141	5,143	314	5,269	439

The balance of loans in default (principal only) was $2,126 million at the beginning of the 2016-17 loan year and increased to $2,149 million as at 31 July 2017. The defaulted loans portfolio is projected to reach $4,141 million by the end of the projection period.

As shown in Table 10, an amount of $136 million was written-off in 2016-17. The amount of write-offs in 2017-18 is $155 million and includes all the non-recoverable loans that were

[1] Either prepayments while in-study, normal and accelerated payments while in repayment, affordable payments while in RAP, or recoveries while in default.

[2] Under the former Debt Reduction in Repayment (DRR) or the Repayment Assistance Plan (RAP) measures.

identified and approved for write-off by ESDC and CRA between July 2016 and June 2017. These write-offs were approved on 29 March 2018, via Royal Assent of Bill C-72 (Appropriation Act No. 5, 2017-18). The decision to write off particular loans is part of a multi-step process inevitably resulting in some volatility in the actual amount written-off from year to year.

The allowance for bad debt – principal covers the risk of future defaults, net of recoveries. It is estimated at $2,538 million as at 31 July 2017, which is slightly lower than the $2,577 million projected in the previous statutory report. For the 2016-17 loan year, the yearly expense for the allowance for bad debt – principal is $163 million and corresponds to the difference between the new allowance of $2,538 million and the total allowance of $2,511 million at the beginning of the loan year, net of the loans written-off, which totalled $136 million in the 2016-17 loan year [$163M = $2,538M - ($2,511M - $136M)].

For Public Accounts purposes, ESDC should determine the allowance as at 31 March 2018 using the outstanding balance of portfolio and the corresponding provision rates for the 2017-18 loan year according to the status of the loans as follows:

- 7.9% of the outstanding balance of loans in-study;
- 3.9% of the outstanding balance of loans in repayment; and
- 77.3% of the outstanding balance of loans in default.

The resulting allowance as at 31 March 2018 is $2,631 million. The allowance can be determined at any month end through the loan year by using the outstanding balance of loans at that time and the above-mentioned provision rates.

Allowance for Bad Debt – Interest: In accordance with the collection practice, interest accrues on defaulted loans until they reach a “non-recoverable” status. A provision is set to cover the risk that such accrued interest will never be recovered. The methodology used is the same as in the previous report. Provision rates are modified to take into account recent experience. Chart 2 represents the set of provision rates according to the year since default.

Chart 2 Provision Rates for Allowance for Bad Debt – Interest

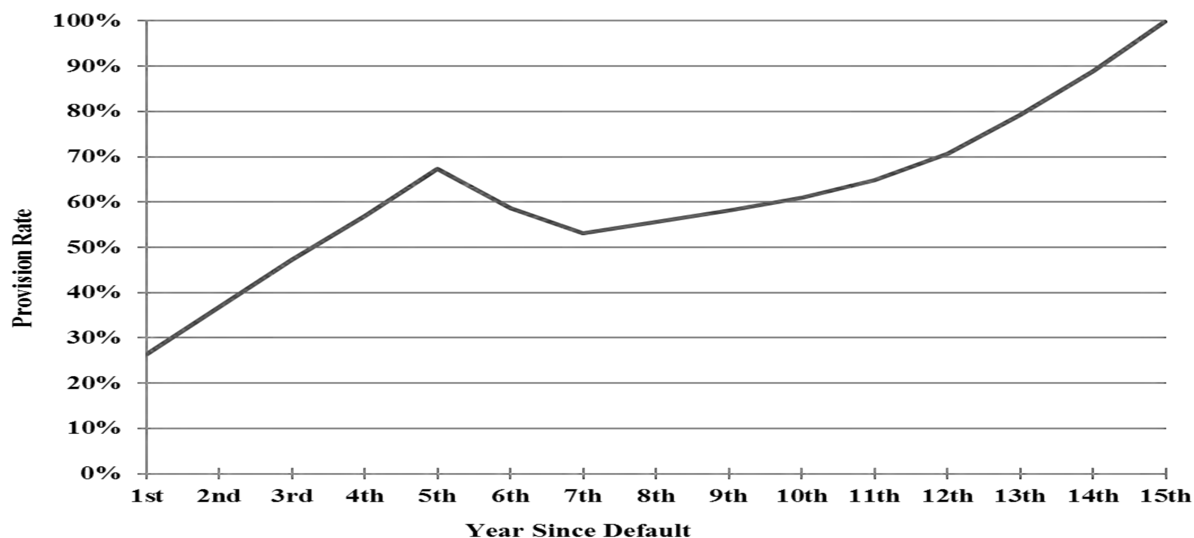


Table 11 Interest on Defaulted Loans and Allowance for Bad Debt – Interest

Loan Year	Interest on Defaulted Loans						Allowance for Bad Debt – Interest			
	Balance August 1	Interest Transferred in Default	Interest Accrued	Interest Collected	Write-offs	Balance July 31	Allowance August 1	Write-offs	Allowance July 31	Yearly expense
	($ million)						($ million)			
	(1)	(2)	(3)	(4)	(5)	(1+2+3) - (4+5)	(1)	(2)	(3)	(3) - (1-2)
2016-17	318	10	101	64	39	326	212	39	224	51
2017-18	326	14	112	67	53	332	224	53	226	55
2018-19	332	15	118	70	47	347	226	47	237	58
2019-20	347	16	124	74	50	363	237	50	248	61
2020-21	363	17	128	77	55	376	248	55	256	63
2021-22	376	19	133	81	57	390	256	57	264	65
2022-23	390	20	139	85	57	407	264	57	274	67
2023-24	407	21	146	89	59	426	274	59	286	71
2024-25	426	22	156	95	61	449	286	61	300	75
2025-26	449	24	167	101	63	476	300	63	318	81
2026-27	476	25	178	107	65	507	318	65	339	86
2027-28	507	26	186	113	70	536	339	70	359	90
2028-29	536	27	193	118	74	564	359	74	378	93
2029-30	564	27	199	122	78	590	378	78	396	96
2030-31	590	28	205	127	82	613	396	82	413	99
2031-32	613	29	211	131	87	636	413	87	429	103
2032-33	636	29	217	135	90	657	429	90	445	106
2033-34	657	30	223	138	94	677	445	94	459	108
2034-35	677	30	228	142	98	696	459	98	473	111
2035-36	696	31	234	146	101	715	473	101	485	114
2036-37	715	32	239	149	104	732	485	104	498	117
2037-38	732	32	244	152	107	750	498	107	510	119
2038-39	750	33	250	156	110	767	510	110	522	122
2039-40	767	34	255	159	113	784	522	113	534	124
2040-41	784	34	260	162	115	800	534	115	545	127
2041-42	800	35	266	166	118	818	545	118	557	130

The projection of the balance of interest on defaulted loans is presented in Table 11. When the loan is transferred to the Government after nine months without a payment, it comes with an interest portion, representing generally a little more than nine months of interest accrued on the defaulted principal transferred. Table 11 shows that $10 million of unpaid interest was returned to the Government in the 2016-17 loan year along with the newly defaulted principal portion of the loans. An additional amount of $101 million in interest was accrued during the 2016-17 loan year on the principal balance of the recoverable defaulted loans portfolio at the beginning of the loan year. When some payments are recovered by the CRA from borrowers in default, payments are first applied to interest. As such, an amount of $64 million was recovered in the 2016-17 loan year. Finally, when a loan meets certain criteria and has exceeded the six-year limitation period, the interest amounts are also considered for write-off. In the 2016-17 loan year, $39 million in interest was written off. As shown in Table 11, the balance of interest in default was $318 million at the beginning of the 2016-17 loan year and increased to $326 million as at 31 July 2017. The balance of interests in default is projected to increase to $818 million by the end of the projection period.

The allowance for bad debt – interest on recoverable accounts is determined using the outstanding interest and a variable provision rate for each year since default. The provision rates are presented in Table 2.

The allowance for bad debt – interest is estimated at $224 million as at 31 July 2017, which is roughly the same as the $222 million projected in the previous report. For the 2016-17 loan year, the yearly expense of $51 million corresponds to the difference between the allowance of $224 million as at 31 July 2017 and the allowance of $212 million at the beginning of the loan year, net of interest written-off during the 2016-17 loan year, which totaled $39 million [51$M = $224M – ($212M – $39M)].

For Public Accounts purposes, ESDC should determine the allowance as at 31 March 2018 using the outstanding balance of accrued interest on recoverable defaulted loans according to the year since default and the corresponding provision rates shown in Table 2. The resulting allowance as at 31 March 2018 is $216 million.

Allowance for the Repayment Assistance Plan– Principal: Table 12 provides the calculation details for the projection of the allowance for the Repayment Assistance Plan (RAP) under the direct loan regime.

Table 12 Allowance for Repayment Assistance Plan – Principal

Loan Year	Allowance 1 August	RAP Expenses	Allowance 31 July	Yearly Expense
	($ million)	($ million)	($ million)	($ million)
	(1)	(2)	(3)	(3) - (1-2)
2016-17	1,026	74	1,213	262
2017-18	1,213	93	1,297	177
2018-19	1,297	104	1,372	178
2019-20	1,372	113	1,441	183
2020-21	1,441	119	1,507	185
2021-22	1,507	125	1,569	187
2022-23	1,569	131	1,628	191
2023-24	1,628	138	1,688	197
2024-25	1,688	143	1,745	201
2025-26	1,745	146	1,800	201
2026-27	1,800	151	1,855	207
2027-28	1,855	156	1,910	210
2028-29	1,910	162	1,963	215
2029-30	1,963	168	2,014	219
2030-31	2,014	174	2,064	224
2031-32	2,064	179	2,113	228
2032-33	2,113	185	2,161	233
2033-34	2,161	190	2,209	237
2034-35	2,209	195	2,256	242
2035-36	2,256	199	2,303	246
2036-37	2,303	204	2,351	252
2037-38	2,351	209	2,400	257
2038-39	2,400	213	2,450	263
2039-40	2,450	218	2,500	268
2040-41	2,500	222	2,550	273
2041-42	2,550	227	2,600	277

Effective August 2009, the RAP replaced the Interest Relief (IR) and Debt Reduction in Repayment (DRR) measures. Table 12 shows the projection of the allowance for the principal portion of the required payment paid by the Government under Stage 2, including the RAP for borrowers with permanent disabilities (RAP-PD). For the RAP – interest, a provision is determined by ESDC for accounting purposes to take into account the timing of the interest accrued.

As with the allowance for bad debt – principal, the methodology used to determine the provision rate for the RAP – principal is based on a snapshot of the portfolio at a given time and takes into

account the status of the loans along with the corresponding level of risk for each status. The RAP provision rates have been revised upward compared with the previous report. This increase is attributable to the recent experience following the change to the loan repayment thresholds that took place on 1 November 2016.

As shown in Table 12, the allowance for the RAP – principal is estimated at $1,213 million as at 31 July 2017, which is higher than the $1,075 million projected in the previous report. For the 2016-17 loan year, the yearly expense for the RAP – principal allowance is $262 million; it corresponds to the difference between the new allowance of $1,213 million and the allowance of $1,026 million at the beginning of the loan year, net of the portion of loans paid by the Government under the RAP-Stage 2 and RAP-PD, which totalled $74 million in the 2016-17 loan year [$262M = $1,213M – ($1,026M – $74M)].

For the Public Accounts, the allowance as at 31 March 2018 should be determined using the outstanding portfolio balances with their corresponding provision rates:

- 5.3% on the balance of loans in-study;
- 1.3 % on the balance of loans in repayment (reduced by loans in the RAP – all stages); and
- 22.2% on the balance of loans in the RAP (all stages).

The resulting allowance as at 31 March 2018 is $1,334 million. Compared with loans in-study, the portfolio of loans in repayment includes cohorts of loans for which partial reimbursements have already occurred, as well as some defaults and utilization of the RAP, resulting in a lower risk for the remaining loans and consequently a lower required provision rate. The highest risk for the RAP comes from the portfolio of loans already in the RAP. The provision rate for the portfolio of loans in the RAP (Stages 1, 2 and PD) is 22.2% for the 2017-18 loan year. As the RAP is still relatively new, the provision rates may require further adjustments in the future as experience emerges.

For comparison purposes, Table 13 shows the direct loan portfolio in 2017 constant dollars.

Table 13 Direct Loan Portfolio and Allowances (in millions of 2017 constant dollars)(1)

As at July 31	Loans In-study	Loans in Repayment	Defaulted Loans	Total	Allowance for Bad Debt Principal	Allowance for Bad Debt Interest	Allowance for RAP – Principal
	($ million)				($ million)		
2017	6,625	9,439	2,149	18,214	2,538	224	1,213
2018	7,181	9,754	2,125	19,059	2,596	222	1,274
2019	7,548	10,089	2,101	19,739	2,642	228	1,320
2020	7,956	10,369	2,094	20,418	2,691	234	1,360
2021	8,233	10,644	2,093	20,970	2,734	237	1,394
2022	8,407	10,915	2,101	21,423	2,772	239	1,423
2023	8,519	11,151	2,121	21,791	2,815	244	1,448
2024	8,583	11,333	2,157	22,073	2,861	249	1,471
2025	8,632	11,482	2,198	22,311	2,906	257	1,492
2026	8,647	11,638	2,239	22,523	2,948	267	1,508
2027	8,662	11,778	2,279	22,718	2,975	278	1,524
2028	8,671	11,900	2,317	22,888	3,010	289	1,538
2029	8,684	11,994	2,351	23,029	3,041	299	1,550
2030	8,696	12,070	2,381	23,147	3,069	307	1,559
2031	8,708	12,127	2,408	23,243	3,094	314	1,567
2032	8,717	12,171	2,431	23,319	3,115	320	1,572
2033	8,724	12,204	2,451	23,379	3,134	324	1,577
2034	8,726	12,227	2,468	23,421	3,150	328	1,580
2035	8,725	12,244	2,482	23,451	3,163	331	1,582
2036	8,723	12,253	2,494	23,470	3,173	334	1,583
2037	8,727	12,258	2,504	23,489	3,182	336	1,585
2038	8,734	12,262	2,511	23,507	3,189	337	1,586
2039	8,740	12,266	2,516	23,523	3,195	338	1,587
2040	8,742	12,270	2,521	23,533	3,199	339	1,588
2041	8,737	12,271	2,524	23,533	3,202	340	1,588
2042	8,723	12,269	2,528	23,520	3,216	340	1,587

(1) For a given year, the value in 2017 constant dollars is equal to the corresponding value divided by the cumulative index of the Consumer Price Index (CPI) for that year.

3. Limit on the Aggregate Amount of Outstanding Loans

The *Canada Student Financial Assistance Regulations* (CSFAR) imposes a limit on the aggregate amount of outstanding loans in the CSLP. The limit is set at $24 billion since May 2015. Table 14 presents the projection of the aggregate amount of outstanding loans. The aggregate amount of outstanding direct loans includes the principal portion of all direct loans disbursed and not yet repaid, which consists of the total principal amount of loans in study, loans in repayment, and defaulted loans. The aggregate amount of outstanding risk-shared loans includes the principal portion of risk-shared student loans bought back by the Government from financial institutions. Collection activities are performed on these risk-shared loans by the Government.

In comparison with Table 9, which shows the projection of the direct loan portfolio at the end of loan years, Table 14 presents the estimated peak of the portfolio during the loan year. Monthly fluctuations throughout the year cause the aggregate amount of loans to be lower both at the beginning and at the end of the loan year; the peak occurs in the middle of the loan year and is 3% to 5% higher than the aggregate amount at the end of the loan year. Table 9 shows an aggregate amount of outstanding direct loans of $18.2 billion as at 31 July 2017. Table 14 shows

that the highest aggregate amount of outstanding direct loans during the 2016-17 loan year reached $19.0 billion in January 2017.

The projection shows that the $24 billion limit will be reached during the 2021-22 loan year. It is one year earlier than projected in the previous report due to a larger than expected amount of loans issued in the 2017-18 loan year following the introduction of the new fixed contribution. A small change in the projections, such as a further increase in loans issued, lower repayments or lower write-offs than expected could cause the limit to be reached a few years prior to 2021-22.

Table 14 Aggregate Amount of Outstanding Student Loans

Loan Year	Estimated Peak During the Loan Year (January)		Total
	Direct Loans	Risk-Shared Loans	
	($ million)	($ million)	($ million)
2016-17	18,990	51	19,041
2017-18	20,063	49	20,112
2018-19	21,233	41	21,274
2019-20	22,376	37	22,413
2020-21	23,475	32	23,507
2021-22	24,483	29	24,512
2022-23	25,423	26	25,449
2023-24	26,289	23	26,312
2024-25	27,114	20	27,134
2025-26	27,920	17	27,937
2026-27	28,726	15	28,741
2027-28	29,529	12	29,541
2028-29	30,320	10	30,330
2029-30	31,096	8	31,104
2030-31	31,860	6	31,866
2031-32	32,615	3	32,618
2032-33	33,362	1	33,362
2033-34	34,100	-	34,100
2034-35	34,833	-	34,833
2035-36	35,565	-	35,565
2036-37	36,309	-	36,309
2037-38	37,067	-	37,067
2038-39	37,836	-	37,836
2039-40	38,613	-	38,613
2040-41	39,390	-	39,390
2041-42	40,161	-	40,161

D. Projection of the Net Cost of the Program

1. Student Related Expenses

The primary expense of the CSLP is the cost of supporting students during their study and repayment periods. This expense includes the interest subsidy, which corresponds to the cost of borrowing incurred by the Government while borrowers are in school, the interest portion of the Repayment Assistance Plan (RAP) paid by the Government, the provision or expenses for the RAP – principal under the different regimes and the CSG.

Table 15 Student Related Expenses

	Direct Loan			Risk-Shared and Guaranteed Loans			
Loan Year	Interest Subsidy	RAP – Interest	Provision RAP – Principal	Interest Subsidy	RAP – Interest and Principal	Canada Student Grants	Total
		($ million)		($ million)		($ million)	($ million)
2016-17	109.1	184.7	261.6	0.1	7.3	1,014.6	1,577.4
2017-18	162.2	223.6	177.1	0.1	6.9	1,371.6	1,941.4
2018-19	211.3	248.2	178.1	0.0	6.3	1,456.1	2,100.1
2019-20	263.8	270.9	182.5	-	5.6	1,454.3	2,177.1
2020-21	296.5	287.4	185.0	-	4.9	1,446.4	2,220.1
2021-22	319.3	305.8	187.2	-	4.1	1,346.2	2,162.6
2022-23	340.7	324.6	190.7	-	3.2	1,347.0	2,206.3
2023-24	373.1	344.2	197.3	-	2.4	1,344.9	2,261.9
2024-25	402.4	366.8	200.8	-	1.6	1,342.8	2,314.4
2025-26	435.3	391.4	200.8	-	1.1	1,342.5	2,371.1
2026-27	465.2	414.6	206.7	-	0.7	1,346.5	2,433.7
2027-28	479.9	429.4	210.1	-	0.4	1,368.3	2,488.2
2028-29	490.2	441.4	214.8	-	0.3	1,378.8	2,525.6
2029-30	500.8	453.0	218.9	-	0.2	1,389.0	2,561.9
2030-31	511.5	464.2	223.6	-	0.1	1,404.1	2,603.5
2031-32	522.3	475.3	228.4	-	-	1,417.2	2,643.1
2032-33	533.2	486.2	232.9	-	-	1,430.5	2,682.7
2033-34	544.0	497.0	237.3	-	-	1,442.8	2,721.1
2034-35	554.9	507.7	241.8	-	-	1,456.4	2,760.8
2035-36	565.9	518.4	246.5	-	-	1,472.0	2,802.8
2036-37	577.4	529.2	251.9	-	-	1,491.0	2,849.5
2037-38	589.4	540.1	257.4	-	-	1,511.2	2,898.0
2038-39	601.6	551.2	262.8	-	-	1,530.6	2,946.1
2039-40	613.8	562.5	267.9	-	-	1,550.4	2,994.6
2040-41	625.9	574.0	272.6	-	-	1,566.7	3,039.2
2041-42	637.5	585.6	276.9	-	-	1,583.8	3,083.8

In the 2016-17 loan year, a total of $1,015 million of CSG were disbursed. It is projected to increase to $1,372 million in 2017-18 since the CSG for low-income families and middle-income families is replaced with a single grant, called the Canada Student Grant for Full-Time Students (CSG-FT), with one national progressive threshold table that is based on family size and family income. The total amount of grants is projected to increase to $1,584 million by the end of the projection period. Additionally, the loan years 2018-19 to 2020-21 include a pilot project that provides a top-up grants to adult learners. Monthly grant amounts are set in the *Canada Student Financial Assistance Regulations* and are assumed to remain constant for the entire projection period for the purpose of this evaluation.

2. Program Risk Expenses

Another expense for the Government corresponds to the risk that loans will never be repaid. This includes the risk of loan default and the risk of loans being forgiven upon a student's death or severe permanent disability. Loans forgiven for family physicians and nurses practicing in under-served rural or remote communities are also presented in the table below.

Table 16 Risks to the Government

	Direct Loan		Risk-Shared	Guaranteed		
	Provision for Bad Debt		Risk Premium, Put-Backs &	Claims for	Loans	
Loan Year	Principal	Interest	Refunds to FIs	Defaulted Loans	Forgiven	Total
	($ million)		($ million)	($ million)	($ million)	($ million)
2016-17	162.7	50.5	1.0	0.2	58.0	272.4
2017-18	261.1	55.3	0.8	0.1	43.3	360.7
2018-19	268.7	58.3	0.7	0.1	40.4	368.1
2019-20	275.8	61.3	0.6	0.0	43.4	381.1
2020-21	279.7	62.8	0.4	0.0	43.1	386.1
2021-22	283.2	64.6	0.3	0.0	47.7	396.0
2022-23	288.7	67.3	0.3	-	46.6	402.8
2023-24	293.2	70.7	0.2	-	51.3	415.5
2024-25	298.6	75.4	0.2	-	50.3	424.4
2025-26	304.0	80.8	0.1	-	55.5	440.4
2026-27	297.6	86.0	0.1	-	54.5	438.2
2027-28	316.7	89.8	-	-	60.2	466.8
2028-29	324.0	93.1	-	-	59.0	476.1
2029-30	330.9	96.3	-	-	65.1	492.3
2030-31	338.0	99.5	-	-	63.8	501.3
2031-32	345.2	102.6	-	-	70.3	518.0
2032-33	352.2	105.6	-	-	68.9	526.6
2033-34	359.0	108.4	-	-	75.7	543.1
2034-35	365.9	111.2	-	-	74.2	551.3
2035-36	373.0	114.0	-	-	81.5	568.4
2036-37	381.1	116.6	-	-	79.9	577.7
2037-38	389.3	119.3	-	-	87.6	596.2
2038-39	397.2	121.9	-	-	86.1	605.2
2039-40	404.9	124.5	-	-	94.1	623.6
2040-41	412.2	127.1	-	-	92.6	632.0
2041-42	439.5	129.8	-	-	101.2	670.4

Under the direct loan regime, the provisions for bad debt (principal and interest) represent the cost of the default risk assumed by the Government in directly disbursing 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.

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 in default for at least 12 months and up to a maximum of 3% of the total loans in repayment with the financial institution each year. Financial institutions decide whether to sell defaulted 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 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.

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

Loans forgiven correspond to loans that are forgiven (principal only) following the death or severe permanent disability of a borrower during the period of study, repayment, or even after the loan has been transferred to default status. As of August 2009, loans forgiven for disability are limited to borrowers who, due to their severe permanent disability, are unable to pay their loans and will never be able to repay them. Borrowers with a permanent disability who do not qualify for loan forgiveness could be eligible for the RAP for Borrowers with Permanent Disabilities (RAP-PD). Experience has shown a decrease in loan forgiveness and an increase in RAP-PD. Loans forgiven in 2016-17 includes a significant amount for guaranteed loans as a result of the DARS clean-up strategy. Loans forgiven also include the projection of forgiveness of a portion of loans for family physicians and nurses who practice in under-served rural or remote communities. This measure was implemented on 1 January 2013.

3. Other Expenses

Alternative payments are made directly to Québec, the Northwest Territories, and Nunavut, as they do not participate in the CSLP. 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.

The administrative expenses include fees paid to the participating provinces and to the Yukon Territory as well as general administrative fees. Fees are paid to the participating provinces and to the Yukon Territory to administer certain aspects of the CSLP. The general administrative fees represent the expenses incurred by the departments involved and fees paid to the National Student Loans Service Centre (NSLSC), which is responsible for the administration of student loans and grants. The NSLSC is run by a private entity contracted by the Government. The CRA is responsible for all collection activities on defaulted loans and a cost is included in the projected general administrative fees for this purpose.

Table 17 Summary of Expenses

Loan Year	Student Related Expenses	Risks to the Government	Alternative Payments(1)	Administrative Expenses		Total Expenses
				Fees Paid to Provinces	General	
	($ million)	($ million)	($ million)	($ million)		($ million)
2016-17	1,577.4	272.4	269.5	23.9	134.0	2,277.3
2017-18	1,941.4	360.7	338.6	24.5	137.9	2,803.1
2018-19	2,100.1	368.1	472.6	25.2	136.9	3,102.9
2019-20	2,177.1	381.1	515.0	25.9	139.7	3,238.9
2020-21	2,220.1	386.1	538.1	26.7	143.9	3,314.9
2021-22	2,162.6	396.0	551.2	27.5	148.3	3,285.5
2022-23	2,206.3	402.8	535.5	28.3	152.8	3,325.7
2023-24	2,261.9	415.5	545.8	29.2	157.5	3,409.9
2024-25	2,314.4	424.4	565.5	30.1	162.5	3,496.9
2025-26	2,371.1	440.4	584.3	31.0	167.5	3,594.4
2026-27	2,433.7	438.2	604.3	32.0	172.8	3,680.9
2027-28	2,488.2	466.8	625.9	33.0	178.2	3,792.1
2028-29	2,525.6	476.1	646.6	34.0	183.7	3,866.1
2029-30	2,561.9	492.3	664.1	35.1	189.5	3,942.9
2030-31	2,603.5	501.3	682.9	36.2	195.4	4,019.2
2031-32	2,643.1	518.0	702.0	37.3	201.5	4,102.0
2032-33	2,682.7	526.6	717.4	38.5	207.8	4,173.0
2033-34	2,721.1	543.1	729.3	39.7	214.2	4,247.4
2034-35	2,760.8	551.3	737.1	40.9	220.9	4,311.1
2035-36	2,802.8	568.4	744.3	42.2	227.8	4,385.6
2036-37	2,849.5	577.7	751.3	43.5	234.9	4,456.9
2037-38	2,898.0	596.2	757.6	44.9	242.3	4,539.0
2038-39	2,946.1	605.2	764.7	46.3	249.8	4,612.1
2039-40	2,994.6	623.6	770.5	47.7	257.6	4,694.1
2040-41	3,039.2	632.0	779.2	49.2	265.7	4,765.3
2041-42	3,083.8	670.4	789.2	50.8	274.0	4,868.2

(1) 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 $2.3 billion in 2016-17 to $4.9 billion in 2041-42. On average, total expenses increase at a rate of 3.0% per year from 2016-17 to 2041-42.

4. Total Revenue

Revenues from the direct loan regime (shown in Table 18) include: the interest earned from student loans in repayment, the interest accrued during the six-month non-repayment period following the study end date, the interest accrued on defaulted loans and the interest portion of the RAP. This interest earned is net of interest on loans forgiven. The revenues are reduced by the Government’s cost of borrowing for loans in repayment and in default (only for the interest accrued expected to be recovered). The difference results in net interest revenues. It is worth noting that the interest on defaulted direct loans is accrued until the status of the loans becomes “non-recoverable”.

Under the guaranteed and risk-shared regimes, there is no interest earned by the Government since students in good-standing pay interest directly to financial institutions. The only source of revenue from these regimes comes from recoveries of principal and interest from defaulted loans owned by the Government.

On average, total revenues increase at a rate of 2.7% per year between 2016-17 and 2041-42.

Table 18 Total Revenue

	Direct Loan			Risk-Shared	Guaranteed	
Loan Year	Interest Earned	Borrowing Cost	Net Interest Revenues	Principal and Interest from Recovery	Principal and Interest from Recovery	Total Revenues
	($ million)		($ million)	($ million)	($ million)	($ million)
2016-17	678.8	-153.8	524.9	4.7	7.8	537.5
2017-18	755.4	-220.4	535.0	3.6	3.9	542.4
2018-19	829.6	-279.0	550.6	2.7	2.7	556.1
2019-20	896.3	-341.1	555.2	2.1	1.8	559.1
2020-21	948.3	-378.2	570.1	1.5	1.3	572.9
2021-22	1,005.1	-407.9	597.2	1.1	0.6	598.9
2022-23	1,063.9	-438.4	625.5	1.0	0.4	626.8
2023-24	1,124.6	-484.6	640.0	0.9	0.1	641.0
2024-25	1,196.3	-527.4	668.9	0.8	0.1	669.7
2025-26	1,277.9	-576.9	701.1	0.6	-	701.7
2026-27	1,354.8	-623.7	731.1	0.3	-	731.3
2027-28	1,405.7	-649.8	755.9	0.2	-	756.1
2028-29	1,446.2	-668.8	777.4	0.0	-	777.4
2029-30	1,485.7	-687.1	798.6	-	-	798.6
2030-31	1,523.7	-704.6	819.1	-	-	819.1
2031-32	1,560.9	-721.7	839.2	-	-	839.2
2032-33	1,597.3	-738.5	858.8	-	-	858.8
2033-34	1,633.2	-755.0	878.2	-	-	878.2
2034-35	1,668.7	-771.3	897.4	-	-	897.4
2035-36	1,704.0	-787.6	916.4	-	-	916.4
2036-37	1,739.4	-803.8	935.6	-	-	935.6
2037-38	1,775.2	-820.2	955.0	-	-	955.0
2038-39	1,811.8	-837.0	974.8	-	-	974.8
2039-40	1,848.9	-854.0	995.0	-	-	995.0
2040-41	1,885.7	-871.2	1,014.5	-	-	1,014.5
2041-42	1,924.3	-888.7	1,035.6	-	-	1,035.6

5. Net Cost of the Program

Table 19 shows total expenses, total revenues, and the total net cost of the Program in current dollars for the 25-year projection period, while Table 20 shows the same statistics expressed in 2017 constant dollars. The expenses and revenues shown correspond to values presented earlier in this report.

Table 19 Net Annual Cost of the Program

	All Regimes			Net Cost of the Program	
Loan Year	Total Expenses	Total Revenues	Total Net Cost of the Program	Direct Loan	Risk-Shared & Guaranteed
	($ million)		($ million)	($ million)	
2016-17	2,277.3	537.5	1,739.9	1,724.0	15.8
2017-18	2,803.1	542.4	2,260.7	2,259.3	1.4
2018-19	3,102.9	556.1	2,546.8	2,544.4	2.5
2019-20	3,238.9	559.1	2,679.8	2,676.7	3.1
2020-21	3,314.9	572.9	2,741.9	2,738.8	3.2
2021-22	3,285.5	598.9	2,686.6	2,683.3	3.3
2022-23	3,325.7	626.8	2,698.9	2,696.3	2.6
2023-24	3,409.9	641.0	2,769.0	2,767.0	1.9
2024-25	3,496.9	669.7	2,827.2	2,826.0	1.2
2025-26	3,594.4	701.7	2,892.7	2,892.0	0.7
2026-27	3,680.9	731.3	2,949.6	2,949.0	0.6
2027-28	3,792.1	756.1	3,036.0	3,035.6	0.3
2028-29	3,866.1	777.4	3,088.7	3,088.4	0.3
2029-30	3,942.9	798.6	3,144.3	3,144.1	0.2
2030-31	4,019.2	819.1	3,200.2	3,200.0	0.1
2031-32	4,102.0	839.2	3,262.8	3,262.8	0.0
2032-33	4,173.0	858.8	3,314.2	3,314.2	-
2033-34	4,247.4	878.2	3,369.2	3,369.2	-
2034-35	4,311.1	897.4	3,413.7	3,413.7	-
2035-36	4,385.6	916.4	3,469.1	3,469.1	-
2036-37	4,456.9	935.6	3,521.3	3,521.3	-
2037-38	4,539.0	955.0	3,584.0	3,584.0	-
2038-39	4,612.1	974.8	3,637.3	3,637.3	-
2039-40	4,694.1	995.0	3,699.1	3,699.1	-
2040-41	4,765.3	1,014.5	3,750.8	3,750.8	-
2041-42	4,868.2	1,035.6	3,832.5	3,832.5	-

As shown in Table 19, the initial net annual cost for the direct loan regime is $1.7 billion for the 2016-17 loan year and reaches $3.8 billion in the 2041-42 loan year. This represents an annual average increase of 3.2% for the entire projection period.

It is important to specify that this net cost includes the amount of CSG disbursed. The amount of grants disbursed is $1,015 million in 2016-17, representing 57% of the net cost in 2016-17. Moreover, the net cost also includes yearly expenses to account for provisions that recognize in advance the risk of future losses associated with student loans.

In 2017 constant dollars (Table 20), the cost of the direct loan regime increases, on average, by 1.2% a year from $1.7 billion at the beginning to $2.3 billion by the end of the projection period.

Table 20 Net Annual Cost of the Program (in millions of 2017 constant dollars)(1)

	All Regimes			Net Cost of the Program	
Loan Year	Total Expenses	Total Revenues	Total Net Cost of the Program	Direct Loan	Risk-Shared & Guaranteed
	($ million)		($ million)	($ million)	
2016-17	2,277.3	537.5	1,739.9	1,724.0	15.8
2017-18	2,748.2	531.8	2,216.4	2,215.0	1.4
2018-19	2,982.4	534.5	2,447.9	2,445.6	2.4
2019-20	3,052.1	526.8	2,525.2	2,522.3	2.9
2020-21	3,062.4	529.3	2,533.1	2,530.2	2.9
2021-22	2,975.8	542.4	2,433.4	2,430.4	3.0
2022-23	2,953.2	556.6	2,396.6	2,394.3	2.3
2023-24	2,968.6	558.0	2,410.6	2,408.9	1.7
2024-25	2,984.6	571.6	2,413.0	2,412.0	1.0
2025-26	3,007.6	587.2	2,420.5	2,419.9	0.6
2026-27	3,019.6	599.9	2,419.7	2,419.2	0.5
2027-28	3,049.8	608.1	2,441.7	2,441.5	0.2
2028-29	3,048.4	613.0	2,435.4	2,435.2	0.3
2029-30	3,048.0	617.4	2,430.6	2,430.5	0.2
2030-31	3,046.1	620.8	2,425.3	2,425.2	0.1
2031-32	3,047.8	623.5	2,424.3	2,424.3	0.0
2032-33	3,039.8	625.6	2,414.2	2,414.2	0.0
2033-34	3,033.4	627.2	2,406.2	2,406.2	-
2034-35	3,018.5	628.3	2,390.1	2,390.1	-
2035-36	3,010.4	629.1	2,381.3	2,381.3	-
2036-37	2,999.4	629.6	2,369.8	2,369.8	-
2037-38	2,994.7	630.1	2,364.6	2,364.6	-
2038-39	2,983.3	630.6	2,352.7	2,352.7	-
2039-40	2,976.8	631.0	2,345.8	2,345.8	-
2040-41	2,962.7	630.7	2,332.0	2,332.0	-
2041-42	2,967.3	631.3	2,336.0	2,336.0	-

(1) For a given year, the value in 2017 constant dollars is equal to the corresponding value divided by the cumulative index of the Consumer Price Index (CPI) for that year.

III. Conclusion

The Canada Student Loans Program (CSLP) 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. In accordance with section 19.1 of the *Canada Student Financial Assistance Act* (CSFAA), the Chief Actuary of the Office of the Superintendent of Financial Institutions shall prepare a report on the financial assistance provided under this Act no later than three years apart. The most recent statutory Actuarial Report on the CSLP was prepared as at 31 July 2014. This statutory report is prepared as at 31 July 2017.

During the 2016-17 loan year, 497,000 students received a loan for a total amount of new loans issued of $2,628 million. The amount of new loans issued will increase to $3,317 million in 2017-18 with the introduction of the fixed student contribution that was announced in Budget 2016. The amount of loans issued will reach $5,230 million in 2041-42.

During the 2016-17 loan year, 380,000 students received a Canada Student Grant (CSG) for a total of $1,015 million. An increase is expected in 2017-18 due to the introduction of the new eligibility thresholds for CSG. Total CSG are expected to increase from $1,372 million in 2017-18 to $1,584 million in 2041-42.

The direct loan portfolio increases from $18.2 billion as at 31 July 2017 to $38.5 billion in 25 years. According to the projections, the aggregate amount of outstanding student loans will exceed the $24 billion limit in 2021-22. The total net cost of the Government's involvement in the CSLP, which is the difference between expenses and revenues, is expected to grow from $1.7 billion in 2016-17 to $3.8 billion by the end of the projection period.

The future default rate, net of recoveries, is unchanged from the previous report, at 9.0%. The allowance for bad debt – principal covers the risk of future default, net of recoveries. It corresponds to $2,538 million as at 31 July 2017, which is slightly lower than the $2,577 million projected in the previous report.

The allowance for bad debt – interest covers the risk that the interest accrued on defaulted loans will never be recovered. It corresponds to $224 million as at 31 July 2017, which is roughly the same as the $222 million projected in the previous report.

Based on recent experience, RAP utilization rates have increased compared to the previous report. The allowance for RAP – Principal recognizes that part of the loan principal of students benefiting from RAP-Stage 2 and RAP-PD will be paid by the Government. It corresponds to $1,213 million as at 31 July 2017, which is higher than the $1,075 million projected in 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 Chartered Professional Accountants Canada.

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

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

Annie St-Jacques, F.S.A., F.C.I.A.
Senior Actuary

Thierry Truong, F.S.A., A.C.I.A.
Senior Actuarial Officer

Ottawa, Canada
26 June 2018

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 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) applied to loan years preceding August 1995 while the subsequent *Canada Student Financial Assistance Act* (CSFAA) applies to loan years starting after July 1995.

1. Eligibility Criteria

In order to be eligible for a student loan, a student must be a Canadian citizen, permanent resident, protected person within the meaning of the *Immigration and Refugee Protection Act* or a person registered as an Indian under the *Indian Act*, and must demonstrate the need for financial assistance. A student must also fulfill a series of criteria (scholastic standard and financial) to be considered for a loan. Each year, upon application to their province of residence, loans are available to full-time students regardless of age, and since 1983, loans are also available to part-time students.

A multi-year student financial assistance agreement was implemented in all jurisdictions starting in the 2013-14 loan year. It is referred to as the Master Student Financial Assistance Agreement (MSFAA) and replaces the former single-year student loan agreement. By signing an MSFAA, a borrower agrees to repayment terms that will apply to their loans when they leave their studies.

Since the 2016-17 loan year, the value of student-owned vehicles has been eliminated from the CSLP assessment process in all jurisdictions to better reflect the needs of students who commute or work while studying.

Budget 2016 proposed to introduce a fixed student contribution[1] to determine eligibility for student loans and grants. This change came into force in 2017-18. Under the new model, the previous system of assessing student income and financial assets in determining eligibility for the CSLP was replaced by a fixed student contribution amount between $1,500 and $3,000 per academic year. Students with a prior year gross annual family income equal to or below a low-income threshold will contribute $1,500 per academic year and for those with income exceeding the low-income threshold, 15% of exceeding family income will then be added, up to a maximum contribution of $3,000. The assessment of targeted resources as well as scholarships and bursaries will continue. Indigenous learners, students with permanent disabilities, students with dependants, and current or former Crown wards, will be exempted from a fixed student contribution. For married and common-law students, estimates of spousal income and assets will also be replaced by a fixed spousal contribution. It will correspond to 10% of family income exceeding the low-income thresholds, with no maximum contribution.

2. Partnerships

Since the Program's inception in 1964, the Minister entered into an agreement with the participating provinces/territory regarding their powers, duties and functions related to the administration of the Program. The participating provinces have their own student financial

[1] Although the Budget announced a flat-rate student contribution, the parameters developed on consultation with provinces and territories reflect a "fixed student contribution" that targets funding to students from low- and middle-income families.

assistance programs that complement the CSLP. On behalf of the Government of Canada, the provinces and territory determine whether students require financial assistance as well as their eligibility for the CSLP. Provincial/territorial authorities determine the students' required financial needs based on the difference between their expected expenses and available resources. In general, for each school year, the CSLP covers around 60% of the assessed need up to a maximum of $210 per week. The participating provinces and territory complement the CSLP by providing additional financial assistance up to established maximum amounts. The amount of money students may borrow depends on their individual circumstances.

The National Student Loans Service Centre (NSLSC) was established on 1 March 2001 and is responsible for the administration of student loans and grants. The NSLSC processes all applicable documentation from the loans' disbursement to the consolidation and repayment for the federal portion of the loans as well as the provincial portion of integrated loans. It keeps students informed of all available options to assist in repaying their loans. The NSLSC is run by a private entity contracted by the government.

The type of financial arrangement has changed through time and legislation. The following describes the different arrangements and explains who bears the risk associated with default.

- Guaranteed Loan Regime: Student loans provided by lenders (financial institutions) under the *Canada Student Loans Act* prior to August 1995 were fully guaranteed by the Government to the lenders. The Government reimbursed lenders for the outstanding principal, accrued interest, and costs in the event of default or death of the borrower. Therefore, the Government bore all the risk involved with guaranteed loans.
- Risk-Shared Loan Regime: Between August 1995 and 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 in each loan year. Under this financial arrangement, the Government was not at risk except for the payment of the risk premium. Financial institutions could also decide to sell a certain amount of defaulted loans and the Government had to pay a put-back fee of five cents on the dollar for these loans. Finally, the agreement provided that part of the recoveries be shared with financial institutions.
- Direct Loan Regime: The direct loan arrangement came into force, effective 1 August 2000, following the restructuring of the delivery of the Program and the amendments made to the *Canada Student Financial Assistance Act* and Regulations. Under this regime, the Government issues loans directly to students and bears all the risk involved.

The Government of Canada currently has integration agreements in place with five provinces: Ontario (August 2001), Saskatchewan (August 2001), Newfoundland and Labrador (April 2004), New Brunswick (May 2005), and British Columbia (August 2011). Students in integrated provinces benefit from having one single loan administered through the NSLSC instead of managing two separate loans (federal and provincial).

3. Loan Benefit

a) In-study Interest Subsidy

The CSLP provides an interest-free loan during the borrower's study period. The benefit takes the form of an in-study interest subsidy. During this period, the Government pays interest (Government's cost of borrowing) on the loan and no payment on the principal is required. Because this interest-free period ends when the borrower ceases to be a student and the remaining loan's lifetime is repaid with interest, Canada Student Loans are currently not considered as having significant concessionary terms according to the Directive on Accounting Standards (GC 3050 Loans Receivable). This could change in the future if the repayment terms and conditions for student loans changed. Appendix 6 presents more details.

Since June 2008, members of the Reserve Force who interrupt their program of study to serve on a designated operation are considered full-time students until the last day of the month in which their service ends and, as such, benefit from an extended in-study interest-free period.

As of 1 January 2012, the part-time students do not accrue interest on their loans while they are studying. This change occurred to align part-time and full-time loans.

b) Loan Consolidation

During the first six months following the end of the study period (six-month non-repayment period) all loans previously received by a student are added together and consolidated. During this period, interest accrues on the loan(s) but no payment is required. With the implementation of the MSFAA, the *Canada Student Financial Assistance Regulations* were amended to remove the regulatory requirement that borrowers sign a consolidation agreement. Repayment terms are part of the MSFAA and a repayment letter is sent to borrowers upon leaving their studies. The letter provides information on their CSL balance, repayment options and available repayment assistance measures. Since July 1995, the interest rate used to calculate the monthly payment is equal to the prime rate plus 250 basis points for most students.

Students must provide their financial institution or the NSLSC with a proof of enrolment for each study period in which they are enrolled even if they are not applying for a new loan. This prevents an automatic consolidation from occurring while they are still in school and it prevents interest from accruing on the loan.

c) Repayment Assistance

In 1983, the Government introduced a repayment assistance measure in the form of an Interest Relief to assist students experiencing financial difficulty repaying their loan. The Government assumed the responsibility for making interest payments on the outstanding loan and no principal payments were required. This measure was improved over time. Between 1998 and 2009, a borrower in financial difficulty could be awarded a total of 30 months of Interest Relief during the repayment period. If the borrower was still within the first five year period after the end of studies when the 30 months ended, he could be awarded an additional 24 months of Interest Relief. In determining eligibility for Interest Relief, a borrower's monthly family income had to fall below an established income threshold in relation to the required monthly payment on the loan.

In 1998, the Government introduced the Debt Reduction in Repayment (DRR) measure to help students who remained in financial difficulty after all possible Interest Relief measures had been exhausted. Between 2005 and 2009, the principal loan reductions corresponded to two reductions

of up to $10,000 each and a third reduction of up to $6,000. To determine whether the previous reduction had resulted in a manageable debt level, twelve months had to have elapsed between each reduction.

As of 2009-10 loan year, the Repayment Assistance Plan (RAP) replaced the Interest Relief and DRR measures. The RAP is designed to make it easier for borrowers to manage their debt by calculating affordable payments ($0 for those under the established minimum income threshold, or from 1% to 20% of family income for those above the established minimum income threshold) based on family income and family size. Therefore, the affordable payment formula ensures no borrower pays more than 20% of their gross income towards their student loan debt. Borrowers are deemed eligible for the RAP for a six-month period if their affordable payment is less than their required monthly payment. The RAP is composed of two stages to help borrowers fully repay their loan within a maximum of 15 years of leaving school (or 10 years for borrowers with a permanent disability).

Budget 2016 proposed to increase the RAP income thresholds to ensure that students will not be required to repay their student loan until they earn at least $25,000 per year ($25,000 is the threshold for a single student with no dependents, which scales up based on family size). This measure took effect in the 2016-17 loan year.

Under Stage 1, the required monthly payment is determined by amortizing a borrower’s outstanding principal amount over a period that ends 120 months after leaving school. The borrower’s monthly affordable payment, if any, goes directly towards the loan principal first, and then the interest, while the Government covers any interest amount not covered by the affordable payment. The principal portion of the loan not covered by the affordable payment is deferred. Stage 1 can last for a maximum of five years in cumulative six-month periods.

Stage 2 is available to borrowers who continue to experience financial difficulty after Stage 1 has been exhausted and to those whose loan has been in repayment for more than 10 years. Under Stage 2, the required payment is calculated by amortizing the outstanding principal between the start date of Stage 2 and the date corresponding to 15 years after the borrower left school (10 years for borrowers with a permanent disability). The Government covers both the required principal amount and the interest amount not covered by the borrower’s affordable payment such that the student loan is repaid in full within 15 years (10 years for borrowers with a permanent disability) of the borrower leaving school.

Borrowers with a permanent disability who are not eligible for loan forgiveness have access to the RAP-PD. Additional expenses related to cost that permanent disability borrowers face are taken into account in the income calculation when they apply for RAP-PD. Similar to all borrowers in RAP Stage 2, additional student loans or grants are not available under RAP-PD until existing loans are paid in full. However, interest-free status may be available for existing loans if the borrower returns to school.

d) Loan Forgiveness

The Minister has the authority, upon application and qualification, to forgive the loan in the event of a borrower’s severe permanent disability or death while in school or during the repayment period. Effective 1 August 2009, in order for a borrower’s loan to be forgiven due to a permanent disability, the Minister must be satisfied that the borrower’s condition respects the definition of “severe permanent disability”, is unable to repay the student loan, and will never be able to repay it.

Effective 1 January 2013, a portion of student loans allocated to family physicians (including residents in family medicine programs), nurses and nurse practitioners who work during a year in an under-served rural or remote community can be forgiven for that year. Qualifying family physicians are eligible for up to $8,000 of loan forgiveness per year to a maximum of $40,000 over five years. Qualifying nurses are eligible for up to $4,000 (of loan forgiveness) per year to a maximum of $20,000 over five years. Qualifying participants who started their current employment in under-served communities on or after 1 July 2011, and who complete a year of work (starting on or after 1 April 2012), are eligible for loan forgiveness.

4. Canada Student Grants

Canada Study Grants were introduced in 1995 as non-repayable grants administered by the participating provinces on the Federal Government's behalf. These grants were taxable and assisted students with permanent disabilities, high-need part-time students, women pursuing certain doctoral studies, and students with dependents. Canada Access Grants were then introduced in the 2005-06 loan year and included grants for students from low-income families as well as grants for students with permanent disabilities.

The Canada Student Grant (CSG), implemented in August 2009, provides non-repayable assistance to targeted groups of students, including students from low- and middle-income families, students with permanent disabilities, and students with children under the age of 12. These grants are not taxable.

As of the 2018-19 loan year, the CSG include:

- **CSG-FT**: a grant up to $375 per month of study for full-time university undergraduate or college students from low- and middle-income families. To be eligible, a student's academic program must be at least two years (60 weeks) in duration.
- **CSG-PD**: a grant of $2,000 per school year for students with permanent disabilities.
- **CSG-PDSE**: a grant of up to $8,000 per school year to help cover exceptional education-related costs associated with a student's permanent disability.
- **CSG-DEP**: a grant of $200 per month of full-time study, for every dependent child under the age of 12.
- **CSG-PT**: a grant of up to $1,800 per school year for part-time students from low-income families.
- **CSG-PTDEP**: a grant for part-time students with dependents of $40 per week of study for students with one or two children under 12 years of age and $60 per week of study for students with three or more children under 12 years of age, up to a maximum of $1,920.

The grant amounts are stated in the *Canada Student Financial Assistance Regulations*. The thresholds and phase-out rates for the Grant for Full-Time students are based on family size and income and are set out in Schedule 4 of the Regulations.

Starting in 2018-19 loan year, a three-year pilot project will provide an additional $1,600 in grants per year to eligible adult learners returning to school full-time after several years in the workforce. This will make it easier for adult learners to qualify for loans and grants.

Appendix 2 – Data

The input data required with respect to direct loans were extracted from data files provided by Employment and Social Development Canada (ESDC).

1. Direct Loans Issued

Table 21 presents a comparison of the data extracted from ESDC's files on the number of students and the amount of direct loans issued for loan years 2000-01 to 2016-17 with ESDC's aggregate data. These data were found to be complete.

Table 21 Direct Loans Issued and Number of Students

Loan Year	Amount of Loans Issued		Number of Students	
	ESDC File	ESDC Aggregate Data	ESDC File	ESDC Aggregate Data
	($ million)			
2000-01	1,573	1,570	343,746	346,568
2001-02	1,507	1,512	328,671	331,541
2002-03	1,549	1,549	331,042	331,763
2003-04	1,648	1,648	342,264	342,982
2004-05	1,633	1,633	339,204	339,828
2005-06	1,936	1,939	345,549	345,765
2006-07	1,916	1,931	344,214	345,124
2007-08	2,004	2,015	353,548	354,144
2008-09	2,071	2,081	366,145	366,788
2009-10	2,088	2,088	403,566	404,432
2010-11	2,225	2,226	427,054	428,549
2011-12	2,412	2,412	450,246	450,314
2012-13	2,583	2,583	477,394	477,487
2013-14	2,721	2,721	497,636	497,725
2014-15	2,723	2,723	495,297	495,341
2015-16	2,722	2,722	496,998	497,042
2016-17	2,627	2,627	497,045	497,064

According to the Monthly Financial Information Schedule (MFIS), the total amount of loans issued in 2016-17 rounded to the million was $2,628, which is nearly identical to the value calculated using the data file.

2. Direct Loans Consolidated

Table 22 presents the amount of consolidated direct loans, the amounts that were reversed due to a return to school and the accrued interest during the six-month non-repayment period according to the MFIS. These data closely match consolidations from individual data for the most recent two years although some adjustments to the individual data were necessary. It was observed that reversals (students returning to school) generally occur in the same loan year as consolidation or the year after.

Table 22 Direct Loans Consolidated

Loan Year	Amounts from the MFIS			
	Consolidations	Reversal	Interest Accrued	Total Amount Consolidated[(1)]
	($ million)			
	(1)	(2)	(3)	(1) - (2) + (3)
2000-01	65.7	4.1	0.7	62.2
2001-02	901.0	154.9	26.0	772.2
2002-03	1,211.9	262.7	39.6	988.8
2003-04	1,434.3	326.6	43.7	1,151.4
2004-05	1,632.6	388.4	52.6	1,296.7
2005-06	1,720.0	435.4	61.8	1,346.4
2006-07	1,936.3	499.8	82.7	1,519.3
2007-08	2,100.8	571.8	90.4	1,619.3
2008-09	2,187.5	638.2	74.8	1,624.0
2009-10	2,302.3	703.3	54.9	1,654.0
2010-11	2,464.8	762.0	65.3	1,768.1
2011-12	2,580.8	799.9	72.1	1,852.9
2012-13	2,684.9	801.3	75.0	1,958.6
2013-14	2,797.6	788.3	78.8	2,088.2
2014-15	2,909.9	797.6	82.0	2,194.3
2015-16	3,034.1	852.6	81.7	2,263.2
2016-17	3,082.9	904.2	83.6	2,262.2

(1) The net consolidated amount represents the total consolidation for the year less all reversals regardless of the original consolidation year.

3. Defaults and Recoveries for Direct Loans

Table 23 shows the main items of the defaulted loans portfolio (principal only). This information is extracted from ESDC's data files.

- Defaults: amount of loans transferred to the Government in each loan year after nine months without a payment;
- Account adjustments: loans recalled and financial adjustments made by ESDC;
- Rehabilitations: amount of loans rehabilitated under certain criteria;
- Recoveries: payments recovered by the CRA from borrowers in default;
- Write-offs: amounts approved for write-off when a loan meets certain criteria and has exceeded the limitation period.

Adjustments, rehabilitations, recoveries and write-offs shown in Table 23 represent the amounts recorded in each loan year, regardless of the time of default. For example, in the 2016-17 loan year, there were $114.8 million in recoveries. This amount includes recoveries for loans that could have been transferred in default in any loan year between 2000-01 and now.

Table 23 shows that the balance of the portfolio in default is $2,149.1 million as at 31 July 2017 based on the information extracted from the data file. There is a difference between the balance determined in the DARS data file received and the balance shown in the "Detailed Age Analysis by Account Status" table provided by ESDC. As at 31 December 2017, this difference is about $14.9 million ($2,244.0 million in DARS and $2,258.9 million in the "Detailed Age Analysis" table), which represents 0.7%.

Table 23 Direct Loans Default Portfolio

Loan Year	Defaults	Account Adjustments	Rehabilitated	Net Defaults	Recoveries	Write-Offs	Balance
	($ million)				($ million)		
	(1)	(2)	(3)	(4)=(1)-(2)-(3)	(5)	(6)	(7) = Previous year's balance + (4)-(5)-(6)
2000-01	5.3	-	-	5.3	0.3	-	5.0
2001-02	5.0	-	0.1	4.9	0.7	-	9.1
2002-03	244.3	0.6	17.5	226.2	23.8	-	211.6
2003-04	265.9	12.4	3.1	250.4	48.8	-	413.1
2004-05	364.4	19.0	2.2	343.2	83.0	-	673.3
2005-06	275.6	12.3	7.8	255.5	85.6	-	843.2
2006-07	257.7	8.7	5.8	243.2	83.7	0.2	1,002.5
2007-08	303.4	11.1	5.0	287.4	91.8	0.3	1,197.8
2008-09	308.3	8.7	7.0	292.6	85.4	-	1,404.9
2009-10	301.2	6.1	10.9	284.3	81.1	-	1,608.2
2010-11	335.2	6.4	18.0	310.8	92.8	-	1,826.2
2011-12	382.8	6.9	34.9	341.0	99.3	220.9	1,847.0
2012-13	353.4	5.9	31.4	316.1	105.0	167.6	1,890.5
2013-14	372.9	12.5	39.0	321.3	113.0	-	2,098.8
2014-15	357.6	6.3	39.3	312.0	120.2	218.0	2,072.6
2015-16	346.0	2.0	40.9	303.1	118.5	131.7	2,125.9
2016-17	350.4	2.6	73.8	274.1	114.8	136.1	2,149.1

4. Repayment Assistance Plan

The Repayment Assistance Plan (RAP) was implemented in August 2009. Detailed data files by applicant are available. The data files received were found to be complete and have been used to update the assumptions for the utilization rates (both entrance and continuation) for each stage. Table 24 presents the RAP expenses split by stage as found in the MFIS as well as the totals calculated from the data files. Those expenses correspond to the portion of the monthly payments covered by the Government for all borrowers in the RAP.

Table 24 Repayment Assistance Plan

Principal Payments

Loan Year	MFIS			Data Files
	Stage 2	PD	Total	Total
	($ million)			($ million)
2009-10	3.3(1)	1.2	4.4(1)	2.8
2010-11	2.9	6.1	8.9	10.2
2011-12	6.3	11.7	18.1	17.1
2012-13	11.1	12.9	24.0	24.3
2013-14	16.7	15.5	32.2	32.7
2014-15	25.5	20.2	45.7	44.1
2015-16	33.8	23.4	57.2	56.2
2016-17	45.8	28.9	74.7	73.3

Interest Payments

Loan Year	MFIS				Data Files
	Stage 1	Stage 2	PD	Total	Data Files
	($ million)				($ million)
2009-10	67.5	0.5(2)	0.7	68.7(2)	73.7
2010-11	82.7	1.8	3.0	87.5	87.6
2011-12	94.1	3.9	5.8	103.8	101.9
2012-13	106.1	6.5	6.1	118.7	119.3
2013-14	119.2	9.3	6.8	135.3	139.1
2014-15	131.3	12.9	8.5	152.7	153.9
2015-16	137.8	15.4	9.3	162.5	164.0
2016-17	154.3	19.2	11.1	184.7	182.3

(1) Includes $2.3 million of DRR payments approved before August 2009.
(2) Includes $15.8 million of interest relief payments approved before August 2009.

Appendix 3 – Portfolio Reconciliation

In the previous statutory Actuarial Report prepared as at 31 July 2014 (AR 2014), the expected total direct loans portfolio as at 31 July 2017 was projected at $18.6 billion. The actual portfolio as at 31 July 2017 is very close to what was previously expected and corresponds to $18.2 billion. Table 25 shows a reconciliation of the loan portfolio by loan status.

Table 25 Reconciliation of the Direct Loans Portfolio as at 31 July 2017

	Effect on the Portfolio	
Loans In Study		($ million)
Expected Loans In Study as at 31 July 2017 (AR 2014)		6,753
Experience in loan years 2014-15 to 2016-17 compared with projections		
Lower Loans Issued	-	330
Lower Loans Consolidated	+	166
Lower Prepayments	+	37
Total Effect	-	**128**
Actual Loans In Study as at 31 July 2017 (AR 2017)		6,625
Loans In Repayment		
Expected Loans In Repayment as at 31 July 2017 (AR 2014)		9,619
Experience in loan years 2014-15 to 2016-17 compared with projections		
Lower Loans Consolidated	-	166
Higher Interest Capitalized During the non-repayment period(1)	+	6
Higher Repayments from Students	-	131
Lower Defaults	+	127
Higher RAP-Stage 2 Payments from Government	-	33
Lower Loans Forgiven(2)	+	17
Total Effect	-	**180**
Actual Loans In Repayment as at 31 July 2017 (AR 2017)		9,439
Loans In Default		
Expected Loans In Default as at 31 July 2017 (AR 2014)		2,184
Experience in loan years 2014-15 to 2016-17 compared with projections		
Lower Defaults	-	127
Higher Principal Recoveries	-	11
Lower Write-Offs	+	102
Total Effect	-	**35**
Actual Loans In Default as at 31 July 2017 (AR 2017)		2,149
Total Expected Portfolio as at 31 July 2017 (AR 2014)		**18,556**
Total Actual Portfolio as at 31 July 2017 (AR 2017)		**18,214**

(1) Interest capitalized is lower because the student interest rate is lower.
(2) Because of new loan forgiveness for family physicians, nurses and nurse practitioners.

The actual total portfolio as at 31 July 2017 is 2% lower than expected in the previous statutory report. The main reason behind this difference is the lower than expected new loans issued between loan years 2014-15 and 2016-17. In the previous statutory report, the projected new loans issued for loan years between 2014-15 and 2016-17 summed up to $8,405 million. The experience data shows that the actual new loans issued during this period represents $8,075 million (4.0% less than expected for the three-year period). Since the 2014-15 loan year, multiple changes were made to the program. Changes such as the increase to the amount of grants have decreased the needs of student and their loans.

Appendix 4 – 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

The number of students in the CSLP is affected by the demographic evolution of the population, the post-secondary enrolment and the loan uptake rate.

i) Demographic Projections

Demographic projections are based on the population projected in the 27th Actuarial Report on the Canada Pension Plan as at 31 December 2015. More specifically, it starts with the Canadian and Québec populations on 1 July 2015, to which future fertility, mortality and migration assumptions are applied. The population of Canada is adjusted to exclude the non-participating province of Québec as well as the Northwest Territories, Nunavut, and the non-permanent residents. The CPP population projections are essential in determining the future number of students expected to pursue a post-secondary education.

ii) Post-secondary Enrolment

The number of students enrolled full-time in post-secondary institutions is separated by labour force status (in or not in the labour force), age group, gender and institution type (whether the students are attending university, college or private). Since the international students are not eligible to participate in the CSLP, they were excluded from the appropriate sub-group.

For each sub-group, the projection of post-secondary enrolment rate is based on the corresponding historical enrolment data and recent trends. These projected rates are then applied to the corresponding sub-group of the population described in i) above to obtain the expected number of students enrolled full-time.

Table 26 presents the full-time post-secondary enrolment rate by age group, separated according to their labour force status, for the 2016-17, 2026-27 and 2041-42 loan years. In 2016-17, 47% of students enrolled full-time in post-secondary institutions were also participating in the labour force while 53% of them were not participating in the labour force. The post-secondary enrolment rate is higher for the population not in labour force since this population is more inclined to go to school.

Table 26 Full-time Post-Secondary Enrolment Rate by Labour Force Status

		2016-17 (1) (%)	2026-27 (2) (%)	Change in Enrolment (2)/(1)-1 (%)	2041-42 (3) (%)	Change in Enrolment (3)/(1)-1 (%)
In Labour Force (Represents 47% of total enrolment 15-29 in 2016-17)	15-19[1]	17.1	19.9	16.2	19.9	16.2
	20-24	22.3	24.8	11.1	24.8	11.0
	25-29	4.3	4.2	-2.1	4.2	-1.9
	15-29	13.6	15.0	10.4	15.5	14.0
Not In Labour Force (Represents 53% of total enrolment 15-29 in 2016-17)	15-19[1]	24.2	29.1	20.3	29.1	20.2
	20-24	66.9	68.7	2.6	68.7	2.6
	25-29	24.2	22.1	-9.0	22.2	-8.3
	15-29	36.5	37.5	2.7	38.3	4.7
Total Enrolment Over Population 15-29	15-19[1]	20.7	24.2	17.0	24.1	16.1
	20-24	33.7	34.7	3.0	34.1	1.3
	25-29	7.8	7.0	-10.4	6.7	-14.0
	15-29	20.5	21.4	4.2	21.6	5.2

(1) The population aged 15-19 includes students going to high-school that are not considered in the post-secondary enrolment rate. When considering all education levels, including high-school, approximately 80% of the population 15-19 is in school.

Over the projection period, the enrolment rate for students in the labour force is expected to increase more than the enrolment rate for students not in the labour force.

iii) Loan Uptake Rate

The loan uptake is projected based on the type of the educational institution (public college, private college or university) and whether the students are receiving grants. A trend is defined for each group based on the last eight years of historical data (years following the implementation of the CSG) and the expected future mix of the student population. For university and public college students receiving grants, it is assumed that anyone eligible for a grant is already in the CSLP.

The number of students in the CSLP is determined by multiplying the number of students enrolled full-time with the loan uptake.

b) Evolution of CSLP Student Need

ESDC provided CSLP need assessment data for loan year, up to 2015-16. The CSLP generally provides 60% of the assessed need (CSLP need = (assessed need) x 60%), while the participating province or territory of residence provides the remaining 40%. If a student is eligible for a grant, the amount received as a grant reduces the calculated CSLP need, resulting in a net need. The projected annual net need increases come from the projected increases in expenses (tuition, compulsory fees and other expenses) partially offset by the projected increases in resources and grants. These net need increases are calculated separately for each group (college, university and private school students) over the 25-year projection period.

i) Tuition

Tuition fees are, in part, determined by government policies. Thus, they are projected using provincial budgets stating the Government’s intentions, along with recent and historical experience of tuition fee increases. The short-term projected increases in tuition fees are shown in Table 27. It is assumed that the most recent provinces’ budgetary intentions will not change until 2018-19.

Table 27 Short-term Increase of Tuition Expenses

Province	Weight	Budget/Experience	2017-18	2018-19	2019-20	2020-21
	(%)		(%)	(%)	(%)	(%)
Newfoundland	1.1	2.3% increase	2.3	2.3	2.3	2.3
Prince Edward Island	0.5	3.0% increase, 3.0% thereafter	3.0	3.0	3.0	3.0
Nova Scotia	4.7	5.5% increase, 3.0% thereafter	5.5	3.0	3.0	3.0
New Brunswick	2.2	2.7% increase, 1.0% thereafter	2.7	1.0	1.0	1.0
Ontario	64.0	3.7% increase, 3.0% thereafter	3.7	3.0	3.0	3.0
Manitoba	1.6	1.4% increase, 7.0% thereafter	1.4	7.0	7.0	7.0
Saskatchewan	2.7	2.3% increase, 4.0% thereafter	2.3	4.0	4.0	4.0
Alberta	11.6	Tuition Freeze	0.0	0.0	0.0	0.0
British Columbia	11.6	2.0% increase	2.0	2.0	2.0	2.0
Weighted Average			**3.0**	**2.6**	**2.6**	**2.6**

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 the population. The long-term estimate of tuition is based on past increases in tuition relative to increases in the consumer price index (CPI). Over the last 10 years, tuition increases have been, on average, close to CPI plus 2.1%. Therefore, the 2.6% tuition increase for 2018-19 is graded to reach the CPI increase plus 2.0% by 2025-26.

The starting point for the 2015-16 tuition fees is calculated from the need assessment data file and represents the average tuition fees for students who received a loan. Tuition fees were calculated for each of the three student groups (college, university and private) and a weighted average was determined based on the number of students in each group. This calculation resulted in a tuition fee estimate of $8,300 for the 2015-16 loan year. The estimated weighted average tuition fees (including compulsory fees) for 2016-17 are $8,600 based on an annual tuition increase of 3.6%.

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. The average expense is calculated from the CSLP need assessment data file and represents the average expenses for students who receive a loan. The estimated average for other expenses is $10,600 for the 2015-16 loan year and increased to $10,800 in the 2016-17 loan year based on the CPI increase of 1.5%.

iii) Student Resources

Student resources include student, parental and spousal contributions. Increased resources reduce the maximum loan available to students through the need analysis. Student need is summarized in Table 5 of the Main Report.

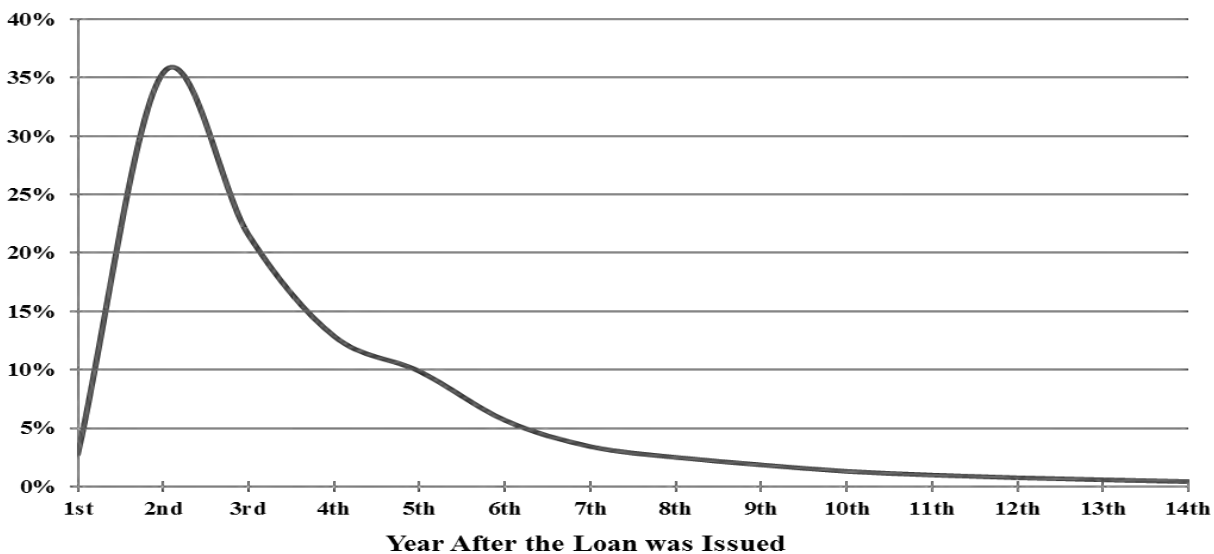
The starting point for average resources in 2015-16 is calculated from the need assessment data file and represents the average resources for students who received a loan. The future average resources are projected using the wage increase assumption. As such, the estimated student average resources is $5,300 for 2016-17. Considering the new resource assessment based on a maximum fixed student contribution, the average annualized student resources are projected to decrease to $2,600 for the 2017-18 loan year.

2. Consolidation

Under the direct loan regime, loans are assumed to consolidate according to the distribution of consolidation by year shown in Chart 3 over a period of fifteen years after a loan is issued. This distribution is built using the experience of direct loan consolidations.

Each year, some borrowers having previously consolidated their student loans choose to return to school. For projection purposes, the consolidated loan amounts in each future loan year are calculated net of loans for borrowers who returned to school. Hence, the students only consolidate once for modelling purposes.

Chart 3 Distribution of Consolidation



3. Repayment Assistance Plan

a) Repayment Assistance Plan – Stage 1

Effective August 2009, the Repayment Assistance Plan (RAP) replaced the Interest Relief and Debt Reduction in Repayment measures. The RAP consists of two stages that are described in Appendix 1. Borrowers can be enrolled in Stage 1 for up to five years over a ten-year period. Borrowers who qualify will make an affordable payment (or no payment) toward their loan principal. The Government will cover the interest amount not covered by the borrower's affordable payment.

Table 28 shows the entrance and continuation rates of RAP-Stage 1 for the direct loan regime for consolidation cohort 2018-19 and onwards. These rates are based on both the Interest Relief and the RAP experience of direct loans and are adjusted to reflect the increase to the RAP income thresholds implemented on 1 November 2016.

The rates on the first row of Table 28 are multiplied by the consolidated amount for each cohort; the dollars obtained for this row are those entering RAP-Stage 1 for the first time in any given year after consolidation. All other rates represent the percentage of dollars continuing from one year to the next. It is worth noting that because many borrowers complete their RAP-Stage 1 over a period longer than five years, the continuation rates do not always include the same borrowers from year to year and some borrowers may be in the program for only part of a year.

The model takes all this into account by incorporating the average time spent in RAP-Stage 1 in a loan year.

The rates were developed based on average loan dollars, prorated for the number of months in RAP in each loan year. The first row of Table 28 represents the entrance rates in RAP-Stage 1. The percentages are based on the prorated average amount of loans which enters RAP-Stage 1 in a given loan year over the total consolidated loans amount of that consolidation cohort. The second row and the following rows of Table 28 represent the continuation rates in RAP-Stage 1. These percentages are based on the prorated amount of loans in RAP-Stage 1 for a given loan year over the corresponding borrower's prorated amount of loans in RAP-Stage 1 in the preceding loan year. Because the first year of RAP-Stage 1 (first row of Table 28) consists of a partial loan year for all of those who commence RAP-Stage 1 after the first month of a loan year, it is possible that the second year's rate (second row of Table 28) be greater than 100%, even though some people exit the program permanently or for a period of time (as illustrated by the 114% in Table 28). Let's consider the example of a borrower who consolidates $12,000 in July 2018 and enters RAP Stage 1 immediately for a six-month period. This borrower will have a prorated amount of $1,000 ($12,000/12) of loans in RAP-Stage 1 in loan year 2017-2018 (one month in RAP Stage 1). In the following loan year, this borrower will have a prorated amount of $5,000 ($12,000/12*5) of loans continuing in RAP-Stage 1 (five months in RAP-Stage 1). For this particular borrower, the RAP-Stage 1 continuation rate would be 500% ($5,000/$1000).

The 9.5 year period after consolidation covered by RAP-Stage 1 can extend over eleven different loan years. For example, someone who would consolidate on 1 July 2001 would have a potential RAP-Stage 1 period starting on 1 July 2001 (loan year 2000-2001) and ending on 1 January 2011 (loan year 2010-2011). Table 28 does not show the entrance rates for the ninth and tenth years after consolidation since they are negligible.

Table 28 RAP-Stage 1 Entrance/Continuation Rates for the Direct Loan Regime

	RAP1 Loan Year	Start Year after Consolidation							
		1	2	3	4	5	6	7	8
Entrance	1	29.6%	3.3%	1.2%	0.5%	0.3%	0.2%	0.1%	0.1%
Continuation	2	114.0%	83.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%
	3	65.0%	65.0%	65.0%	60.0%	50.0%	55.0%	55.0%	60.0%
	4	78.0%	80.0%	80.0%	75.0%	75.0%	70.0%	60.0%	40.0%
	5	80.0%	80.0%	80.0%	70.0%	80.0%	70.0%	25.0%	
	6	60.0%	60.0%	70.0%	60.0%	55.0%	15.0%		
	7	35.0%	40.0%	40.0%	45.0%	10.0%			
	8	55.0%	60.0%	50.0%	15.0%				
	9	65.0%	60.0%	20.0%					
	10	55.0%	15.0%						
	11	15.0%							

b) Repayment Assistance Plan – Stage 2

RAP-Stage 2 is available for borrowers who continue to experience financial difficulty. It starts once the borrower has exhausted Stage 1 or has been in repayment for 10 years after they leave school or complete their studies. The Government will continue to cover the interest and begin to cover a portion of the principal (i.e. the difference between the affordable payment and required payment), on a monthly basis. The balance of the loan should be gradually paid off such that the student loan debt has been repaid in full within 15 years of the borrower leaving school.

The methodology assumes that as people become eligible for RAP-Stage 2 (after 5 years in RAP-Stage 1), they will immediately enter RAP-Stage 2. This means that a person can enter RAP-Stage 2 between the 6th year after consolidation until the 11th year after consolidation (the last possible year of eligibility in RAP-Stage 1). Although it would be possible for someone whose study period ended ten years ago or more to enter RAP-Stage 2 directly, the data shows that these amounts are negligible and would not have any material impact on the results so they are not included in the rate assumptions for RAP-Stage 2. This also makes sense since the normal amortization period for a loan is the 9.5 year period after consolidation; in other words, if someone never enters RAP-Stage 1 and repays their loan normally, the loan should be fully repaid ten years after the end of the study period (9.5 years after consolidation). The entrance and continuation rates for RAP-Stage 2 are based on the analysis of the historical data available for each cohort of consolidation.

Table 29 displays the rates of entrance and continuation for RAP-Stage 2. For example, the 48% displayed in the table represents borrowers who completed their RAP-Stage 1 in five consecutive years and entered RAP-Stage 2 immediately after (at the beginning of the sixth year). The rate of 48% is calculated based on borrowers in RAP-Stage 1 at their time of exit.

Similar to RAP-Stage 1 continuation rates, RAP-Stage 2 continuation rates are developed based on average loan dollars, prorated for the number of months in Rap-Stage 2 in each loan year. As such, the first year of RAP Stage 2 continuation rate may be greater than 100% (as illustrated by the 170% in the bottom part of Table 29) as the first year of RAP-Stage 2 may consists of a partial loan year.

Table 29 RAP-Stage 2 Entrance/Continuation Rates for the Direct Loan Regime

RAP1 Start Year After Consolidation	RAP2 Start Year after Consolidation					
	6	7	8	9	10	11
1	48.0%	35.0%	20.0%	15.0%	15.0%	10.0%
2		50.0%	25.0%	15.0%	10.0%	10.0%
3			50.0%	25.0%	15.0%	10.0%
4				25.0%	20.0%	15.0%
5					25.0%	20.0%
6						25.0%
RAP2 Year of Continuation	**RAP2 Start Year after Consolidation**					
	6	**7**	**8**	**9**	**10**	**11**
1	170.0%	100.0%	100.0%	100.0%	100.0%	100.0%
2+	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%

c) Repayment Assistance Plan – Permanent Disability (RAP-PD)

RAP-PD is available for borrowers with a permanent disability. A borrower who had a RAP-PD application approved is eligible to start in the RAP-PD as soon as his loan consolidates and can remain in the plan for a period of 9.5 years, when the loan is expected to have been repaid in full. Depending on his financial situation, the borrower may need to make a monthly affordable payment. As with RAP-Stage 2, this payment first covers the amount of principal due and potentially a portion of the interest. The Government covers the difference between the affordable payment and required payment, on a monthly basis.

Table 30 shows the long-term utilization rate assumptions used for RAP-PD. These utilization rates are applied to the consolidated loans amount for each future cohort.

Table 30 RAP-PD Utilization Rates for the Direct Loan Regime

RAP-PD	Start Year after Consolidation							
Loan Year	1	2	3	4	5	6	7	8
1	1.95%	0.20%	0.10%	0.10%	0.03%	0.02%	0.01%	0.01%
2	2.30%	0.20%	0.10%	0.07%	0.02%	0.01%	0.01%	0.01%
3	1.50%	0.15%	0.07%	0.05%	0.01%	0.01%	0.01%	0.01%
4	1.10%	0.10%	0.05%	0.04%	0.01%	0.01%	0.01%	0.01%
5	0.80%	0.10%	0.04%	0.03%	0.01%	0.01%	0.01%	
6	0.60%	0.10%	0.03%	0.02%	0.01%	0.01%		
7	0.50%	0.07%	0.02%	0.01%	0.01%			
8	0.30%	0.05%	0.01%	0.01%				
9	0.21%	0.04%	0.01%					
10	0.15%	0.03%						
11	0.03%							

d) Provision for Repayment Assistance Plan – Principal (Stage 2 and PD)

A provision for RAP – principal (for both RAP-Stage 2 and RAP-PD) is established to cover the risk associated with this measure. The provision recognizes that part of the loan principal will be paid by the government. In this report, the payment portion to be paid by the government is approximately 95% for RAP-Stage 2 and for RAP-PD. The methodology is based on a snapshot of the portfolio at a given time and the status of the loans (in-study, in repayment or in RAP) which reflects different level of risks. The provision rates are determined based on the projected principal amount borne by the Government under the RAP-Stage 2 and PD, resulting from the rate assumptions described in a) to c) above. For the 2017-18 loan year, the allowance for RAP – principal is determined using the outstanding balance of portfolios and the corresponding provision rates according to the status of the loans as follows:

- 5.3% of balance of loans in-study;
- 1.3% of balance of loans in repayment (reduced by loans in RAP – all stages); and
- 22.2% of balance of loans in RAP (all stages).

In comparison with loans in-study, the portfolio of loans in repayment includes cohorts of loans for which partial reimbursements have already occurred, as well as some defaults and utilization of RAP, resulting in a lower risk for the remaining loans and consequently a lower required provision rate. The highest risk related to the RAP is obviously for the portfolio of loans already in RAP. The provision rate for the portfolio of loans in RAP (Stages 1, 2 and PD) is currently 22.2%.

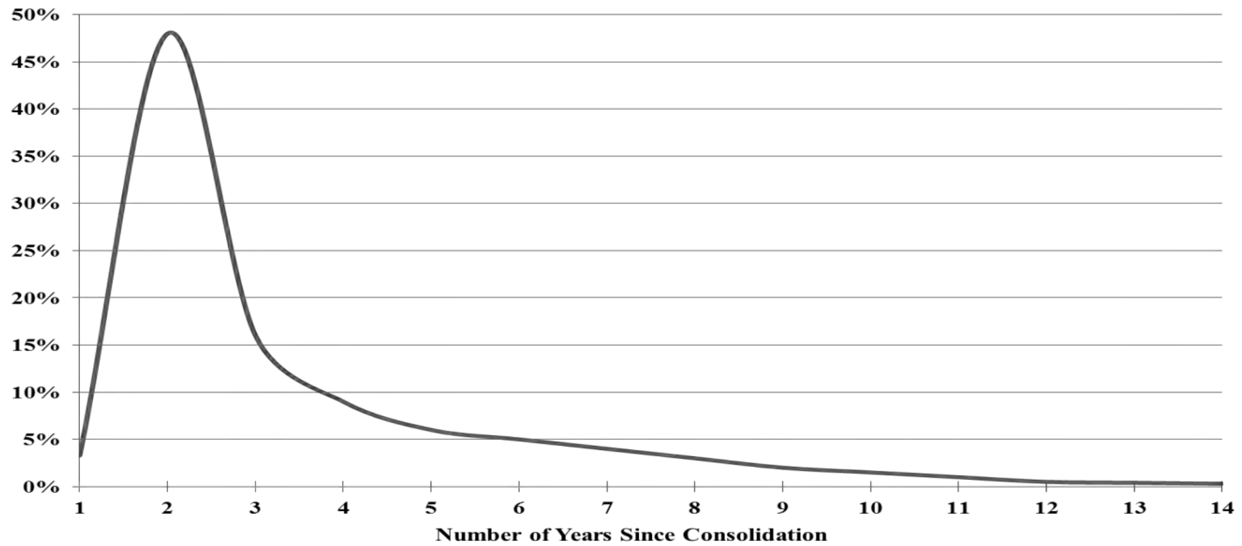
It is worth noting that there is still limited experience for the RAP, so the assumptions may need to be revised as more data becomes available.

4. Bad Debt

a) Default Rate

The default distribution is based on direct loans experience. The average distribution is shown in Chart 4. According to this distribution, 67% of defaulted loans occurred in the first three years following consolidation and 76% occurred in the first four years.

Chart 4 Default Distribution

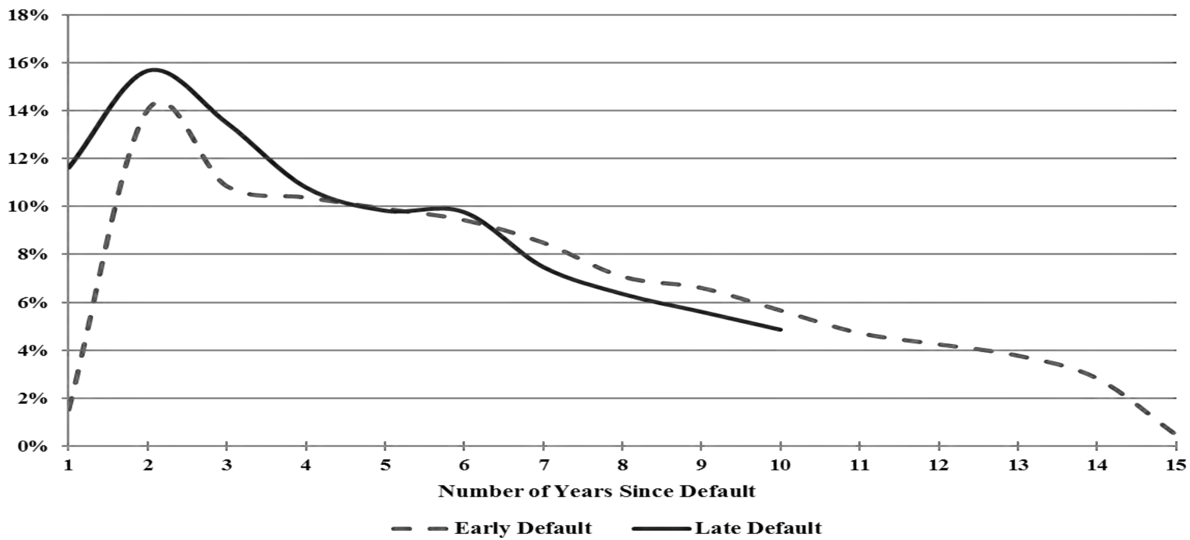


The long-term assumption for the future gross default rate by consolidation cohort is 14.8%. The long-term assumption for recalls and rehabilitations represent 8.3% of gross defaults, which decreases the default rate to 13.6% [14.8% x (1 – 8.3%)]. For a given consolidation cohort, the default rate of 13.6% represents the proportion of the total amount of loans expected to default in the future (spread over fourteen years after consolidation, as per Chart 4). A portion of these defaulted loans will then be recovered by the Government.

b) Recovery Rate

The assumed recovery distribution (Chart 5) is also based on direct loans experience. Six separate distribution curves were developed to extrapolate data in future years. Chart 5 shows the extreme curves. The dotted curve represents the distribution of recoveries used to extrapolate recovery amounts for defaults that occur in the first year after consolidation (early defaults). The solid curve represents the distribution of recoveries used to extrapolate recovery amounts for defaults that occur in the sixth year after consolidation and thereafter (late defaults). In the first four years after default, the recovery distribution for late defaults (solid curve) for the borrowers who have already been in the repayment period for more than five years and have reimbursed part of the loan before defaulting is higher than the recovery distribution for early defaults (dotted curve) for the borrowers who have made no or very few payments on their loan before defaulting.

Chart 5 Recovery Distributions Depending on Date of Default



Based on the experience data, the recovery rate is lower for loans that default in the first year after consolidation compared to loans that default later after consolidation. The assumed recovery rate is 21.5% for defaults occurring in the first year after consolidation. This rate is assumed to increase afterward to 31% for defaults occurring in the second year after consolidation and 33.5% for defaults occurring in the third year following consolidation. The rate is 31% for defaults occurring from the fourth year following consolidation. This set of three recovery rates remains constant over the long-term. The resulting recovery rate for an entire default cohort is 31.1% for each future default cohort.

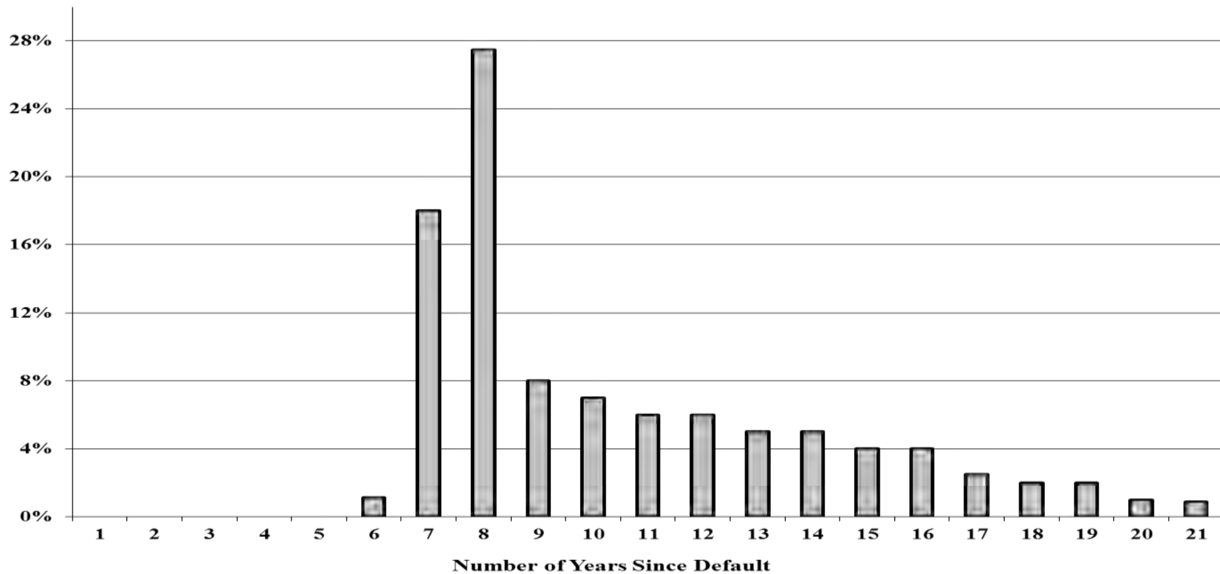
c) Net Default Rate

As described under section a) and b) above, the assumption for the future gross default rate is 14.8% of consolidations and is reduced to 13.6% to consider future recalls and rehabilitations which represent 8.3% of gross defaults. The assumption for the future recovery rate is 31.1% of gross defaults. The resulting long-term future net default rate is 9.0%. It corresponds to:

Gross Default Rate x (1 – Recalls and Rehabilitations – Recovery Rate) =
14.8% x (1 – 8.3% – 31.1%).

The net default rate represents the proportion of consolidated loans that will eventually be written off for each future consolidation cohort. The amount of loans to be written-off each year is determined using an assumption regarding the time the loan is recognized as non-recoverable and has exceeded the limitation period, which consists of a 16-year distribution starting in the sixth year following default. The six year delay takes into account the limitation period as stated in section 16.1 of the *Canada Student Financial Assistance Act*. The assumed distribution is presented in Chart 6.

Chart 6 Non-Recoverable and Limitation Period Exceeded Distribution



d) Bad Debt Provision – Principal

According to the accounting recommendations under Section PS 3050 Loans Receivable of the Public Sector Accounting Handbook of the Chartered Professional Accountants Canada, 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 9.0%.

The calculation of the allowance is separated into three components according to the status of the loan; that is whether the loan is in-study, in repayment (according to the number of years since consolidation) or defaulted (according to the number of years since default). Future assumed rates of default and recovery are applied to these portfolio amounts to determine the allowance that must be put aside to pay future write-offs. The future net default rate of 9.0% of consolidated loans needs some adjustments in order to be applied to loans in-study. First, a small upward adjustment of 0.4% is required to account for the difference between loans at issuance and loans at consolidation resulting from interest accrued during the six-month non-repayment period. Second, another adjustment is required to consider that some loans are repaid while the borrower is in school or during the six-month non-repayment period and will never consolidate. Those prepayments are assumed to represent around 15% of future consolidated loans. Consequently, a net default rate of 9.0% of consolidated loans translates in a 8.0% rate of loans in-study [(9.0% + 0.4%) x 85.0%].

Table 31 Provision Rate for Bad Debt – Principal

Gross Default Rate (a)	14.8%
Rehabilitations and Recalls (b)	8.3%
Default Rate, net of Rehabilitations and Recalls (c) = (a) x (1 - b)	13.6%
Recoveries (d)	31.1%
Net Default Rate (e) = (a) x (1 - b - d)	9.0%
Adjustment: Interest accrued on loans during the non-repayment period (f)	0.4%
Adjustment: Prepayments (g)	85.0%
Bad Debt Provision – Principal: Applied to Balance of Loans In-Study (e + f) x (g)	**8.0%**

For the 2017-18 loan year, the allowance component on the balance of loans in-study is determined using a blend of short and long term assumptions as loans presently in study will consolidate according to the consolidation distribution over the next 15 years. The blended net default rate is 8.9%, which is slightly lower than the long term default rate of 9.0%. the provision rate is 7.9% [(8.9% + 0.4%) x 85.0%].

For the 2017-18 loan year, the allowance for bad debt – principal is determined using the outstanding balance of portfolio and the corresponding provision rates according to the status of the loans as follows:

- 7.9% of the outstanding balance of loans in-study;
- 3.9% of the outstanding balance of loans in repayment; and
- 77.3% of the outstanding balance of loans in default.

e) Bad Debt Provision – Interest

The methodology for the calculation of the provision for bad debt – interest takes into account the number of years since default. Interest on defaulted loans is accrued until the loan reaches the "non-recoverable" status. A loan reaches this status when the collection of either principal or interest is not reasonably assured. For the purpose of the projections, a loan is transferred to "non-recoverable" status according to a 16-year distribution and is then gradually written off.

Since the interest on defaulted 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 defaulted loans at the student's cost of borrowing rates,
- the projected outstanding interest at the end of each year, using non-recoverable and recovery rates, based on direct loans experience and applied to outstanding interest at the beginning of the year,
- the projected allowance at the end of each year by adding, per year since default, 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 difference between the total allowance (on recoverable and non-recoverable accounts) at the end of the year and the allowance of the previous year net of write-offs that have occurred during the year. A set of provision rates that vary according to the number of years since default was established. The rates shown in Table 32 have been modified from the last report to consider recent experience in interest recoveries.

Table 32 Provision Rates for Bad Debt – Interest

Year Since Default	Provision Rates (%)
1st	26.3
2nd	36.9
3rd	47.2
4th	57.0
5th	67.4
6th	58.7
7th	53.1
8th	55.6
9th	58.1
10th	61.0
11th	64.8
12th	70.7
13th	79.2
14th	88.9
15th	100.0

5. Other Assumptions

a) Prepayments and Accelerated Payments for Direct Loans

The analysis of principal payments made by students revealed that some payments are received while the student is still in school or during the non-repayment period (prepayments) and some payments are received in excess of the scheduled payments during the repayment period (accelerated payments).

iv) Prepayments

Prepayments correspond to payments applied to principal during the period of study and during the six-month non-repayment period after the period of study end date. The amount of prepayments for 2016-17 was $393 million. Around 30% of this amount is received during the period of study and the remaining 70% is received during the non-repayment period. Over the long-term, it is assumed that around 15% of loans issued are prepaid.

v) Accelerated Payments

Normal principal payments received from students are calculated based on a standard 114-month repayment period. However, some students decide to pay more than the required monthly payments during the amortization period. In addition, loans with an outstanding balance smaller than $7,000 are actually amortized over a shorter period of time as per ESDC's guidelines. In both situations, the payment made by the student is greater than their calculated normal payment. The additional amounts paid represent the accelerated payments. Over the long-term, it is assumed that these payments add up to approximately 20% of the sum of normal payments for each loan year.

b) Alternative Payments

Alternative payments are made directly to the province and territories that do not participate in the CSLP, namely Québec, the Northwest Territories, and Nunavut. These 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.

The expenses included in the calculation are: interest subsidies, RAP – interest expenses for risk-shared and guaranteed regimes, loans forgiven, service providers' costs, CSG, claims, RAP-Stage 2 payments, risk premiums, put-backs, refunds to financial institutions, direct loans'

borrowing costs for loans in good standing and default amounts for the direct loan regime. The revenues include: student interest payments, and principal and interest from recoveries. The cost of alternative payments is $270 million for 2016-17 based on expenses and revenue of 2015-16 and $339 million for 2017-18 based on expenses and revenue of 2016-17.

c) Administrative Expenses

ESDC provided estimates of the administrative expenses to support the CSLP for the 2017-18 to 2020-21 fiscal years. The costs have been converted to a loan year basis and the extrapolation of future years was done using wage increases. Administrative expenses include ESDC salary and non-salary resources related to the CSLP as well as expenses for service providers and collection costs.

Table 33 Administrative Expenses

Loan Year	Administrative Expenses
	($ million)
2016-17	134.0
2017-18	137.9
2018-19	136.9
2019-20	139.7
2020-21+	Increases with wages

d) Administrative Fees Paid to Provinces

For loan year 2016-17, the administrative fees paid to the participating provinces and territory were $23.9 million. Future years were projected using wage increases.

e) Canada Student Grants

For the 2016-17 loan year, the actual cost of Canada Student Grants (CSG) was $1,015 million. The total amount of grants disbursed under the CSG is projected to increase over the projection period based on the number of students in the CSLP.

f) Loans Forgiven

There are two categories of loans forgiven: those forgiven for severe permanent disability and death, and those forgiven for family physicians, nurses and nurse practitioners who work in an under-served rural or remote community.

Long-term rates of loans forgiven for severe permanent disability and death correspond to 0.025% of loans in study and 0.05% of loans in repayment. In 2016-17, there was an additional $11.3 million of loans forgiven while in default. This represents 0.5% of outstanding defaulted loans. A rate of 0.5% is used to project forgiveness while in default for future years.

Loan forgiveness for family physicians, nurses and nurse practitioners is a new program accessible to borrowers who began to work in an under-served rural or remote community on or after 1 July 2011 as a family physician, nurse or nurse practitioner. Applications under the program started being accepted as of 1 April 2013 for periods of work of one year that started on or after 1 April 2012. To be eligible for forgiveness, borrowers must have been employed for a full year (12 months) in a designated community and provided in-person services for a minimum of 400 hours (or 50 days) in that community. However, in the case of family medicine residents, the full 12 month period of service is not required for eligibility. Family doctors and family medicine residents are eligible for forgiveness of $8,000 per year to a maximum of $40,000 over five years while nurse practitioners and nurses may be eligible for forgiveness of $4,000 per year to a maximum of $20,000 over five years. The amount forgiven is projected based on the expected new number of doctors and nurses who received student loans during their studies and are expected to work in an under-served rural or remote community after graduation.

Appendix 5 – Sensitivity Tests

The CSLP actuarial valuation involves the projection of the Program's revenues and expenses. The information presented in section A of the Main Report was derived using "best-estimate" assumptions. Because of the length of the projection period and the number of assumptions required, it is unlikely that actual future experience will develop precisely in accordance with the best-estimate assumptions. Sensitivity tests were performed using alternative assumptions to project the Program's financial results.

For each sensitivity test, one key assumption was changed while the others remained at their best-estimate levels. Two tests were performed for each assumption tested, except for the loan limit, grants and student's contributions where only one test was performed. The alternative assumptions were selected to represent a reasonable range of potential long-term experience. They do not however exclude the possibility of actual experience falling outside the range studied.

Each test performed was labeled as either "low-cost" or "high-cost". In the "low-cost" scenarios, the alternative assumptions reduce the annual cost of the Program, while in the "high-cost" scenarios, they increase it.

Table 34 below summarizes the alternative assumptions that were used in the sensitivity tests; a brief discussion of each assumption subsequently follows.

Table 34 Long-term Sensitivity Test Assumptions

	Assumption	Low-cost	Best-estimate (B-E)	High-cost
1.	Loan Limit	-	Frozen	Indexed to inflation
2.	Loan Limit and Grants	-	Frozen	Indexed to inflation
3.	Fixed Student Contribution	Indexed to inflation	Frozen	-
4.	Real Wage Increases	0.6%	1.1%	1.6%
5.	Inflation	1.0%	2.0%	3.0%
6.	Post-secondary Enrolment Rate – 2041-42 (Canada less Québec, Northwest Territories and Nunavut)	22.4%	24.4%	26.4%
7.	Tuition Cost	CPI	CPI + 2.0%	CPI + 4.0%
8.	Interest Rates:			
	Government's Cost of Borrowing	2.4%	4.4%	6.4%
	Student's Cost of Borrowing	5.3%	7.3%	9.3%
9.	RAP-Stage 1 Entrance Rates	70% of B-E	Line 1 of Table 28	130% of B-E
10.	Net Defaults	6.8%	9.0%	11.3%
11.	Student Interest Rate Spread	350 bps	250 bps	100 bps

1. Indexation of the Loan Limit

For this test, the $210 weekly loan limit is indexed annually to inflation starting in the 2018-19 loan year, thereby showing the effect of many small annual increases on the loan limit. The direct effects are a decrease in the proportion of students at the loan limit and an increase in the total amount of loans issued. The impact on loans issued increases gradually from 1% in 2018-19 to 53% at the end of the projection period, as shown in Table 35.

Table 35 Impact of Loan Limit on Loans Issued

Loan Year	Limit frozen at $210			Indexed to Inflation Starting in 2018-2019				
						Loans Issued		
	Limit	% of Students at the Limit	Loans Issued Total	Limit	% of Students at the Limit	Total	Increase Over Frozen	
	($)	(%)	($ million)	($)	(%)	($ million)	($ million)	(%)
2016-2017	210	36.4	2,628	210	36.4	2,628	-	-
2017-2018	210	43.0	3,317	210	43.0	3,317	-	-
2018-2019	210	45.8	3,371	214	43.7	3,410	39	1
2021-2022	210	52.9	3,543	227	47.3	3,722	179	5
2026-2027	210	66.0	3,869	251	54.1	4,379	510	13
2031-2032	210	79.1	4,309	277	60.9	5,345	1,036	24
2036-2037	210	87.7	4,757	306	69.2	6,544	1,787	38
2041-2042	210	93.9	5,230	338	76.3	8,009	2,779	53

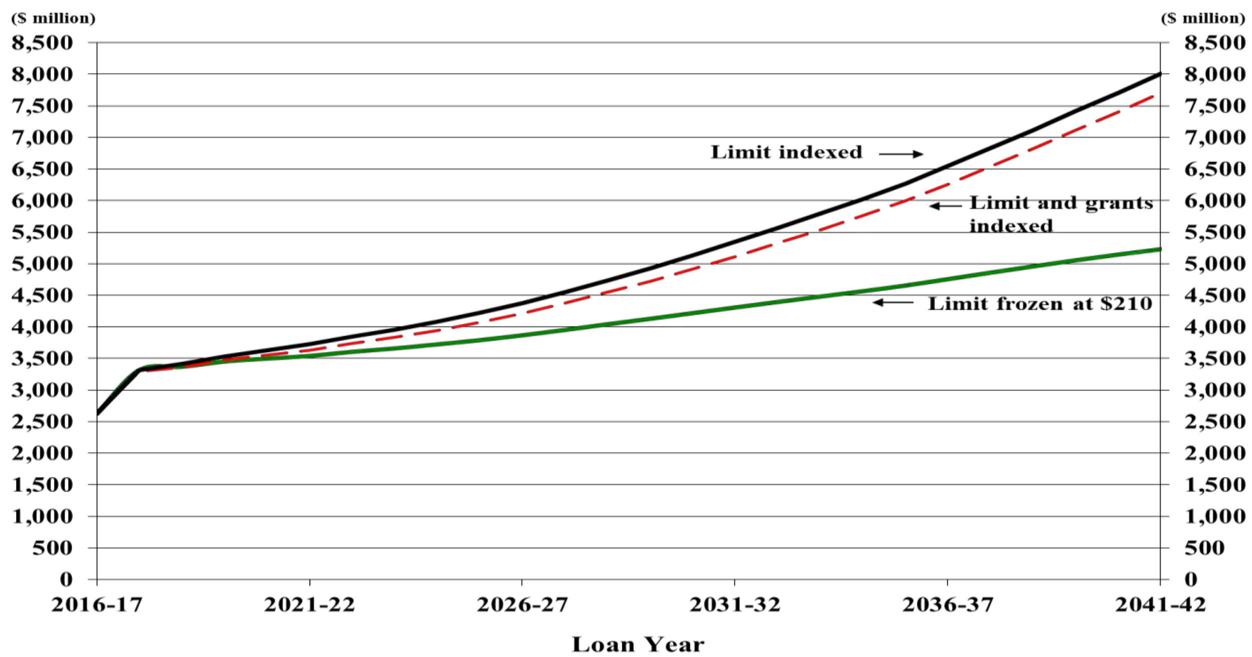
2. Indexation of Loan Limit and Grants

For this test, both the loan limit and grants are indexed annually to inflation. The grants increase lessen the effect of the loan limit increases. Consequently, the impact on total loans issued is smaller than in the first sensitivity test. Table 36 and Chart 7 show the impact of indexing the loan limit and grants.

Table 36 Impact of Indexation of Loan Limit and Grants on Loans Issued

Loan Year	Limit frozen at $210			Limit and Grants Indexed to Inflation Starting in 2018-2019					
	% of Students at the Limit	Loans Issued Total	Grants Total	Limit	% of Students at the Limit	Loans Issued Total	Increase over Frozen	Grants Total	Increase over Frozen
	(%)	($ million)	($ million)	($)	(%)	($ million)	(%)	($ million)	(%)
2016-2017	36.4	2,628	1,015	210	36.4	2,628	-	1,015	-
2017-2018	43.0	3,317	1,372	210	43.0	3,317	-	1,372	-
2018-2019	45.8	3,371	1,456	214	41.9	3,363	-0.2	1,483	2
2021-2022	52.9	3,543	1,346	227	44.2	3,627	2.4	1,455	8
2026-2027	66.0	3,869	1,346	251	49.6	4,213	8.9	1,605	19
2031-2032	79.1	4,309	1,417	277	54.7	5,115	18.7	1,862	31
2036-2037	87.7	4,757	1,491	306	60.7	6,262	31.6	2,161	45
2041-2042	93.9	5,230	1,584	338	66.7	7,701	47.3	2,533	60

Chart 7 New Loans Issued with Indexation of Loan Limit and Grants



3. Indexation of the Fixed Student Contribution

The fixed student contribution is used in the projection of a student's resources in the need assessment process.

For this test, the fixed student contribution (between $1,500 and $3,000) is indexed annually to inflation starting in the 2018-19 loan year. Increasing the fixed student contribution slightly decreases the proportion of students at the loan limit and the total amount of loans issues. The impact on loans issued is stable over the projection period, as shown in Table 37.

Table 37 Impact of Indexation of Fixed Student Contribution on Loans Issued

	No Change to Fixed Student Contribution		Fixed Student Contribution Indexed to Inflation Starting in 2018-19		
	% of Students at the Limit	Loans Issued Total	% of Students at the Limit	Loans Issued Total	Increase
		(% millions)		(% millions)	(%)
2016-2017	36.4%	2,628	36.4%	2,628	-
2017-2018	43.0%	3,317	43.0%	3,317	-
2018-2019	45.8%	3,371	45.1%	3,353	-0.5
2021-2022	52.9%	3,543	51.9%	3,508	-1.0
2026-2027	66.0%	3,869	63.7%	3,816	-1.4
2031-2032	79.1%	4,309	76.4%	4,253	-1.3
2036-2037	87.7%	4,757	85.0%	4,705	-1.1
2041-2042	93.9%	5,230	91.3%	5,189	-0.8

4. Real Wage Increase

Real wage increases are used in the projection of a student's resources in the need assessment process and in the projection of the Program's administrative expenses.

Under the best-estimate assumption, an ultimate real wage increase of 1.1% is assumed starting in the 2024-25 loan year. Combined with the best-estimate inflation assumption of 2.0%, it results in a nominal annual ultimate wage increase of 3.1%.

The sensitivity tests show the impact of a 50 basis points change in the annual real wage increase, either decreasing the ultimate real wage increase to 0.6% or increasing it to 1.6%. These sensitivity tests have a small impact on the net cost of the Program since the total portfolio and the administrative expenses vary in opposite directions when applying a wage variation.

5. Inflation

Under the best-estimate assumptions, an ultimate annual inflation rate of 2.0% is assumed to be reached in the 2018-19 loan year. The inflation rate affects the growth of a student's expenses, the growth of the Program's expenditures and the student resources. It also affects the Government's cost of borrowing, as well as the repayment rate charged to students.

Under the low-cost scenario, the ultimate annual inflation rate is assumed to decrease to 1.0% in 2018-19, whereas under the high-cost scenario it is assumed to increase to 3.0%.

6. Post-secondary Enrolment Rate

The number of students enrolled full-time in a post-secondary institution is projected separately for students participating in the labour force and for students who are not part of the labour force. As shown in Table 4, the 2041-42 post-secondary enrolment is 1,331,000 and the population aged 15-29 is 5,464,000, resulting in an overall post-secondary enrolment rate of 24.4%. The sensitivity tests show the variation in results based on an increase or decrease of students pursuing a post-secondary education.

In the low-cost scenario, post-secondary enrolment rates decrease by 8% throughout the projection period, which results in a rate of 22.4% in 2041-42. Such a decrease could be experienced if the labour shortage worsened.

In the high-cost scenario, post-secondary enrolment rates increase by 8% throughout the projection period, which results in a rate of 26.4% in 2041-42. Such an increase could be experienced if unemployment rates rose.

The amount of loans issued is directly correlated to the enrolment rate so having 8% more students enrolled in a post-secondary institution results in 8% more loans issued.

7. Tuition Cost

The long-term estimate of tuition increases is based on past tuition increases relative to the CPI. Over the last ten years (2007-08 to 2016-17), yearly tuition increases have, on average, corresponded to increases in the CPI plus approximately 2.1%. CPI plus 2.0% is used as the best-estimate ultimate growth rate.

In the low-cost scenario, the ultimate tuition increase is expected to be equal to increases in the CPI. This result is more in line with increases of other goods and services.

In the high-cost scenario, the ultimate tuition increase is expected to correspond to increases in the CPI plus 4.0%. With the aging of the population, budgetary pressures can be anticipated, which could lead to higher tuition increases.

8. Interest Rates

The rate of borrowing has an impact on the cost of the interest subsidy for students in school, on the cost of providing RAP (interest portion) to students in need and on the Government's cost of borrowing. This assumption also affects the student rate of borrowing. The low-cost scenario reduces the interest rates by 200 basis points and the high-cost scenario increases them by 200 basis points. Each of these scenarios is plausible based on historical rates.

9. Repayment Assistance Plan (RAP)

RAP is a plan that was implemented in August 2009 to replace the Interest Relief and DRR measures. The utilization of the RAP can vary according to the existing economic situation and students' awareness of this repayment assistance. The low-cost scenario reduces the entrance rates of RAP-Stage 1 by 30% while the high-cost scenario increases them by 30%. Because borrowers move from RAP-Stage 1 to RAP-Stage 2, any change in the entrance rates of RAP-Stage 1 affects RAP-Stage 2.

10. Net Defaults

One of the risks for the Government of being involved in the CSLP is the amount of loans that may not be recovered due to defaults. The assumed future net default rate on consolidated loans is 9.0% which corresponds to a default rate of 14.8%, a rehabilitations and recalls rate of 8.3% and a recovery rate of 31.1% [9.0% = 14.8% x (1 – 8.3% – 31.1%)]. This rate is closely linked with the availability of employment for new graduates since it affects their ability to repay their loans.

In the low-cost scenario, the future default rate is reduced by 300 basis points, to 11.8%, while the future recovery rate is increased by 300 basis points to 34.1%. This results in a net default rate of 6.8% [11.8% x (1 – 8.3% – 34.1%)].

In the high-cost scenario, the future default rate is increased by 300 basis points, to 17.8%, while the future recovery rate is reduced by 300 basis points, to 28.1%. This results in a net default rate of 11.3% [17.8% x (1 – 8.3% – 28.1%)]. Both of these tests affect the provision rates for bad debt – principal.

11. Student Interest Rate Spread

The student's cost of borrowing, used to calculate interest revenue, is the sum of the prime rate and a spread of 250 basis points. In the low-cost scenario, the spread is increased to 350 basis points, while in the high-cost scenario, it is reduced to 150 basis points. Changing the student interest rate spread has a direct impact on the interest paid by students, which in turn affects total revenues. In the low-cost scenario, revenues increase, while in the high-cost scenario, they decrease.

Table 38 below summarizes the results of each of the sensitivity tests at the end of the projection period.

Table 38 Sensitivity Test Results for the 2041-42 Loan Year

Assumptions		Scenario	Loans Issued	Increase	Average Growth Rate	Portfolio July	Increase	Net Cost	Increase
			($ million)	(%)	(%)	($ million)	(%)	($ million)	(%)
Base Scenario		Best-estimate	5,230	-	2.8	38,530	-	3,833	-
Sensitivity tests									
1 - Index the limit to inflation		High-cost	8,009	53.1	4.6	53,865	39.8	4,304	12.3
2 - Index Loan Limit and Grants to inflation		High-cost	7,701	47.3	4.4	51,630	34.0	5,435	41.8
3 - Index Student's Contribution to inflation		Low-cost	5,189	-0.8	2.8	38,145	-1.0	3,825	-0.2
4a - Real Wage	-50 bps	Low-cost	5,256	0.5	2.8	38,800	0.7	3,787	-1.2
4b - Real Wage	+50 bps	High-cost	5,194	-0.7	2.8	38,222	-0.8	3,883	1.3
5a - Inflation	-100 bps	Low-cost	5,039	-3.7	2.6	36,488	-5.3	3,427	-10.6
5b - Inflation	+100 bps	High-cost	5,284	1.0	2.8	40,071	4.0	4,266	11.3
6a - Enrolment Rate	-8%	Low-cost	5,020	-4.0	2.6	36,989	-4.0	3,707	-3.3
6b - Enrolment Rate	+8%	High-cost	5,439	4.0	3.0	40,071	4.0	3,959	3.3
7a - Tuition	CPI	Low-cost	4,943	-5.5	2.6	36,604	-5.0	3,756	-2.0
7b - Tuition	CPI + 4%	High-cost	5,312	1.6	2.9	39,840	3.4	3,879	1.2
8a - Interest Rates	-200 bps	Low-cost	5,230	-	2.8	37,721	-2.1	3,339	-12.9
8b - Interest Rates	+200 bps	High-cost	5,230	-	2.8	39,339	2.1	4,335	13.1
9a - RAP-Stage 1 Entrance Rates	-30%	Low-cost	5,230	-	2.8	37,605	-2.4	3,645	-4.9
9b - RAP-Stage 1 Entrance Rates	+30%	High-cost	5,230	-	2.8	39,339	2.1	4,025	5.0
10b - Net Default Rate	down to 6.8%	Low-cost	5,230	-	2.8	37,836	-1.8	3,592	-6.3
10a - Net Default Rate	up to 11.3%	High-cost	5,230	-	2.8	39,224	1.8	4,109	7.2
11a - Student Interest Rate Spread	350 bps	Low-cost	5,230	-	2.8	38,954	1.1	3,561	-7.1
11b - Student Interest Rate Spread	150 bps	High-cost	5,230	-	2.8	38,106	-1.1	4,094	6.8

Appendix 6 – Concessionary Terms

Section PS3050 (Loans Receivable) of the Public Sector Accounting Standards of the Chartered Professional Accountants Canada states that loans with significant concessionary terms should be accounted for based on the substance of the transaction. The Directive on Accounting Standards (GC 3050 Loans Receivable) in effect at the valuation date specifies that only loans with a concessionary portion greater than 25 per cent of the face value of the loan shall be considered as having significant concessionary terms. As mentioned in Appendix 1 of this report, Canada Student Loans are currently not considered as having significant concessionary terms according to the Directive on Accounting Standards. The following items could have an impact on the determination of the value of concessionary terms:

- The Consolidated Revenue Fund (CRF) lending rate, which is used as the discount rate in determining the present value of the loans. In May 2018, this rate corresponds to 2.38% for a term to maturity of 10 years. The higher the CRF lending rate, the more likely it is to have significant concessionary terms;
- The student interest rate during the in repayment period. Interests start to accrue at the end of the study period. The student interest rate is much higher than the CRF lending rate and is expected to remain higher in the future. The lower the student interest rate, the more likely it is to have significant concessionary terms;
- The length of the interest free period (in-study period, generally around three years), which is the portion considered as concessionary terms. The longer this period, the more likely it is to have significant concessionary terms;
- The length of the amortization period (in repayment period), which is used to determine the present value of the loans. The shorter this period, the more likely it is to have significant concessionary terms.

Based on the above mentioned items, the student interest rate accruing during a standard ten-year repayment period offsets the three-year interest free period, resulting in no significant concessionary terms. Significant changes to these four items were tested individually. It appears that loans would not be considered as having significant concessionary terms even in the unlikely situations where:

- The CRF lending rate used as discount rate would double; or
- The student interest rate during the in repayment period would reduce to half the actual rate; or
- The in-study interest free period would increase from the three-year period generally observed to 10 years; or
- The loans would be repaid within the 6-month period following the end of study.

Appendix 7 – Acknowledgements

We would like to thank the staff of the Canada Student Loans Directorate of Employment and Social Development Canada who 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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