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Economic Impact of International
Education in Canada
– An update
Final Report

Presented to:
Global Affairs Canada

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Executive Summary

Existing literature clearly indicates that there is positive value associated with international students coming and studying in Canada. Roslyn Kunin and Associates (RKA) was commissioned by the Department of Foreign Affairs, Trade and Development Canada (currently Global Affairs Canada) to conduct this study to assess the economic impact of international students studying in Canada in 2014 on the Canadian economy. The current study updates the 2012 study of the same purpose with more recent data and an improved estimation approach.

The economic benefit of international students studying in Canada is substantial. We estimate that in 2014, international students in Canada spent around \$11.4 billion on tuition, accommodation, and discretionary spending.

The results of the study are summarized below.

- After accounting for the Canadian scholarships and bursaries, total annual expenditure of international students including their visiting families and friends, contributed almost \$11.4 billion to economic activities in Canada in 2014. This translates to \$9.3 billion in GDP contribution to the Canadian economy.

This \$9.3 billion figure includes \$6.7 billion contribution to GDP in direct value-added associated with tuition, food, and accommodation, and \$2.6 billion in indirect value-added associated with firms supplying goods and services to the education services and other sectors.

- The amount of overall annual spending by international students translates to 122,700 jobs (equivalent to 104,100 FTE) supported in the Canadian economy.
- Because international student expenditure represents revenue for goods and services from overseas, this representation of international education services is an export from Canada. Canada's international education services (\$11.4 billion) amount to 11% of Canada's total service exports to the world, are equivalent to 2.2% of Canada's total merchandise exports. The top 10 source countries accounted for \$8.4 billion international student spending, which translates to 13% of the total export of services, or 1.9% of the total merchandise exports to these countries from Canada.¹

¹ It is noted that Statistics Canada reports that the export value of Canada's education related travel services was \$4.971 billion in 2014. The analysis in this report builds on this number by exploring and adding other areas of export revenues, such as inclusion of K-12 students and Languages Canada short term students.

- Ontario, with the largest number of students, shows largest contribution to GDP at \$4.4 billion (47.3% of \$9.3 billion), followed by BC with 23.4%, and Quebec with 14.1%.
- Of the annual total spending by international students, long-term international students accounted for 92%. International education services for these long-term students contributed \$8.6 billion worth of GDP of the Canadian economy, and supported 113,100 (equivalent to 95,900 FTE) jobs in the labour market.
- International students in short-term language training programs in Canada contributed an additional \$919.4 million per year in total spending to the Canadian economy. This represents about \$697.8 million contribution to GDP, and supporting 8,100 jobs (or equivalent to 5,900 FTE jobs).
- Using a total impact approach (including direct, indirect, and induced impacts) to account for the \$11.4 billion international students spending, we estimate a much higher contribution of around \$12 billion to Canada's GDP, and support for around 152,700 jobs.
- **Sensitivity analysis** provides the upper and lower bands of economic impacts resulting from different levels of student spending.
- Sensitivity analysis with respect to 10% higher student expenditure: a 10% increase in spending by international students in 2014 translates into \$12.5 billion student expenditure, \$10.2 billion contribution to GDP, and support for 134,950 jobs.
- Sensitivity analysis with respect to 14% lower student expenditure: This scenario looks at a decrease of 14% in spending by the international students in Canada as a result of a much higher value for the scholarships and bursaries offered by the governments and institutions in Canada, as well as a much lower value for spending by visiting family and friends.

A decrease in total student expenditure to \$9.8 billion brings down the GDP contribution of \$8.1 billion, and the number of jobs supported in the range of 106,000.

Key results of the study are summarized in the following tables.

Summary Table I Number of International Students and Total Annual Spending in Canada, by Province and Territory

	All Students	Total Annual Spending (\$millions)
Newfoundland and Labrador	2,261	\$48.2
Prince Edward Island	1,356	\$37.5
Nova Scotia	11,892	\$324.5
New Brunswick	4,154	\$115.7
Quebec	55,369	\$1,516.6
Ontario	187,589	\$5,408.1
Manitoba	8,385	\$220.8
Saskatchewan	6,408	\$151.0
Alberta	23,227	\$567.7
British Columbia	137,446	\$2,980.6
Yukon	29	\$0.5
Northwest Territories	35	\$0.6
Nunavut	4	\$0.0
Canada²	438,157	\$11,371.9

² Total number of students includes 330,706 “long-term” and 107,451 “short-term” students. It is noted that total number of long-term students reported here does not correspond to the figure reported in IRCC’s website pertaining to the number of international students with a valid permit on December 31st, 2014 (336,000), as we have made a number of adjustments to arrive at these values.

**Summary Table II Direct and Indirect Economic Impact of All International Students in
Canada, by Province and Territory
(\$million)**

	Output	GDP at basic price	Labour Income	Employment (jobs)
Newfoundland and Labrador	\$71.1	\$43.5	\$22.3	511
Prince Edward Island	\$44.4	\$26.4	\$15.8	389
Nova Scotia	\$396.8	\$241.8	\$142.0	3,328
New Brunswick	\$180.1	\$97.9	\$55.5	1,130
Quebec	\$2,301.3	\$1,312.0	\$797.9	19,704
Ontario	\$7,075.2	\$4,410.8	\$2,625.8	54,286
Manitoba	\$324.9	\$190.9	\$110.6	2,575
Saskatchewan	\$250.3	\$136.5	\$71.3	1,624
Alberta	\$1,192.0	\$670.5	\$386.4	7,173
British Columbia	\$3,362.3	\$2,180.5	\$1,353.4	31,718
Yukon	\$2.3	\$1.3	\$0.8	18
Northwest Territories	\$6.1	\$3.2	\$1.1	17
Nunavut	\$1.4	\$0.9	\$0.4	6
Canada	\$15,208.3	\$9,315.6	\$5,583.4	122,680

Summary Table III Economic Impacts of Annual Total Spending of All International Students in Canada

	Direct	Direct and Indirect	Direct, indirect & Induced
Output	\$10.283bn	\$15.208bn	\$19.773bn
GDP	\$6.742bn	\$9.316bn	\$11.998bn
Labour Income	\$4.011bn	\$5.583bn	\$6.848bn
Jobs - FTE	74,500	104,100	129,400
Jobs (incl. f/t, p/t, temporary)	89,900	122,700	152,700
Tax Revenue	n/a	\$2.1bn	\$2.9bn

Sensitivity Analysis
(Direct and Indirect Impacts)

	14% Lower Expenditure	Base Case	10% Higher Expenditure
Student Spending	\$9.8bn	\$11.4bn	\$12.5bn
GDP Contribution	\$8.1bn	\$9.3bn	\$10.2bn
Jobs (incl. f/t, p/t, temporary)	106,000	122,700	134,950
Tax Revenue	\$1.8bn	\$2.1bn	\$2.3bn

Summary Table IV Comparison of Total Annual Spending of International Students with Canada's Service and Merchandise Exports

Total Annual Spending – All International Students	\$11.372 billion	Students from Top Ten Source Countries	\$8.429 billion
Canada's Export in Services	\$95.744 billion	To Top Ten Source Countries	\$62.652 billion
International Student Spending as % of All Export in Services	11%	Students from Top Ten Source Countries	13%
Canada's Export in Merchandise	\$525.0 billion	To Top Ten Source Countries	\$453.424 billion
International Student Spending as % of All Export in Merchandise	2.2%	Students from Top Ten Source Countries	1.9%

1. Introduction

International education, owing to its impact on Canada's ability to develop and retain the necessary knowledge and skills, plays an important role in the globalization of its economy allowing it to thrive in a fast-changing and competitive environment.

The importance of international education to Canada's economic prosperity has been recognized through a national comprehensive International Education Strategy which encompasses:³

- Foreign students studying in Canada for any length of time;
- Canadians studying outside of Canada;
- Collaboration between educational and research institutes in Canada and abroad; and
- Sharing of Canada's education models with foreign countries and the online delivery of Canadian education around the world.

There are different aspects of international education that contribute to the benefits of Canada's economy. Roslyn Kunin and Associates (RKA) has been commissioned by Department of Foreign Affairs, Trade and Development Canada (currently Global Affairs Canada) to conduct this study to determine the value of the impact of international students studying in Canada to the Canadian economy by using the best available data and Statistics Canada's 2010 input output model. The current study builds on the 2012 study of the same purpose with more up-to-date information as well as refinements to the estimation approach.

The study covers the long term students at schools, colleges, and universities, as well as the short term students. For the number of long term international students (those pursuing education and training for periods longer than six months and requiring study permits), we rely on Immigration, Refugees and Citizenship Canada (IRCC) data. For the short term students (less than six months duration), we rely on Languages Canada's data. In order to calculate the student expenditures, we relied on data from the various sources including Statistics Canada's annual Tuition and Living Accommodation Costs survey. To fill in the gaps in data, we had to make several assumptions including those with respect to scholarships and bursaries provided by Canadian government (federal, provincial or territorial) or institutions as well as expenditures by the friends and families visiting international students, thus adjustments to the original sets of data. These adjustments are detailed in Appendix 1. We have

³ Source : <http://international.gc.ca/global-markets-marches-mondiaux/education/strategy-strategie.aspx?lang=eng>.

also carried out sensitivity analysis with respect to some key variables. This is presented in Appendix 2 and 3.

To capture the overall impact of international education services on the Canadian economy, we have used Statistics Canada's inter-provincial expenditure impact model. In this study, we have not only quantified direct economic impact associated with international student spending, but have taken a total impact approach to quantify direct, indirect, and induced impacts. These include quantifying activities of businesses providing goods and services to entities where direct expenditures occur (thus including direct + indirect impacts). In addition, as a result of increased local household income, there may be further increases in overall expenditure. This is considered a spun-off (or induced) impact. Total impact includes all three – direct, indirect, and induced impacts of an initial spending. The total impact can be considered the upper band of economic impacts, whereas the sum of direct and indirect impacts provides relatively conservative level of impacts on the economy. In this study, we are taking a conservative approach and focussing on the direct and indirect impacts.

The layout of the report is as follows:

- Overview of recent trends in international student mobility and economic impact
- Data and methodology
 - International student data
 - Expenditure data
 - Additional “tourism activities”
- Economic impact assessment
 - Direct economic impact
 - Direct plus indirect economic impact
 - Total (direct, indirect, and induced) impact
 - Government tax revenue
 - International students and Canada's export
- Conclusions and recommendations

While the study essentially follows the same methodological approach as the earlier reports prepared in 2009 and 2012 by Roslyn Kunin and Associates, comparisons with previous modelled expenditure results would not be appropriate, as there are differences in the data sources, assumptions, as well as the model specification, in addition to the use of more recent data.

2. Recent Trends in International Student Mobility and Economic Impact

Definition

International students are those who have crossed borders for the purposes of study. For this study, we have followed the definition of international student by the UNESCO Institute for Statistics, the OECD and Eurostat. They define “internationally mobile students” as ⁴

“... students who have physically crossed an international border between two countries with the objective to participate in educational activities in the country of destination, where the country of destination of a given student is different from their country of origin”

Therefore, these are students who are not residents of their country of study (inbound international students) or those who received their prior education in another country (outbound international students).⁵

The country of origin can be defined in several different ways (e.g. based on usual residence, citizenship or the country in which specific educational qualifications have been obtained). UNESCO, OECD and Eurostat have agreed that for measuring international mobility in education, the *preferred* definition should be based on students’ education prior to entering tertiary education. Where countries are unable to report data according to this definition, they can use the country of usual or permanent residence to determine students’ country of origin. Where this too is not possible and no other suitable measure exists, students’ country of citizenship can be used as a last resort.

Foreign students are defined according to their citizenship. In Canada, if a student studying in a Canadian university or college does not have Canadian citizenship, the person is a foreign student. However, this person may not fit the definition of an *international student* as we described above.

In principle, our current study adopts the measurement of international students based on their mobility, but has included, in addition to those pursuing formal tertiary education, other students who have crossed the border to pursue formal education in Canada’s elementary and secondary schools, as well as those in short-term credit courses.

Existing literature and RKA’s own previous research has indicated that enrolment of international students have been rising over the past two decades, in different

⁴ <http://www.uis.unesco.org/Education/Pages/international-student-flow-viz.aspx>.

⁵ http://www.oecd-ilibrary.org/sites/sti_scoreboard-2011-en/03/05/index.html?itemId=/content/chapter/sti_scoreboard-2011-26-en.

countries including the U.S., the U.K., Australia, Germany, and France. The number of international students studying in Canada almost doubled from 168,600 in 2004 to 336,500 in 2014.⁶ Since the majority of international students fund their study and stay in a foreign country out of their families' resource and/or with home government/institutional support, as opposed to dependent upon financial resources from the host countries, there are substantial net financial benefits to the host countries.

Existing literature has also shown that the impact of international education goes beyond mere financial benefits to the host countries. By providing international education services, universities and other educational institutions are "internationalizing" their curriculum, bringing in an international perspective and global approaches. International research collaboration, in the form of establishing valuable partnerships and joint ventures with entities in other countries will benefit both the parties engaged in research and economic development as well. Most importantly, international education is helping to create more globally competitive graduates.⁷

Mobility of International Students

Canadian governments, both federal and provincial, and institutions, continue to recognize the importance of international education in making our economy more prosperous, innovative, and competitive. However, Canada is still a small player in the global market for international students. In this section we discuss the trends and developments occurring in international education services.

It should be noted the trends and developments discussed in this section apply to those in the post-secondary education category, as, globally, little literature exists pertaining to student movement in the elementary and secondary school system.

Globally, the number of international students continues to increase, a rebound from the slowdown due to the 2008 global financial crisis. U.S. and the U.K. take in about one-third of all "internationally mobile students". Of the four major English-speaking international student destinations, international student enrollment increased 42% between 2008 and 2014 in the U.S.⁸ Enrollments have been declining in the U.K. since 2012 due mainly to the introduction of stringent visa policies. Meanwhile Australian enrollments have started to rebound after a significant decline beginning in 2010, and Canadian enrollments are continuing a steady decade-long upward trend.

Data from the United Nations Educational, Scientific and Cultural Organization's (UNESCO) Institute for Statistics (UIS) indicate the top ten host countries for inbound international students (in formal tertiary education only) are:

⁶ Based on data from Immigration, Refugees and Citizenship Canada (IRCC). See "Facts and Figures – Immigration Overview: Temporary Residents".

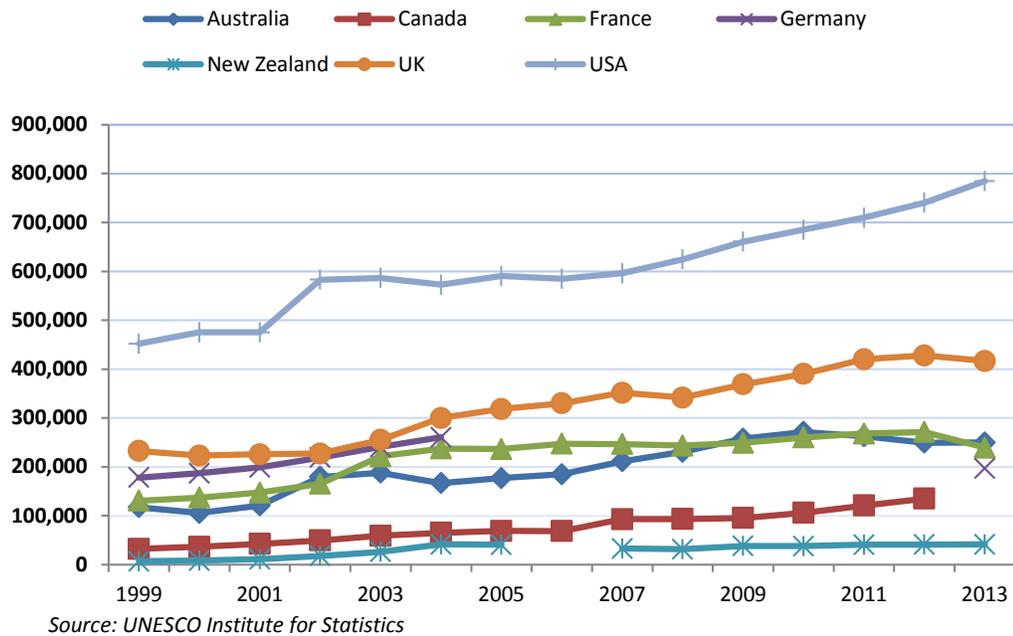
⁷ World Education Services (WES), 2015. "International Student Mobility Trends 2015: An Economic Perspective".

⁸ Institute of International Education.

- ❖ United States (19% of total mobile students)
- ❖ United Kingdom (10%)
- ❖ Australia (6%)
- ❖ France (6%)
- ❖ Germany (5%)
- ❖ Russian Federation (3%)
- ❖ Japan (3%)
- ❖ Canada (3%)
- ❖ China (2%)
- ❖ Italy (2%)

Figure 1 below further illustrates the trend in the number of international students in selected number of host countries, using data from this source.

Figure 1 Total Inbound Internationally Mobile Students, by Selected Host Countries,⁹ 2013 (formal tertiary education students only)



Factors Driving Increase in International Students

An examination of economic trends related to source countries of international students reveals that since 2000, economies – those with a gross national income (GNI) per capita between USD \$4,126 to \$12,745 – are the ones driving

⁹ Data extracted from <http://data.uis.unesco.org/>, in March 2016, by selecting data in Education: International student mobility in tertiary education.

growth in outbound student mobility.¹⁰ The total number of outbound international students from these economies jumped 161% between 2000 and 2012, as compared to only 29% from high-income OECD countries. Since 2006, the growth of students from high-income non-OECD countries such as Russia, Saudi Arabia, Singapore and the United Arab Emirates has largely been driven by government scholarship initiatives such as the King Abdullah Scholarship Program and Brazil Scientific Mobility Program.¹¹

Economic Impact

All major international student host countries in North America and Western Europe, as well as Australia and New Zealand, have conducted research to analyze the change in student enrollment and the economic benefits brought by these students to the host countries.

U.S. research on international education indicates that strong consumer demand and partnerships with foreign governments and foreign universities are currently the main drivers of its international enrollment growth.¹² According to the latest Institute of International Education (IIE) *Open Doors* data, international students in higher education brought in US\$27 billion to the U.S. economy in 2014.

The most recently available study from the **U.K.** (published in 2014) evaluated the contribution of post-secondary international education using data for 2011/12 academic year.¹³ Non-U.K. students directly contributed £10.71 billion to U.K.'s export.

It is noted that the academic year was the year immediately prior to the introduction of the 2012 higher education reforms and the consequent increase in privately paid tuition fees in England and the prospective opening up of the sector to some for-profit providers. Other U.K.-wide political developments have impacted on higher education as well, with increased regulation of the international student market. Tighter government restrictions on the recruitment of international students have become an increasing challenge for universities to manage. Based on research mentioned earlier, it appears that international student enrollment in the U.K. has indeed declined since 2012.

Australia is the third most popular destination for international students, attracting nearly seven per cent of the world's international students.¹⁴ Export of international education services (including post-secondary and other non-post-secondary enrollments) is considered the fourth largest export from Australia. Over the past decade, demand for higher education exports has outpaced Australia's overall export demand by some margin. Whereas total export demand about doubled in the last decade, higher education exports grew by 133%.

¹⁰ These include countries such as China, Brazil, and Turkey.

¹¹ World Education Services.

¹² World Education Services.

¹³ Universities UK, 2014. "The Impact of Universities on the UK economy".

¹⁴ Group of Eight Australia. Policy Note: International students in higher education and their role in the Australian economy.

Notably, from around 2010 demand began to soften due to the global economic environment, the rise of the Australian dollar, regulatory constraints and other issues. The most recent data, however, are suggesting that the market is recovering.

The Australia Council of Private Education and Training (ACPET) report in 2013 estimated that international students contributed Australian \$15.4 billion to the Australian economy.

The report by Infometrics and the National Research Bureau in 2013 for Education **New Zealand**, estimated that the gross output of the international education industry was valued at \$2.6 billion in a year.¹⁵

In **France**, Campus France, the French Agency for the promotion of higher education, international student services, and international mobility, produced a report on estimating the financial benefits of international students in France in 2014. While the report estimates that international students cost the state around 3 billion euros, these students contribute 4.65 billion euros to the French economy.¹⁶

In **Germany**, the German Academic Exchange Service commissioned a study in 2013 to estimate the impact of internationally mobile students on host countries.¹⁷ The study found that during their stay in Germany, these students contributed 1.28 billion euros in a year to the economy. It is noted that such benefits to the host country were due to students' living expenses incurred only, as the costs of provision of higher education in these countries were borne by the States.

The German study cited went beyond evaluating the impact as a result of student expenditure on the host countries. It further evaluated the long term economic impact of these international students in terms of their contribution by remaining in the host country and gaining meaningful employment.

International students have become integral to the financial health of the top international education providing countries, but the impact goes beyond money spent on tuition fees and living expenses, as illustrated in the German study cited above. In addition, U.S. research has indicated that international students are also helping to fill skills shortages. A World Education Services (WES) study in 2014 indicated that international students are a vital source of enrollments for STEM (science, technology, engineering and mathematics) fields. In 2013 more than one in three international students in the U.S. was enrolled in a STEM field. In Canada, RKA's own previous research also indicates that international student

¹⁵ Infometrics, NRB 2013. The Economic Impact of International Education 2012/13, for Education New Zealand.

¹⁶ Campus France 2014. Beyond Influence: the Economic Impact of International Students in France.

¹⁷ German Academic Exchange Service, 2013. The Financial Impact of Cross-border Student Mobility on the Economy of the Host Country. The countries analyzed in the study include Germany, the Netherlands, Austria, Poland, Switzerland, and Spain.

enrollment in the STEM field grew much faster than their domestic Canadian students.

Approaches and Methodology

All major players in the international education market undertake their own research and analysis to capture the economic benefits on the economy of the host country and here we provide a description of the approaches and methodologies adopted by some of these players.

U.S.

In the U.S., research has been conducted to estimate the benefits of international students in higher education. National Association of Foreign Student Advisers (NAFSA) defines economic benefit as the “amount of money that international students studying at U.S. colleges and universities collectively bring into the United States to pay for their education and to support themselves while they (and in some cases, their families) are here in the United States”.

There are two main outputs from this analysis: Part (1): Estimate of Economic Benefit, which is the overall imported dollars from international students without any multiplier effect; and Part (2): Estimate of Jobs Created/Supported, which is both the direct and indirect (i.e. multiplier) of jobs created and supported via the import dollars from international students studying in the United States.

To capture Part I, researchers determine the costs associated with U.S. higher education along with living expenses, minus any U.S.-based monetary resources that an international student may receive. The goal of Part II is to determine the appropriate direct and indirect (multiplier effect) number of U.S. jobs created and/or supported, based upon the above estimate of economic benefit of direct import dollars from international students studying at U.S. institutions of higher education.

The U.S. Bureau of Economic Analysis (BEA) provides datasets for calculating the multiplier effect of jobs created and/or supported by trade. These datasets, known as RIMS II, are specific to industries at the state level. The specific industry datasets used in this analysis include datasets for education, accommodations, food services and drinking places, retail trade, telecommunications, transit and ground passenger transportation, and insurance carriers.

U.K.

U.K. research in this regard is similar to the U.S. one in that efforts are concentrated on measuring economic benefits brought by higher education. The most recent study, conducted for academic year 2011/12, estimated economic benefits in the country’s higher education on the U.K. economy that can be readily measured, but did not include any assessment of the value of the sector’s collaboration with business or the impact of new ideas generated by universities or their graduates.

In estimating direct impact, the study separates the impact as: I – direct and indirect university income, expenditure and employment; and II – direct and indirect expenditure of non-U.K. students and visitors.

The higher education institutions included in the study are universities and colleges included all of the 'not-for-profit' enterprises which receive core funding from the public purse through the higher education funding bodies. Modelled estimates were also made of the impact of the off-campus expenditure of international (i.e. all non-U.K.) visitors attracted to the U.K. by the universities and colleges. The model used was a purpose designed and specially constructed 'type II' input-output model based on actual U.K. data derived from the Office for National Statistics' input-output tables together with data from its *Blue Book*.

Data used came from Higher Education Statistics Agency's university finance, staffing and student statistics (for the estimates in part I) and *Travel trends* (Office for National Statistics) and the *Student Income and Expenditure Survey* published by the Department for Business, Innovation and Skills (BIS) (for the estimates in part II).

Germany

The most recent study on this topic, by Prognos AG for Germany Academic Exchange Services (DAAD) in 2013, took a more comprehensive approach, both in the short term (during students' actual stay) and long term (following students' completion of study), in evaluating the economic benefits of international student mobility. However the study only focused on international students pursuing a bachelor's or master's degree in the host countries.

In terms of its methodology, the effects during the actual study period and effects following graduation were separately evaluated.

Effects during actual period of studies:

On the income side, the economies of host countries benefit in the short term from the effects (value creation and employment) triggered by student spending. These effects are calculated on the basis of an input-output model. The input-output calculation flows into the national accounts. It reflects the relationships of goods and production within the economy as well as between other economies, and is therefore useful for calculating the effects induced by consumer demand. The effects of tax revenues at the level of state authorities are calculated on the basis of internationally comparable tax tables.

Effects following graduation:

The direct effects caused when students remain in a host country after graduation are twofold. On the one hand, there are the direct effects of value creation resulting from gainful employment on the part of the students concerned: this is calculated on the basis of country-typical productivity. On the other hand, there are the revenues accruing to the state authorities through taxation on the income of the graduates. This is assessed on the basis of internationally comparable tax tables. As in the case of international students, the effects

triggered by the consumer spending of international graduates are modeled on input-output calculations.

France

The most recent study by Campus France in 2014 was based on a survey conducted to capture international students in France. It generated an estimate of the number of students by length of study, country of origin, and average spending (including tuition and fees, and living expenses). In addition, expenses incurred by visiting family members and friends were also captured. The economic benefits calculated for these students were compared with direct and indirect financial support these students received during their stay in France (government scholarships, and students' own employment earnings).

Even with the cost of public financial aids, the study concluded that there is net benefit for France to attract international students.

Australia

The Australian research, the ACPET report in 2013, captures impact generated by international students in higher education, as well as those in the Vocational Education and Training (VET) and English Language Intensive Courses for Overseas Students (ELICOS) programs, and schools. Economic contribution was based on student spending as well as spending of their visiting friends and relatives. These benefit values are also converted to contribution to the country's value-added (GDP) and employment.

New Zealand

The most recent study from New Zealand, by Infometrics, National Research Bureau (NRB) for Education New Zealand used an approach fairly similar to the studies conducted in Canada, except that the analysis is broader in evaluating the size and activities of the offshore institutions from New Zealand offering education services outside of the country.

The four main sources of information/data for the study include:

1. Ministry of Education data on the number of international students and their tuition fees.
2. A web-based survey of expenditure by students on living costs.
3. An email survey, with some personal interviews of educational providers who provide goods or services offshore.
4. Economic multipliers

After adjusting for the import content of spending, earnings by students while in New Zealand, and the purchase of second hand goods, it is possible to obtain an estimate of the contribution of the international education industry to New Zealand's Gross Domestic product (GDP).

One advantage of the New Zealand study appears to be the underlying survey of student living expenditure conducted. Expenditure on living costs is measured

over the number of months, up to and within the previous 12 months that the student has been in New Zealand. It is obtained from a large web-based survey of international students. Invitations to participate in the survey were sent to all usable email addresses provided by Immigration New Zealand. Consequently there was no sampling required. The results were based on approximately 7,500 responses received.

3. Data Sources and Methodology

RKA's methodology for the study on the economic impact of international education in Canada includes extensive secondary research involving literature review, collecting existing statistical data and information, as well as consulting with provincial and territorial education sector representatives, and representatives from organizations promoting and researching trends in international education in Canada and/or provinces.

In this section, we will describe the different sources of data that are available, the ones we use for the project, and any limitation with the data sets. We will also point out the differences in data sources and methodology between our estimates and those adopted by Statistics Canada in its estimate of Canada's trade in international education services.

Data Sources

Enrollment

One of the main purposes of this study is to determine the overall economic impacts of international education which requires the understanding of the number of international students in each province and territory and in different levels of study – public or private, in the K-12 system, at the college level as well as under-graduate and graduate students in the university system. It is also necessary to determine the number of international students studying in professional and language training programs.

We have not found one complete set of data that fits our definition of *international students* or reported data on all students. Statistics Canada, in its Post-Secondary Information System, collects data on international student enrollment at the college and university levels (including breakdown of undergraduate and graduate levels) by field of study or by program level. However, the colleges and universities that are covered in the Statistics Canada survey are essentially all in the public system and thus data does not yield information on those international students in the private post-secondary system.

On the number of international students in the K-12 system, no data is readily available from Statistics Canada for each of the provinces and territories, or from each provincial or territorial ministry of education.

As described in the Introduction section, where no consistent data is available for international students, the alternative is to use data on foreign students available from Immigration, Refugees and Citizenship Canada (IRCC). As international students need to obtain a study permit before arriving in Canada to pursue education and training for a period longer than six months, IRCC's data allows us to know how many holders of study permits are in each of the provinces and territories at a given time.

IRCC defines foreign students as

“Temporary residents who entered Canada mainly to study and have been issued a study permit (with or without other types of permits). A study permit is an official document issued by an officer that allows someone who is not a Canadian citizen or a permanent resident to study in Canada. In general, a study permit is not needed for any program of study that is six months or less. For statistical purposes, a temporary resident is designated as a foreign student on the basis of IRCC’s determination of his or her “yearly status” – the main reason for which the person has been authorized to enter and stay temporarily in Canada during the year of observation. Foreign students exclude temporary residents who have been issued a study permit but who entered Canada mainly for reasons other than study.”

Five levels of study are shown for foreign students.

- a. Secondary or less: includes equivalent of High school/Secondary, elementary – grade, CEGEP.
- b. Post-Secondary: which is further divided into
 - College Education
 - University Education
 - Unspecified Post-Secondary - the level of study in this case was not mentioned
- c. Quebec Programs: – this includes PTC/TCST/DVS/AVS (Pre-work Training Certificates/Training Certificate for a Semi-skilled Trade/Diploma of Vocational Studies/Attestation of Vocational Specialization.
- d. Residents and Interns: -- unique to medical profession.
- e. Other Studies: these set of data could not be defined based on the available data. Other Studies, amongst other levels, could include the spouses and children of international students should they also hold a study permit themselves.

The IRCC data therefore allows us to use the number of study permit holders as a proxy for the number of international students at a given time in a year. It also allows for distinction between broad levels of study. For all these reasons, we have relied upon IRCC’s data for analytical purposes.

One limitation of using the IRCC’s data set to represent the number of international students is that the actual number of permit holders registering in a Canadian institution may be smaller than the number of permits issued, due to the fact that some permit holders may not be able to, or have chosen not to, enroll in an education program. Another limitation of this data set is that since the term “foreign students” is defined by citizenship, it also includes permit

holders who are children or spouses of attending students, but these are not considered fee-paying international students for the purposes of our analysis.¹⁸

Finally, another important source of international students that is not fully covered in the IRCC data is the number of such students who study in Canada for periods shorter than six months, as they do not require a study permit to enter the country. We have approached organizations whose members are in the business of providing short-term vocational training to the public. It is noted, however, that only Languages Canada collects comprehensive data that is useful for our purposes.

Languages Canada is Canada's premier language organization representing its two official languages, English and French. Membership is limited to schools which meet the rigorous standards of the association and who are committed to upholding them. Currently there are over 165 member programs across the country, including universities, colleges, and private institutions. The association is not-for-profit and sector driven. Quality assurance is a critical element of Languages Canada and all member schools are required to be accredited under one internationally recognized and comprehensive scheme.

In the rest of the report, we define international students as those from these two sets of data available to us, with adjustments. Long-term students refer to the ones that are represented by the IRCC data, while short-term students refer to the ones that are students pursuing language training programs of shorter than six-month duration in institutions with Languages Canada membership.

Detailed adjustments to the IRCC data and the data from Languages Canada are presented in Appendix 1.

Student Expenditure

For students in each level of study, we have estimated expenditure in the following categories:

- Tuition and fees,
- Additional compulsory fees,
- Books and other study tools/materials
- Living expense,
- Cost of transportation,
- Discretionary expenditure

¹⁸ It should be noted that there are still some “non-fee-paying” students who have not been adjusted for fully due to lack of data. For example, no adjustments have been made for cases where an agreement Quebec has made with respect to international students with French citizenship (in Quebec, an international student can even pay domestic fee if he/she is studying French language, literature, culture etc. at the degree level), or with respect to exchange students in all provinces (they don't pay international fees as they pay tuition to their own institution back home).

In order to calculate net economic benefits brought by international students in the host country, we have taken into account any financial assistance to international students from the Canadian governments as well as universities or other institutions.

Again, the detailed description of adjustments can be found in Appendix 1.

Additional Visiting Family and Friends “Tourist” Activities

Existing literature on international education points to another area of university activity, which concerns the important role that institutions can play in attracting visitors to the host country.¹⁹

In this study, we estimate the number of family and friends of international students visiting Canada based on assumptions used in the 2013 Australian ACPET study on economic benefits of international students brought to the country.

Analytical Framework

To capture the overall impact of international educational services on the Canadian economy, expenditures of international students and their visiting family and friends are applied to the Statistics Canada inter-provincial impact simulation model.²⁰ The model provides estimates of the overall impact on output, Gross Domestic Products (GDP), and employment in each provincial / territorial economy.

A short description of the input-output model is provided here.

An Input-Output Structure of the Economy

When a person spends on a product (goods and/or services), that amount of expense creates a direct requirement for the production of that product. The economic impact, however, does not end there. The increased production of this product leads to increased production of all the intermediate goods and services that are used to make this product, and the increased production of intermediate goods and services will in turn generate more demand for other goods and services that are used to produce these intermediate products. As demand rises, workers are able to earn a higher wage, and they sometimes decide to spend a portion of their extra earnings to purchase more goods and services.

As such, an initial demand for a product creates a chain effect down the production process.

¹⁹ Some studies include not only leisure visitors such as the family and friends of international students visiting the host country but also international conference business and international academic business visitors.

²⁰ Statistics Canada catalogue product 15F0009X – Input-Output Model Simulations (Interprovincial Model).

An economic impact analysis is designed to study such inter-linkage between industries in order to evaluate how a change in an initial demand for goods or services contributes to changes in other industries' levels of production and overall economic activity level within a region.

The input-output model is based on the input-output structure of the Canadian economy,²¹ which is essentially a set of tables describing the flows of goods and services amongst the various sectors of the economy. Such a model is useful in determining how much additional production is generated by a change in the demand for one or more products or by a change in the output of an industry.

Beyond the direct expenditures, input-output models can be utilized to analyze additional benefits to the economy. This includes businesses providing goods and services to entities where direct expenditures occur. In addition, as a result of increased local household income, there may be further increases in overall expenditure. The latter is considered as a spun-off (or induced) impact, which is sometimes shown in economic impact studies.

Currently, Statistics Canada uses the 2010 inter-provincial input-output model to estimate the economic impact, and the results are used for comparative analysis purposes. It should be noted that employment impact estimates from this model are based on the 2010 total compensation per job.²² As such, it was necessary to deflate the net student expenditures incurred in 2014 to 2010 dollars to get a more accurate estimate of the employment impact.

²¹ Statistics Canada catalogue product 15F0042X – Provincial Input-Output Tables.

²² Data is derived from Statistics Canada CANSIM table 383-0030 – labour statistics by business sector industry and by non-commercial activities consistent with the industry accounts, provinces and territories.

4. Assessing the Economic Impact of International Students in Canada

The economic impact assessment of international education includes first collecting data and information on the number of international students by level of study, and on the type of student expenditure incurred. These values are adjusted where necessary to arrive at the amount of overall spending by international students on educational fees and living expenditure. Thereafter, these spending values are applied to Statistics Canada's expenditure model to generate estimates of international education's impact on Canada's gross output, GDP, employment, and tax revenues. In this section, we present the resulting estimates and analysis.

4.1. Overall Spending in 2014

In this sub-section, we combine estimated number of international students in Canada by level of study in each province and territory and estimates on educational and living costs to arrive at an estimation of total expenditure by international students while they study in Canada. All student numbers and expenditure values capture the impact in 2014.

Table 1 shows the total number of international students studying in Canada, with provincial and territorial distribution. The numbers have also been broken down to show students that are considered "long-term" and those who are considered "short-term".²³

²³ Detailed data pertaining to international students by level of study in each province/territory can be found in Appendix 4.

Table 1 Total Number of International Students in Canada, by Province and Territory, 2014

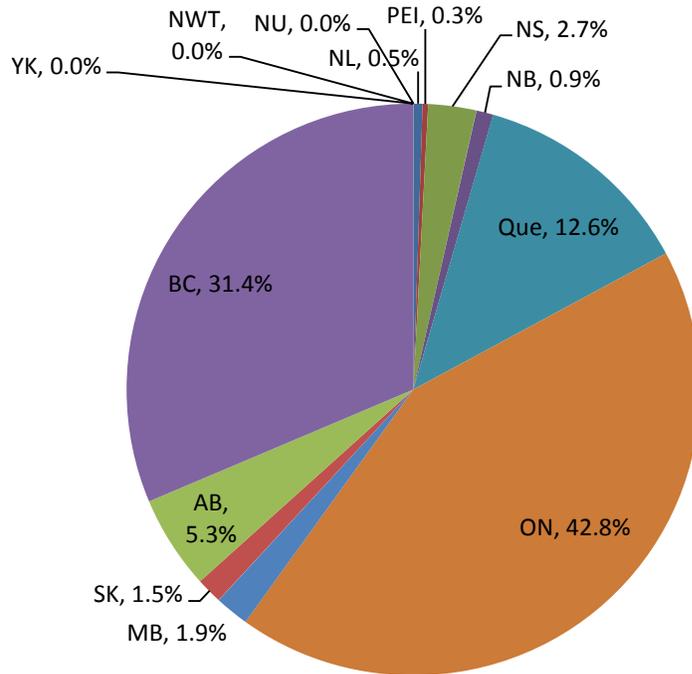
	Long Term Students	Short Term Students	All Students
Newfoundland and Labrador	2,261	0	2,261
Prince Edward Island	1,086	270	1,356
Nova Scotia	9,560	2,332	11,892
New Brunswick	4,053	101	4,154
Quebec	47,604	7,765	55,369
Ontario	141,366	46,223	187,589
Manitoba	7,794	591	8,385
Saskatchewan	4,904	1,504	6,408
Alberta	16,623	6,604	23,227
British Columbia	95,387	42,059	137,446
Yukon	29	0	29
Northwest Territories	35	0	35
Nunavut	4	0	4
Canada²⁴	330,706	107,451	438,157

Source: Immigration, Refugees and Citizenship Canada and Languages Canada, with adjustments by RKA

As can be seen in Figure 2 which shows the distribution of the total number of international students in Canada by province/territory, Ontario has the largest share of the international student population. The next province with the second largest share of international student population is BC, accounting for 31.4% of the total. When compared with BC's population share in Canada, its share in the international student service market is much higher. Quebec has the third largest market share in the international education market, accounting for 12.6% of the number of students.

²⁴ It is noted that total "of long-term students" reported here does not correspond to the figure reported in IRCC's website pertaining to the number of international students with a valid permit on December 31st, 2014, as we have made a number of adjustments to arrive at these values.

Figure 2 Distribution of the Total Number of International Students in Canada, by Province/Territory, 2014



Source: Data from IRCC and Languages Canada with adjustments by RKA

Table 2 shows the annual spending incurred by these international students, including the additional tourism activities associated with visiting family and friends.²⁵ The data sources and adjustment to raw data to derive estimates of international student expenditure are detailed in Appendix 1.

²⁵ Detailed data calculated for different types of student expenditure, for students in various levels of study, can be found in Appendix 4.

Table 2 Total Annual Expenditure of International Students in Canada, by Province and Territory, 2014 (\$millions)²⁶

	Long Term Students	Short Term Students	All Students
Newfoundland and Labrador	\$48.2	\$0.0	\$48.2
Prince Edward Island	\$36.4	\$1.1	\$37.5
Nova Scotia	\$299.0	\$25.5	\$324.5
New Brunswick	\$114.7	\$1.1	\$115.7
Quebec	\$1,455.9	\$60.7	\$1,516.6
Ontario	\$4,996.9	\$411.3	\$5,408.1
Manitoba	\$214.5	\$6.2	\$220.8
Saskatchewan	\$136.0	\$15.0	\$151.0
Alberta	\$502.6	\$65.2	\$567.7
British Columbia	\$2,647.2	\$333.4	\$2,980.6
Yukon	\$0.5	\$0.0	\$0.5
Northwest Territories	\$0.6	\$0.0	\$0.6
Nunavut	\$0.1	\$0.0	\$0.1
Canada	\$10,452.6	\$919.4	\$11,371.9

Source: detailed data sources as reported in Appendix 1, with adjustments by RKA

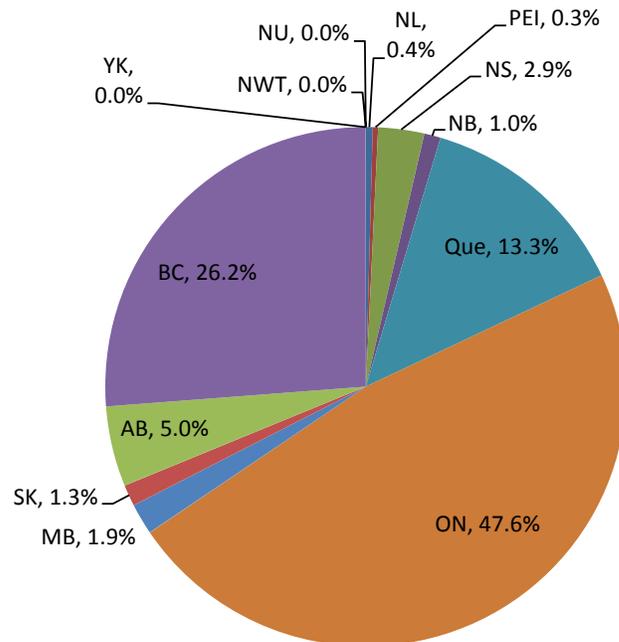
In total almost \$11.4 billion worth of expenditure was put into the Canadian economy in 2014 from international students across the country.

Figure 3 illustrates the distribution of the total international student expenditure in 2014 by province/territory. In comparison with Figure 2, Ontario again accounts for the largest share of total student expenditure of all provinces and territories in Canada, followed by BC. Data in this Figure also indicates that Ontario accounts for an even higher expenditure share than its student share, which is reflective of the tuition costs of those students studying in university programs.²⁷

²⁶ It is noted that there are no short-term international students reported in private Languages Canada membership schools in Newfoundland and Labrador or the three territories.

²⁷ For a comparison of tuition fees for university undergraduate and graduate programs in different provinces across Canada, see Tables [26](#) and [27](#) in Appendix 4.

Figure 3 Distribution of the Total International Student Expenditure in Canada, by Province/Territory, 2014



Source: various data sources detailed in Appendix 1 with adjustments by RKA

The number of students from China accounted for about a third of the total number of the long-term students. Students from the top three source countries (China, India and South Korea) in fact accounted for half of all long-term students.

Brazil and Japan are the two top countries for students studying in short-term language training programs in Canada. Students from the top ten source countries accounted for over 90% of all such students. Detailed information on source countries can be found in Appendix 4.

For long-term students, the average total expenditure per international student (including tuition fees, other fees, books, room and meal, transportation, and discretionary spending, but excluding spending from visiting family and friends) per year in Canada in different levels of study is presented below. This information can be derived from Tables 28 through 32, along with student numbers in Table 22 in Appendix 4.²⁸

²⁸ For example, for K-12 students of 46,566, combined student expenditure in Table 28 was \$1.064 billion. Average student expenditure is therefore \$22,865 per person in 2014.

- K-12: \$22,865
- College/Trade/Quebec Programs: \$33,105
- University/Other University/Residency & Internship: \$33,892
- Other Post-secondary: \$32,130
- Other: \$15,672
- All Levels of Study: \$31,171

For short-term students, average total expenditure per student week was \$832.

4.2. Economic Impact

As we pointed out in the methodology section, when a person spends on a product (goods and/or services), that amount of expense creates a direct requirement for the production of that product. The economic impact, however, does not end there. The increased production of this product leads to increased production of all the intermediate goods and services that are used to make this product, which in turn generates more demand for other goods and services that are used to produce these intermediate products. As demand rises, workers are able to earn a higher wage, and they sometimes decide to spend a portion of their extra earnings to purchase more goods and services. As such, an initial demand for a product creates a chain effect down the production process.

Although we present all three types of economic impact values associated with international students spending in this subsection, **it should be noted that the report focuses on the direct and indirect impacts as representing a complete picture of economic impacts.** It is generally acknowledged that direct impacts alone are incomplete and the total impact may sometime overestimate the impacts of initial spending. The three types of impacts are described briefly here.

- Direct impact measures the increase in industrial output and the increase in an industry's labour force from the inflow of international students and their spending on a yearly basis.
- Indirect impact measures the change in industrial output and employment demand in sectors that supply goods and services to those directly impacted sectors in the economy.
- Induced impact measures the changes in output and employment demand over all sectors of the economy as a result of an income increase in households impacted both directly and indirectly.

When we compare international education with other sectors in the economy, GDP, employment and export values are the key variables of interest. Other variables that may be of interest to readers include output, labour income and tax revenues. The results are presented for the aggregate of all international students, as well as the long term and short term students separately.

To produce these impact values, we used Statistics Canada's economic impacts simulation model to estimate international students' contribution to each

province's GDP and employment. Also reported are the values of output and labour income.²⁹

It should be noted that in previous studies on valuation of the economic impact of international student spending in Canada, Statistics Canada's output multipliers were used.³⁰ In this study, we used exogenous shock values on final consumption expenditures from Statistics Canada's Input-Output economic impact simulation model. This is in recognition of the fact that expenditures are measured at purchaser's prices (meaning they include margins such as transportation, wholesale, retail and taxes) whereas output is measured at basic prices. As well, expenditures may be supplied through imports. As such, all expenditures for goods and services must remove all taxes on products before an output multiplier can be applied.

The following sections present each type of impact (direct, combined direct and indirect, and total impact) first for the aggregate of all students, followed by the analysis for the long term, then short term students.

4.2.1. Direct Economic Impact

In this subsection, we present the values of direct economic impact associated with total annual spending by international students, including spending by their visiting families and friends.

It should be noted that direct economic impact on GDP, employment, and other impact variables is not attributed exclusively to the educational services. In fact, total expenditures in each province and territory have been allocated to most industries,³¹ with the majority in universities and government education services; retail trade; transit and ground passenger transportation; finance, insurance, real estate and rental and leasing; food and beverage services; and arts, entertainment and recreation.

4.2.1.1. *Aggregate for All Students*

Table 3 below presents the results of direct economic impact associated with all students in Canada, by province and territory, in 2014.

²⁹ Total industrial output refers to the value of outputs produced, whether the products are used as an intermediate product (think of a log cut down from a tree for the purposes of building houses, for example) or used as a final product (think of a beam in a completed house). If we calculate gross domestic product the same way as we calculate the value of outputs, the cost of the log will be counted many times, as it moves from a raw product to its eventual use as a beam, and it is wrong. The value of total industrial output thus includes both the value of intermediate inputs and primary inputs - the latter being the labour and the capital in production. It is the sum of the latter, which is also referred to as the value added, that is equal to gross domestic product at the national or provincial level.

³⁰ Statistics Canada catalogue product 15F0046X – National and Provincial Multipliers.

³¹ The industries are defined according to the NAICS-based Input-Output Industry Classification (IOIC).

Table 3 Direct Economic Impact of All International Students, by Province and Territory, 2014 (\$millions)

	Annual Expenditure	Output	GDP	Labour Income	Employment ³²
Newfoundland and Labrador	\$48.2	\$42.7	\$26.2	\$15.6	382
Prince Edward Island	\$37.5	\$31.4	\$19.5	\$11.8	273
Nova Scotia	\$324.5	\$286.8	\$186.8	\$107.8	2,422
New Brunswick	\$115.7	\$110.4	\$68.7	\$37.8	892
Quebec	\$1,516.6	\$1,446.6	\$880.6	\$547.0	14,036
Ontario	\$5,408.1	\$4,898.1	\$3,261.7	\$1,878.3	39,211
Manitoba	\$220.8	\$204.4	\$128.9	\$74.1	1,717
Saskatchewan	\$151.0	\$135.2	\$82.4	\$48.6	1,061
Alberta	\$567.7	\$620.5	\$389.0	\$240.5	4,750
British Columbia	\$2,980.6	\$2,503.9	\$1,696.8	\$1,048.6	25,112
Yukon	\$0.5	\$1.1	\$0.6	\$0.4	10
Northwest Territories	\$0.6	\$1.5	\$0.7	\$0.4	7
Nunavut	\$0.1	\$0.6	\$0.3	\$0.2	4
Canada	\$11,371.9	\$10,283.3	\$6,742.4	\$4,011.0	89,877

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

Total GDP contribution of all student expenditures incurred amounted to over \$6.7 billion in 2014 in Canada. By comparison, the GDP contribution of the whole Educational Services sector in Canada was \$94.829 billion (estimated value in 2014).³³

³² It is noted in Statistics Canada's impact estimation model that two types of jobs impact and multipliers are available: one for the total number of jobs and another which transforms the former into a full-time-equivalent (FTE) number of jobs. The estimate of the total number of jobs covers two main categories: employee jobs and self-employed jobs (including persons working in a family business without pay). The total number of jobs includes full-time, part-time, and temporary jobs. It does not take into account the number of hours worked per employee. FTE jobs include both the employee and self-employed jobs but the FTE transformation only applies to employee jobs. The transformation is based on the overall average full-time hours worked in the business and government sectors.

The impact of labour income includes three components: wages and salaries, supplementary labour income, and labour income of the unincorporated sector. This variable captures the return to labour in the make-up of GDP.

³³ GDP at basic price, in current dollars, for the entire Education Services sector in Canada was valued at \$93.705 billion in 2012 (from Statistics Canada CANSIM table 379-0029). At the time this report is prepared, value in 2014 was not available. The value shown here has been estimated by applying the real

The overall educational services sector in Canada employed about 1,236,900 persons in 2014.

4.2.1.2. Long Term Students

In this and the next subsection, we present the economic impact values separately for long-term students and short-term students.

In Table 4 that follows, we provide the estimates of the total expenditure made by international students who stay in Canada for at least six months, and the corresponding contribution to the province / territory's output, GDP, employment, and labour income.

Table 4 Direct Economic Impact of International Students Studying for Longer than Six Months, by Province and Territory, 2014 (\$millions)

	Annual Expenditure	Output	GDP	Labour Income	Employment
Newfoundland and Labrador	\$48.2	\$41.9	\$25.8	\$15.3	375
Prince Edward Island	\$36.4	\$30.5	\$18.9	\$11.4	263
Nova Scotia	\$299.0	\$267.3	\$174.1	\$100.0	2,232
New Brunswick	\$114.7	\$107.7	\$67.2	\$36.8	870
Quebec	\$1,455.9	\$1,381.7	\$842.3	\$523.9	13,445
Ontario	\$4,996.9	\$4,550.8	\$3,038.2	\$1,746.4	36,292
Manitoba	\$214.5	\$196.8	\$124.5	\$71.4	1,652
Saskatchewan	\$136.0	\$123.5	\$75.2	\$44.0	955
Alberta	\$502.6	\$558.5	\$350.0	\$216.5	4,244
British Columbia	\$2,647.2	\$2,249.6	\$1,526.7	\$942.3	22,425
Yukon	\$0.5	\$1.0	\$0.6	\$0.3	9
Northwest Territories	\$0.6	\$1.4	\$0.7	\$0.4	6
Nunavut	\$0.0	\$0.5	\$0.3	\$0.1	3
Canada	\$10,452.6	\$9,511.1	\$6,244.6	\$3,708.8	82,773

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

The values show that total GDP contribution of student expenditure incurred by long-term students amounted to over \$6.2 billion in 2014 in Canada. In

(net of inflation) percentage increase of GDP in the Education Services between 2012 and 2014 to \$93.705 billion.

employment, international education services supported almost 82,800 (equivalent to 68,560 FTE) jobs in Canada.

4.2.1.3. Languages Canada Short Term Students

When we take into account the spending of short-term language students studying with Languages Canada's private member schools, these international students contributed an additional \$919.4 million in 2014 in total spending to the Canadian economy. This is equivalent to about \$497.7 million in GDP and supports 7,104 (equivalent to 5,901 FTE) jobs. This is represented in Table 5.

Table 5 Direct Economic Impact of Short-Term International Language Students, by Province and Territory, 2014 (\$millions)

	Annual Expenditure	Output	GDP	Labour Income	Employment
Newfoundland and Labrador	\$0.0	\$0.7	\$0.4	\$0.3	6
Prince Edward Island	\$1.1	\$1.0	\$0.6	\$0.3	9
Nova Scotia	\$25.5	\$19.5	\$12.7	\$7.8	190
New Brunswick	\$1.1	\$2.7	\$1.5	\$1.0	22
Quebec	\$60.7	\$64.9	\$38.2	\$23.1	592
Ontario	\$411.3	\$347.4	\$223.5	\$132.0	2,920
Manitoba	\$6.2	\$7.6	\$4.4	\$2.8	65
Saskatchewan	\$15.0	\$11.7	\$7.2	\$4.5	106
Alberta	\$65.2	\$62.0	\$38.9	\$24.0	506
British Columbia	\$333.4	\$254.3	\$170.0	\$106.3	2,686
Yukon	\$0.0	\$0.1	\$0.1	\$0.0	1
Northwest Territories	\$0.0	\$0.2	\$0.1	\$0.0	1
Nunavut	\$0.0	\$0.1	\$0.0	\$0.0	0
Canada	\$919.4	\$772.2	\$497.7	\$302.2	7,104

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

It is noted that even though annual student expenditure was zero for the Province of Newfoundland and Labrador and the three Territories as there were no students reported in 2014, there were impact values in output, GDP, labour income and employment because of interprovincial trade.

4.2.2. Direct and Indirect Economic Impact

This section presents both direct and indirect impacts of spending in 2014 by international students in Canada.

4.2.2.1. *Aggregate for All Students*

Table 6 below presents the results of direct and indirect economic impact associated with all international students and their spending in Canada, by province and territory, in 2014.

Table 6 Direct and Indirect Economic Impacts of All International Students, by Province and Territory, 2014 (\$millions)

	Output	GDP	Labour Income	Employment
Newfoundland and Labrador	\$71.1	\$43.5	\$22.3	511
Prince Edward Island	\$44.4	\$26.4	\$15.8	389
Nova Scotia	\$396.8	\$241.8	\$142.0	3,328
New Brunswick	\$180.1	\$97.9	\$55.5	1,130
Quebec	\$2,301.3	\$1,312.0	\$797.9	19,704
Ontario	\$7,075.2	\$4,410.8	\$2,625.8	54,286
Manitoba	\$324.9	\$190.9	\$110.6	2,575
Saskatchewan	\$250.3	\$136.5	\$71.3	1,624
Alberta	\$1,192.0	\$670.5	\$386.4	7,173
British Columbia	\$3,362.3	\$2,180.5	\$1,353.4	31,718
Yukon	\$2.3	\$1.3	\$0.8	18
Northwest Territories	\$6.1	\$3.2	\$1.1	17
Nunavut	\$1.4	\$0.9	\$0.4	6
Canada	\$15,208.3	\$9,315.6	\$5,583.4	122,680

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

Combined direct and indirect GDP contribution of all student expenditures incurred amounted to over \$9.3 billion in 2014 in Canada, when we take into account not only the sectors directly impacted due to international student spending, but also the many other industries in the “supply-chain” of those directly impacted. Employment impact became 122,680 jobs (equivalent to 104,050 FTE jobs).

4.2.2.2. Long Term Students

In Table 7 that follows, we provide the estimates of the total expenditure made by international students who stay in Canada for at least six months, and the corresponding direct and indirect impacts on the province / territory's output, GDP, employment, and labour income.

Table 7 Direct and Indirect Economic Impacts of International Students Studying for Longer than Six Months, by Province and Territory, 2014 (\$millions)

	Output	GDP	Labour Income	Employment
Newfoundland and Labrador	\$69.0	\$42.2	\$21.8	500
Prince Edward Island	\$42.9	\$25.5	\$15.3	375
Nova Scotia	\$370.0	\$225.5	\$132.0	3,079
New Brunswick	\$174.0	\$95.0	\$53.7	1,289
Quebec	\$2,188.2	\$1,250.0	\$761.0	18,806
Ontario	\$6,562.5	\$4,100.1	\$2,437.9	50,251
Manitoba	\$310.0	\$182.1	\$105.7	2,461
Saskatchewan	\$229.5	\$125.1	\$64.9	1,474
Alberta	\$1,078.7	\$606.0	\$349.1	6,448
British Columbia	\$3,021.2	\$1,961.3	\$1,216.4	28,371
Yukon	\$2.1	\$1.2	\$0.7	16
Northwest Territories	\$5.5	\$3.0	\$1.0	15
Nunavut	\$1.3	\$0.8	\$0.4	6
Canada	\$14,055.1	\$8,617.8	\$5,159.9	113,093

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

The values show that combined direct and indirect GDP contribution of student expenditure incurred by long-term students amounted to over \$8.6 billion in 2014 in Canada. In employment, international education services and the many in its supply chain supported 113,093 (equivalent to 95,900 FTE) jobs in Canada.

4.2.2.3. Languages Canada Short Term Students

When we take into account the spending of short-term language students studying with Languages Canada's private member schools, these international students contributed, directly and indirectly, an additional \$697.8 million in GDP and supported 8,134 jobs (or equivalent to 5,900 FTE jobs). This is represented in Table 8.

Table 8 Direct and Indirect Economic Impacts of Short-Term International Language Students, by Province and Territory, 2014 (\$millions)

	Output	GDP	Labour Income	Employment
Newfoundland and Labrador	\$2.1	\$1.3	\$0.6	10
Prince Edward Island	\$1.6	\$0.9	\$0.5	12
Nova Scotia	\$26.8	\$16.4	\$10.0	214
New Brunswick	\$6.0	\$2.9	\$1.8	37
Quebec	\$113.1	\$62.0	\$36.9	772
Ontario	\$512.8	\$310.8	\$187.9	3,439
Manitoba	\$14.9	\$8.0	\$4.9	100
Saskatchewan	\$20.7	\$11.5	\$6.4	131
Alberta	\$113.3	\$64.5	\$37.3	618
British Columbia	\$341.0	\$219.2	\$137.0	2,796
Yukon	\$0.2	\$0.1	\$0.1	2
Northwest Territories	\$0.6	\$0.3	\$0.1	1
Nunavut	\$0.1	\$0.1	\$0.0	1
Canada	\$1,153.2	\$697.8	\$423.5	8,134

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

4.2.3. Total Economic Impact (Direct, Indirect, and Induced)

In the previous sections we described direct as well as direct and indirect impacts. This section presents the total impact which includes direct, indirect, and induced impacts of expenditure by international students on the Canadian economy.

Induced impact measures the changes in the production of goods and services in response to consumer expenditures induced by households' incomes (i.e., wages) generated by the production of the direct and indirect requirements.

It is generally acknowledged that the total impact model where direct, indirect and induced impacts are combined, can be considered the upper bound of economic impacts because of the assumptions about labour incomes and consumer spending.

4.2.3.1. Aggregate for All Students

In Table 9, we have shown values of combined direct, indirect and induced impact international students bring to the provincial/territorial economy and the aggregate to Canada. The impact values apply to all international students. As expected, all indicators including GDP contribution and the jobs supported are significantly higher than those for the direct or combined direct and indirect impacts.

Table 9 Total Economic Impact (Direct, Indirect, and Induced) of All International Students, by Province and Territory, 2014 (\$millions)

	Output	GDP	Labour Income	Employment
Newfoundland and Labrador	\$92.0	\$57.0	\$27.3	628
Prince Edward Island	\$55.4	\$33.0	\$18.7	480
Nova Scotia	\$495.3	\$300.5	\$168.1	4,083
New Brunswick	\$232.8	\$124.7	\$68.2	1,685
Quebec	\$3,010.9	\$1,709.6	\$994.7	24,720
Ontario	\$9,172.1	\$5,624.2	\$3,224.6	67,703
Manitoba	\$425.5	\$248.5	\$137.8	3,302
Saskatchewan	\$328.9	\$178.8	\$87.7	2,057
Alberta	\$1,627.4	\$916.7	\$496.5	9,355
British Columbia	\$4,318.0	\$2,976.0	\$1,620.4	38,585
Yukon	\$3.6	\$2.1	\$1.2	28
Northwest Territories	\$9.3	\$5.1	\$1.7	27
Nunavut	\$2.3	\$1.4	\$0.7	10
Canada	\$19,773.5	\$11,997.6	\$6,847.6	152,664

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

4.2.3.2. Long Term Students

In Table 10, we have shown values of combined direct, indirect and induced impact international students bring to the provincial/territorial economy and the aggregate to Canada. The impact values apply to long-term international students.

Table 10 Total Economic Impact (Direct, Indirect, and Induced) of International Students Studying for Longer than Six Months, by Province and Territory, 2014 (\$millions)

	Output	GDP	Labour Income	Employment
Newfoundland and Labrador	\$89.0	\$55.0	\$26.6	612
Prince Edward Island	\$53.3	\$31.9	\$18.0	462
Nova Scotia	\$461.5	\$280.0	\$156.2	3,781
New Brunswick	\$224.1	\$120.6	\$65.8	1,627
Quebec	\$2,857.9	\$1,625.9	\$946.8	23,549
Ontario	\$8,507.3	\$5,225.6	\$2,993.3	62,699
Manitoba	\$404.6	\$237.2	\$131.3	3,145
Saskatchewan	\$301.6	\$163.8	\$80.0	1,871
Alberta	\$1,475.4	\$830.1	\$449.4	8,434
British Columbia	\$3,882.3	\$2,515.5	\$1,457.1	34,560
Yukon	\$3.3	\$1.9	\$1.0	25
Northwest Territories	\$8.5	\$4.7	\$1.6	24
Nunavut	\$2.1	\$1.3	\$0.6	9
Canada	\$18,271.0	\$11,093.4	\$6,327.5	140,798

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

4.2.3.3. Languages Canada Short Term Students

In Table 11, we have shown values of combined direct, indirect and induced impact international students bring to the provincial/territorial economy and the aggregate to Canada. The impact values apply to short-term international students (i.e. students represented by those studying in Languages Canada's private membership schools for up to six months in a given year).

Table 11 Total (Direct, Indirect and Induced) Economic Impact of Short-Term International Language Students, by Province and Territory, 2014 (\$millions)

	Output	GDP	Labour Income	Employment
Newfoundland and Labrador	\$3.1	\$1.9	\$0.8	16
Prince Edward Island	\$2.1	\$1.2	\$0.6	18
Nova Scotia	\$33.7	\$20.5	\$11.9	302
New Brunswick	\$8.6	\$4.1	\$2.4	58
Quebec	\$153.0	\$83.7	\$47.9	1,171
Ontario	\$664.8	\$398.6	\$231.3	5,004
Manitoba	\$20.9	\$11.3	\$6.5	157
Saskatchewan	\$27.3	\$15.0	\$7.8	186
Alberta	\$152.0	\$86.6	\$47.2	921
British Columbia	\$435.7	\$280.4	\$163.4	4,025
Yukon	\$0.3	\$0.2	\$0.1	3
Northwest Territories	\$0.8	\$0.4	\$0.1	2
Nunavut	\$0.2	\$0.1	\$0.1	1
Canada	\$1,502.5	\$904.2	\$520.0	11,865

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

4.2.4. Government Tax Revenue

In this sub-section, we further demonstrate the importance of international education with respect to its contribution to government revenue. Government revenue, as reported in Table 12 through Table 17, has also been derived by Statistics Canada's customized tabulation using the provincial and territorial input-output model by calculating the amount of indirect taxes incurred in the process of producing outputs and services by an industry. It is noted that tax revenue impacts are estimated for the combined direct and indirect impacts and total (direct, indirect, and induced impacts) scenarios only.

Indirect taxes incurred in the process of producing outputs and services include both indirect taxes on production (such as property taxes) as well as indirect taxes on products (such as federal and provincial sales taxes).³⁴

In addition to indirect taxes, another type of tax revenue generated is income taxes associated with labour income.³⁵ These are shown in Table 12 through Table 17 as well.

Direct and Indirect Tax Revenue Impact

Table 12 Tax Revenue Impact (Direct and Indirect) from Spending of All International Students, by Province and Territory, 2014 (\$millions)

	Indirect Taxes	Personal Income Taxes	Total Tax Revenue
Newfoundland and Labrador	\$5.1	\$3.7	\$8.8
Prince Edward Island	\$3.2	\$2.6	\$5.8
Nova Scotia	\$30.6	\$24.8	\$55.5
New Brunswick	\$12.9	\$9.2	\$22.1
Quebec	\$186.7	\$153.9	\$340.6
Ontario	\$569.0	\$465.9	\$1,034.9
Manitoba	\$24.6	\$18.7	\$43.3
Saskatchewan	\$13.9	\$11.3	\$25.2
Alberta	\$42.7	\$63.6	\$106.4
British Columbia	\$235.2	\$217.3	\$452.5
Yukon	\$0.1	\$0.1	\$0.2
Northwest Territories	\$0.1	\$0.2	\$0.3
Nunavut	\$0.0	\$0.1	\$0.1
Canada	\$1,124.2	\$971.3	\$2,095.6

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

³⁴ The types of taxes can be: federal trading profits on lottery and race track, federal gasoline tax, federal excise tax, federal excise duties, federal environment tax, federal air transportation tax, federal sales tax (GST/HST), provincial wine and liquor gallonage tax, provincial trading profits on liquor and lottery, provincial gasoline tax, provincial amusement tax, provincial environment tax, provincial sales tax, provincial harmonized sales tax (HST), local amusement tax, or local retail sales tax.

³⁵ Personal income tax values have been derived by applying average personal income tax rates in each province/territory to labour income. Average personal tax rates have been derived based on data available from Statistics Canada's CANSIM table 384-0040 - Current accounts - Households, provincial and territorial, annual.

Total tax revenue that has been contributed to all levels of government as a result of international student expenditure was almost \$2.1 billion in Canada in 2014, when direct and indirect impacts are combined.

Table 13 Tax Revenue Impact (Direct and Indirect) from Spending of International Students Studying for Longer than Six Months, by Province and Territory, 2014 (\$millions)

	Indirect Taxes	Personal Income Taxes	Total Tax Revenue
Newfoundland and Labrador	\$5.1	\$3.6	\$8.7
Prince Edward Island	\$3.0	\$2.5	\$5.5
Nova Scotia	\$27.7	\$23.1	\$50.8
New Brunswick	\$12.6	\$8.9	\$21.6
Quebec	\$177.3	\$146.8	\$324.1
Ontario	\$516.6	\$432.6	\$949.1
Manitoba	\$23.7	\$17.9	\$41.5
Saskatchewan	\$12.2	\$10.3	\$22.4
Alberta	\$36.6	\$57.5	\$94.1
British Columbia	\$200.5	\$195.3	\$395.7
Yukon	\$0.1	\$0.1	\$0.2
Northwest Territories	\$0.1	\$0.2	\$0.3
Nunavut	\$0.0	\$0.1	\$0.1
Canada	\$1,015.5	\$898.7	\$1,914.1

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

It is shown that total indirect tax and personal income revenue derived from long-term international students spending (due to direct and indirect economic activities) amounted to \$1.9 billion in 2014.

Table 14 Tax Revenue Impact (Direct and Indirect) from Spending of Short-Term International Language Students, by Province and Territory, 2014 (\$millions)

	Indirect Taxes	Personal Income Taxes	Total Tax Revenue
Newfoundland and Labrador	\$0.0	\$0.1	\$0.1
Prince Edward Island	\$0.1	\$0.1	\$0.2
Nova Scotia	\$2.9	\$1.8	\$4.7
New Brunswick	\$0.2	\$0.3	\$0.5
Quebec	\$9.4	\$7.1	\$16.5
Ontario	\$52.5	\$33.3	\$85.8
Manitoba	\$1.0	\$0.8	\$1.8
Saskatchewan	\$1.7	\$1.0	\$2.7
Alberta	\$6.1	\$6.1	\$12.3
British Columbia	\$34.7	\$22.0	\$56.7
Yukon	\$0.0	\$0.0	\$0.0
Northwest Territories	\$0.0	\$0.0	\$0.0
Nunavut	\$0.0	\$0.0	\$0.0
Canada	\$108.8	\$72.7	\$181.5

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

Hence, \$181.5 million tax revenue was generated, when direct and indirect economic impacts by short term international students were taken into account.

Total (Direct, Indirect, and Induced) Tax Revenue Impact**Table 15 Total Tax Revenue Impact (Direct, Indirect, and Induced) from Spending of All International Students, by Province and Territory, 2014 (\$millions)**

	Indirect Taxes	Personal Income Taxes	Total Tax Revenue
Newfoundland and Labrador	\$7.7	\$4.5	\$12.2
Prince Edward Island	\$4.9	\$3.1	\$8.0
Nova Scotia	\$47.2	\$29.4	\$76.5
New Brunswick	\$19.6	\$11.3	\$30.9
Quebec	\$286.7	\$191.8	\$478.5
Ontario	\$853.8	\$572.2	\$1,426.0
Manitoba	\$37.5	\$22.3	\$60.8
Saskatchewan	\$22.0	\$13.9	\$35.9
Alberta	\$75.7	\$81.8	\$157.5
British Columbia	\$367.5	\$260.2	\$627.7
Yukon	\$0.1	\$0.2	\$0.3
Northwest Territories	\$0.3	\$0.3	\$0.6
Nunavut	\$0.0	\$0.1	\$0.1
Canada	\$1,723.0	\$1,191.9	\$2,914.9

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

Total tax revenue that has been contributed to all levels of government as a result of international student expenditure was over \$2.9 billion in Canada in 2014.

Table 16 Total Tax Revenue Impact (Direct, Indirect, and Induced) from Spending of International Students Studying for Longer than Six Months, by Province and Territory, 2014 (\$millions)

	Indirect Taxes	Personal Income Taxes	Total Tax Revenue
Newfoundland and Labrador	\$7.6	\$4.3	\$11.9
Prince Edward Island	\$4.7	\$3.0	\$7.7
Nova Scotia	\$43.1	\$27.3	\$70.4
New Brunswick	\$19.1	\$10.9	\$30.0
Quebec	\$272.4	\$182.6	\$455.0
Ontario	\$780.9	\$531.1	\$1,312.0
Manitoba	\$35.9	\$22.2	\$58.1
Saskatchewan	\$19.6	\$12.7	\$32.2
Alberta	\$66.5	\$74.0	\$140.5
British Columbia	\$319.4	\$233.9	\$553.4
Yukon	\$0.1	\$0.1	\$0.3
Northwest Territories	\$0.3	\$0.3	\$0.5
Nunavut	\$0.0	\$0.1	\$0.1
Canada	\$1,569.4	\$1,102.5	\$2,671.9

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

It is shown that total indirect tax and personal income revenue derived from long-term international students spending (due to direct, indirect and induced economic activities) amounted to \$2.7 billion in 2014.

Table 17 Total Tax Revenue Impact (Direct, Indirect and Induced) from Spending of Short-Term International Language Students, by Province and Territory, 2014 (\$millions)

	Indirect Taxes	Personal Income Taxes	Total Tax Revenue
Newfoundland and Labrador	\$0.1	\$0.1	\$0.3
Prince Edward Island	\$0.2	\$0.1	\$0.3
Nova Scotia	\$4.1	\$2.1	\$6.2
New Brunswick	\$0.5	\$0.4	\$0.9
Quebec	\$14.3	\$9.2	\$23.5
Ontario	\$73.0	\$41.0	\$114.0
Manitoba	\$1.6	\$1.1	\$2.7
Saskatchewan	\$2.4	\$1.2	\$3.7
Alberta	\$9.2	\$7.8	\$17.0
British Columbia	\$48.1	\$26.2	\$74.3
Yukon	\$0.0	\$0.0	\$0.0
Northwest Territories	\$0.0	\$0.0	\$0.0
Nunavut	\$0.0	\$0.0	\$0.0
Canada	\$153.6	\$89.4	\$242.9

Source: Customized Statistics Canada Expenditure Model, based on expenditure produced by RKA

Similarly, \$242.9 million tax revenue generated from indirect taxes and personal income taxes by spending of short term international students from direct, indirect, and induced economic activities was contributed to municipal, provincial and territorial, and federal governments in 2014.

4.3. International Students and Canada's Export

Because international student expenditure represents revenue for goods and services from overseas, this representation of international education services is an export from Canada.

In this subsection, we compare the value of total expenditure in international education services in Canada with the total export of services and merchandise from Canada. We also provide a comparison of the total value of international student spending by top ten source countries, with the values of Canada's exports to these countries.

In 2014, total value of international student spending was almost \$11.4 billion. When compared with Canada's total export of services in 2014, at \$95.7 billion, international student expenditure is equivalent to 11% of the total value of Canada's service exports.

Table 18 Comparison of Annual Spending by International Students and Canada's Service and Merchandise Exports, 2014

Total Annual Spending – All International Students	\$11.372 billion	Students from Top Ten Source Countries	\$8.429 billion
Canada's Export in Services	\$95.744 billion	To Top Ten Source Countries	\$62.652 billion
International Student Spending as % of All Export in Services	11%	Students from Top Ten Source Countries	13%
Canada's Export in Merchandise	\$525.0 billion	To Top Ten Source Countries	\$453.424 billion
International Student Spending as % of All Export in Merchandise	2.2%	Students from Top Ten Source Countries	1.9%

Source: RKA; Statistics Canada Table 376-0036

Canada is known for its exports from resource sectors like oil, natural gas, logging and forestry. Few realize that the contribution of international student spending is also substantial. In 2014, total international student spending surpassed the value of Canada's export in helicopters, airplanes and spacecraft (\$9.012 billion), wheat (\$7.951 billion), or lumber (>6mm) (\$8.672 billion), and was almost as great as the value of Canada's export of motor vehicle parts (excluding body, chassis, and engines) (\$11.9 billion). In fact, total international student spending in 2014 was equivalent to about 2.2% of the total value of Canada's merchandise export. This is also shown in Table 18.

For the top 10 source countries, international education services exports represent 13% of the total service exports, and 1.9% of Canada's merchandise exports, to these countries.

5. Conclusions and Recommendations

In this report, Roslyn Kunin and Associates, Inc. (RKA) has used mainly secondary sources to collect information for estimating the quantitative impact of international students on the Canadian economy. The RKA team has worked extensively with international education stakeholders and organizations to collect data on different types of expenditure items and their dollar amounts, and calculated total expenditure by level of study and by province/territory.

In addition to capturing economic impact resulted from spending on tuition and fees and basic living expenses, we also capture additional tourism related activities associated with visiting family and friends. The analysis also accounts for the scholarships and bursaries provided by the Canadian governments (federal as well as provincial), universities, and other Canadian institutions.

- The economic benefit of international students studying in Canada is substantial. We estimate that in 2014, international students in Canada spent almost \$11.4 billion on tuition, accommodation, and discretionary spending. This results in \$9.3 billion contribution to Canada's GDP.

This figure of \$9.3 billion includes \$6.7 billion *direct* contribution to GDP associated with tuition, food, and accommodation, and \$2.6 billion *indirect* contribution to GDP when firms supplying goods and services to the education services and other sectors are also taken into account.

- The amount of overall annual spending by international students also generated almost \$2.1 billion tax revenues and supported 122,700 jobs (equivalent to 104,100 FTE) in the Canadian economy.
- Canada's international education services represent 11% of Canada's total service exports to the world, or 2.2% of Canada's total merchandise exports. The top 10 source countries accounted for \$8.4 billion international student spending, which translates to 13% of the total export of services, or 1.9% of the total merchandise exports to these countries from Canada.
- Ontario, with the largest number of students, shows the largest contribution to GDP at \$4.4 billion (47.3% of \$9.3 billion), followed by BC with 23.4%, and Quebec with 14.1%.
- Of the annual total spending by international students, long-term international students accounted for 92%. International education services for these long-term students contributed \$8.6 billion worth of GDP of the Canadian economy, and supported 113,100 (equivalent to 95,900 FTE) jobs in the labour market.
- International students in short-term language training programs in Canada contributed an additional \$919.4 million per year in total spending to the

Canadian economy. This represents about \$697.8 million contribution to GDP, and supporting 8,100 jobs (or equivalent to 5,900 FTE jobs).

- Using a total impact approach (including direct, indirect, and induced impacts) to account for the \$11.4 billion international students spending, we estimate a much higher contribution of around \$12 billion to Canada's GDP, and support for around 152,700 jobs.

Table 19 Economic Impacts of Annual Spending of All International Students, Canada, 2014

	Direct	Direct and Indirect	Direct, indirect & Induced
Output	\$10.283bn	\$15.208bn	\$19.773bn
GDP	\$6.742bn	\$9.316bn	\$11.998bn
Labour Income	\$4.011bn	\$5.583bn	\$6.848bn
Jobs - FTE	74,500	104,100	129,400
Jobs (incl. f/t, p/t, temporary)	89,900	122,700	152,700
Indirect Taxes - Federal	n/a	\$182.6m	\$333.3m
Indirect Taxes - Provincial	n/a	\$485.1m	\$787.1m
Indirect Taxes - Municipal	n/a	\$456.6m	\$602.5m
Indirect Taxes - Overall	n/a	\$1.124bn	\$1.723bn
Personal Income Taxes	n/a	\$971.3m	\$1.192bn

During the process of data collection and analysis, we faced many challenges, which are identified below:

- There is not one single, comprehensive source of data with regard to international students. As a result we rely on several secondary sources.
- On student spending amount and pattern, we need a better handle on tuition for specialized studies, part-time versus full-time students, public versus private school students, as well as expenditure associated with incremental tourism activities from families and friends.
- There is a great need for data on scholarships and bursaries provided by governments and/or universities in Canada to promote international student mobility.

Other aspects of international education services that have implications for the number of international students, and would benefit from further research and investigation include

- the impact of post graduate retention and employment policies,
- the impact of financial incentives (cost coverage, scholarships) in attracting the top talent, and
- the ability to work and immigrate for skilled workers.

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- Schools in Canada: www.schoolsincanada.com
- Australian Council for Private Education and Training: http://www.acpet.edu.au/index.php?option=com_content&task=view&id=183&Itemid=108

Canadian Association of Private Language School:

<http://www.vec.ca/english/1/capls.cfm>

Languages Canada: <http://www.languagescanada.ca/>

Edudata Canada: http://www.edudata.educ.ubc.ca/about_us/about_us_project.htm

Canadian Council on Learning: <http://www.ccl-cca.ca/CCL/Home?Language=EN>

Citizenship and Immigration Canada: www.cic.gc.ca

Department of Foreign Affairs and International Trade: www.dfait.gc.ca

Statistics Canada: www.statcan.gc.ca

Trade Data Online: http://www.ic.gc.ca/sc_mrkti/tdst/tdo/tdo.php#tag

Thompson Rivers University: <http://www.tru.ca/>

Association of Universities and Colleges of Canada:

http://www.aucc.ca/policy/research/index_e.html

Student Expenses

University of Toronto: http://www.utoronto.ca/about-uoft/measuring-our-performance/cudo/cudo_2008/annualexpenses.htm

University of Ontario Institute of Technology:

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Bishop's University: <http://www.ubishops.ca/int-exch/int/fees.html>

Fleming College: <http://www.flemingc.on.ca/index.cfm/go/international/sub/costs.cfm>

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Study in Ontario: http://www.studyinontario.com/en/st_tuition.php

Yukon College International: <http://www.yukoncollege.yk.ca/international/future-students/fees-costs.php>

Manitoba International Education – Tuition and Fees:

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UNESCO Institute for Statistics:

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Provincial Ministries

Manitoba International Education Branch: <http://www.gov.mb.ca/ie/index.html>

Study in Alberta: <http://www.studyinalberta.ca/>

Study in Ontario: <http://www.studyinontario.com/en/home.php>

Quebec Ministère de l'Éducation, du Loisir et du Sport: www.mels.gouv.qc.ca

Provincial Associations

BC Centre for International Education: <http://bccie.bc.ca/bccie/factsfigs.php>

EduNova: <http://edunova.ca/?lang=eng>

Appendix 1 Detailed Explanation of Data Sources and Adjustments

Student Number

As noted in Section 3, Data Sources and Methodology, a comprehensive data set representing “*internationally mobile students*” in Canada cannot be found in existing data sources. Therefore, we sought an alternate data set, the number of “*foreign students*” as a proxy to represent international students in Canada.

IRCC defines foreign students as “Temporary residents who entered Canada mainly to study and have been issued a study permit (with or without other types of permits). A study permit is an official document issued by an officer that allows someone who is not a Canadian citizen or a permanent resident to study in Canada. In general, a study permit is not needed for any program of study that is six months or less. For statistical purposes, a temporary resident is designated as a foreign student on the basis of IRCC’s determination of his or her “yearly status” – the main reason for which the person has been authorized to enter and stay temporarily in Canada during the year of observation. Foreign students exclude temporary residents who have been issued a study permit but who entered Canada mainly for reasons other than study.”

Five levels of study are shown for foreign students in IRCC’s dataset.

- a. Secondary or less: includes equivalent of High school/Secondary, elementary – grade, CEGEP.
- b. Post-Secondary: which is further divided into
 - College Education
 - University Education
 - Unspecified Post-Secondary - the level of study in this case was not mentioned
- c. Quebec Programs: – this includes PTC/TCST/DVS/AVS (Pre-work Training Certificates/Training Certificate for a Semi-skilled Trade/Diploma of Vocational Studies/Attestation of Vocational Specialization.
- d. Residents and Interns: -- unique to medical profession.
- e. Other Studies: these set of data could not be defined based on the available data. Other Studies, amongst other levels, could include the spouses and children of international students should they also hold a study permit themselves.

The IRCC data therefore allows us to use the number of study permit holders as a proxy for the number of international students at a given time in a year. It also allows for distinction between broad levels of study.

One limitation of using the IRCC data set to represent the number of international students is that the actual number of permit holders registering in a Canadian institution may be smaller than the number of permits issued, due to the fact that some permit holders may not be able to, or have chosen not to, enroll in an education program.

One of the adjustments we have made includes excluding a portion of student permit holders in the “secondary or less” category which is assumed to be children whose parents are enrolled in some post-secondary education program. The adjustment is based on industry information as reported in the 2015 ICG report for CAPS-I.

Then these students have been further allocated to studying in the public or independent K-12 system based on industry intelligence.

The allocation of student permit holders in the post-secondary system into finer categories of trade, college, under-graduate, master’s, PhD’s, and other type of programs is based on IRCC information.

Further allocation of registration status by full-time and part-time study for each type of students has been based on Statistics Canada’s CANSIM data series (Table 477-0019).

Finally, another important source of international students that is not covered in the IRCC data is the number of such students who study in Canada for periods shorter than six months, as they do not require a study permit to enter the country. In this regard, Languages Canada collects the data that is useful for our purposes.

Languages Canada administers an annual survey with its member schools to collect data on topics such as the source of students, immigration status, the length of study, average weekly spending incurred by students, and other variables. At the advice of Languages Canada, we have sought data related to international students studying in its private membership schools only, as the number of those studying in its public membership schools would have been represented in IRCC’s dataset.

We have made further adjustments to calculate average number of student-weeks for students studying for up to six months, in each province/territory. This is summarized as follows:

	Estimated number of students	Number of student weeks	Average number of weeks
Newfoundland and Labrador	0	0	0
Prince Edward Island	270	1,417	5.2
Nova Scotia	2,332	29,294	12.6
New Brunswick	101	1,157	11.4
Quebec	7,765	68,510	8.8
Ontario	46,223	462,314	10.0
Manitoba	591	7,227	12.2
Saskatchewan	1,504	20,398	13.6
Alberta	6,604	83,102	12.6
British Columbia	42,059	407,483	9.7
Yukon	0	0	0
Northwest Territories	0	0	0
Nunavut	0	0	0
Canada	107,451	1,080,903	10.1

Student Expenditure

Tuition and Fees

For tuition and other fees at the K-12 level, we will rely upon information published in the CAPS-I report. Note that these are based on tuition and fees in a school year (10 months). Tuition and fees in private schools can be substantially higher. In this regard we have also used information available from the CAPS-I report to calculate average annual tuition and fees for private school international students.

Detailed tuition and fees for full-time university level international students for each of the provinces are available from Statistics Canada's annual Tuition and Living Accommodation Costs (TLAC) survey. Note that no data is available from the TLAC for the Territories.

In deriving student tuition and fees in the four levels of study other than "secondary or less" (i.e., Post-Secondary which is further divided into trade/college, university, other post-secondary; Quebec programs; Residents and Interns; and other), we make the following assumptions:

- **University** – We have applied separate undergraduate and graduate tuition values from the TLAC to full-time undergraduate students and students in master's/PhD programs.

Part-time students are assumed to take a 50% course load for the purposes of calculation.

In addition to tuition, we have included "Additional Fees" which represent compulsory fees universities imposed on both domestic and international students, such as facility fees, society fees, health and dental (for international students only) fees, student pass fees in some cases, and

others. We also make an allowance of \$1,200 per academic year for books/tools/materials.

Tuition and fees are for an academic year (i.e., eight months).

- Trade/College, Quebec Programs and Other Post-Secondary - For full-time tuition, we apply a factor of 75% to the average university undergraduate tuition in each province. The factor of 75% is an approximation, and based on web research conducted for selected college programs in each province to see how they compare to full-time tuition of an undergraduate program.

For part time students, we have assumed a 50% course load.

We also assume that international students in “Trade”, “College”, “Quebec Programs” and “Other Post-Secondary” levels of study pay on average the same percentage (75%) of “Additional Fees” as university level international students. We also make the same allowance for books/equipment requirement (\$1,200) in a year.

For college international students in the Territories, tuition and fees information has been derived from colleges’ websites.

- Residents and Interns – since these are students in medical programs, we have applied the average of the tuition at undergrad and graduate level of medicine studies across all provinces.
- Other - since we don’t have any detailed information on the nature of their study, we assume that these students may pay no or little tuition and fees. However, students in this category will still incur living expenses.

For short-term international students, estimates of tuition and fees on a weekly basis have been derived from information provided by Languages Canada.

Living Expenses

- Secondary or Less - we have assumed that a student in the public school system pays an average home-stay cost of \$750 per month for a 10-month period. Essentially we are assuming that students return to their home countries for summer vacation. For those in the private independent school system, we have assumed that $\frac{3}{4}$ of these students pay an average home-stay cost of \$750 per month, and $\frac{1}{4}$ of these students are on full board with the school they attend.
- University – for full time students, we use Statistics Canada’s annual Tuition and Living Accommodation Costs (TLAC) survey data (to calculate the average costs of on-campus room and meal expenses for an eight months period for students in the undergraduate, master’s and PhD programs). Then, values have been scaled up to full year (12 months) values. That is, we assume that international students in the university category stay in the country for 12 months, even though they may only take two semesters of courses.

For part-time students, we have assumed a monthly home-stay cost of \$750, for 12 months in a year.

We also make allowances for transportation costs for students staying in different provinces and territories. We have applied data from Statistics Canada's Survey of Household Spending (SHS), detailing household spending on public transportation, by province and territory, in 2013. The values we use refer to the average expenditure per household using public transportation (households with or without using public transit). Values in 2013 dollars are adjusted for inflation between 2013 and 2014.

- For students in other levels of study (trade/college, other post-secondary, Quebec programs, residents and interns, and other), we have assumed that they spend the equivalent of what university students have to pay in an academic year (average room and meal and transportation costs).

Average costs of meals and accommodation for colleges in the Territories have been derived in the same way as in provinces. Estimate of transportation cost has been calculated as the average of provincial transportation cost.

In addition to basic living costs as presented above, we make an allowance of \$2,500 per student per year (\$1,500 for K-12 students) for discretionary expenses (such as eating out, recreational activities, and entertaining).

For each province and territory, in each level of study, the formula to calculate gross expenditure is as follows:

Estimated number of students in that level of study x sum of (average tuition and additional fees, books, average room and meals, average transportation cost, average discretionary spending) per year = Gross Expenditure in one year for International Students in the level of study

Scholarships and Awards

In this study, in order to calculate *net* economic benefits brought by international students in the host country, we take into account any financial assistance international students received from the Canadian federal or provincial governments, as well as from institutions.

We have conducted extensive web research of financial statements of universities and colleges across all provinces in order to find such information, but to little avail. We estimate that the support from universities/colleges themselves to international students is probably no more than 1% of the student tuition collected. We have also been informed that annually the federal government grants \$27 million to support international students. As such we have used a factor equivalent to 1% of international student tuition and fees plus \$27 million to represent the deduction. This factor is applied to students in the trade/college, undergraduate, master's, PhD, and the medical residents programs only.

Additional Tourism Benefits from Visiting Friends and Family Members

One additional benefit of international education to the host country is the increased tourism activities due to family and friends visiting the host country while students remain in the country.

Unfortunately, this area still remains to be a challenge with respect to data availability. We don't have a good handle on the number of family and friends visiting international students during their stay in Canada. For the purposes of this estimation, we have applied a similar methodology to the one used in an Australian study to derive the estimated number of family and friends of international students who participate in tourism activities.

The methodology in Australian Council for Private Education and Training (ACPET) 2013 study was based on research work conducted by Tourism Research Australia. The study shows that for every 10 formal visiting student (defined as those whose main purpose of visiting Australia is education), there are an additional five family and friend visitors to the country. For those informal visiting students (defined as those whose main purpose of visiting Australia was not education but still studied a course while on the trip), every 10 bring an additional 2 visitors.

We have assumed, in our current study, that for every 10 long-term international students, there would have been five family and/or friends visiting Canada during the year, and that for every 10 short-term international students, there would have been two family and/or friends visiting Canada during the year.

Appendix 2 Scenario Analysis: Assuming Lower Student Expenditure

In this appendix 2, we provide an assessment of how total expenditure will change for a different scenario in which we assume that international students studying in Canada receive Canadian government and/or university financial support equivalent to the extent of such support offered to international students studying in the U.S. Further we have assumed that additional family and friends tourism activities of international students studying in Canada follow a similar pattern as that of non-U.K. students pursuing university education in the U.K.³⁶

The assumptions underlying alternate government/university support to international students are as follows:

- 10% of student expenditure of undergraduate students has been assumed to come from support by Canadian governments and/or universities;
- 40% of student expenditure of students in Master's and PhD's programs, as well as those in medical residency and internship, has been assumed to come from support by Canadian governments and/or universities;
- 30% of student expenditure for students in trade, college and Quebec programs has been assumed to come from support by Canadian governments and/or colleges and institutes;
- For every 10 international students, there would have been one family and/or friend visiting them while they study in Canada in 2014.

The scenario can be interpreted as the minimal values of impacts in the current study.

Under these conditions, total annual student expenditure would become \$9.826 billion, a decrease of **14%**. Direct impacts, direct and indirect impacts combined, and total economic impacts (direct, indirect and induced) are summarized in the table below.

³⁶ From Universities U.K.'s study in 2014: *The Impact of Universities on the UK economy*.

Table 20 Scenario I: Direct, Direct and Indirect Combined, and Total (Direct, Indirect and Induced) Economic Impacts of International Students Assuming 14% Lower Expenditure (due to Higher Values of Government Support and Fewer Family/Friend Visits), Canada, 2014

	Direct Impact	Direct and Indirect Impacts	Direct, Indirect & Induced Impacts
Annual Student Expenditure	\$9.826bn		
Output	\$8.895bn	\$13.125bn	\$17.083bn
GDP	\$5.848bn	\$8.061bn	\$10.388bn
Labour Income	\$3.485bn	\$4.837bn	\$5.933bn
Jobs - FTE	64,500	90,000	111,900
Jobs (incl. f/t, p/t, temporary)	77,800	106,000	132,000
Indirect Taxes - Federal		\$155.9m	\$286.6m
Indirect Taxes - Provincial		\$412.8m	\$674.5m
Indirect Taxes - Municipal		\$391.8m	\$518.0m
Indirect Taxes - Overall		\$960.5m	\$1.479bn
Personal Income Taxes		\$840.8m	\$1.032bn

Appendix 3 Scenario Analysis: Assuming Higher Student Expenditure

In this appendix, we provide an alternate assessment of how total expenditure will change for a different scenario in which we assume that international students studying in Canada spend on average 10% more than what we have described in the base run in the main part of the report.

Under these conditions, total annual student expenditure would become \$12.509 billion, an increase of 10%. Direct, combined direct and indirect, as well as total economic impacts (direct, indirect and induced) are summarized in the table below.

Table 21 Scenario II: Direct, Direct and Indirect Combined, and Total (Direct, Indirect and Induced) Economic Impacts of International Students Assuming 10% Higher Annual Student Expenditure, Canada, 2014

	Direct Impacts	Direct and Indirect Impacts	Direct, Indirect & Induced Impacts
Annual Student Expenditure	\$12.509bn		
Output	\$11.312bn	\$16.729bn	\$21.751bn
GDP	\$7.417bn	\$10.247bn	\$13.197bn
Labour Income	\$4.412bn	\$6.142bn	\$7.532bn
Jobs - FTE	81,900	114,500	142,320
Jobs (incl. f/t, p/t, temporary)	98,865	134,950	167,930
Indirect Taxes - Federal		\$200.8m	\$366.7m
Indirect Taxes - Provincial		\$533.6m	\$865.8m
Indirect Taxes - Municipal		\$502.2m	\$662.8m
Indirect Taxes - Overall		\$1.237bn	\$1.895bn
Personal Income Taxes		\$1.068bn	\$1.311bn

Appendix 4 Data Tables

Table 22 Estimated Number of Long-Term International Students by Level of Study, by Province/Territory, 2014

	Secondary and less	Trade	College	University - Bachelor's Deg.	University - Master's Deg.	University - Doctorate	Other University	Other Post Secondary	Quebec programs	Residents and interns (Medical)	Other studies	All Levels of Studies
Newfoundland and Labrador	121	0	28	880	750	217	225	12	0	0	29	2,261
Prince Edward Island	160	14	28	523	71	19	108	52	0	1	110	1,086
Nova Scotia	866	25	81	5,394	1,650	212	833	182	0	8	310	9,560
New Brunswick	291	21	189	2,229	535	119	239	366	1	2	62	4,053
Quebec	2,535	387	1,379	17,926	10,509	3,442	5,311	4,117	407	26	1,545	47,604
Ontario	19,276	1,063	37,279	27,214	14,660	3,246	9,468	22,132	32	123	6,825	141,366
Manitoba	704	75	867	2,766	748	292	1,075	1,129	2	4	127	7,794
Saskatchewan	758	17	301	1,510	1,204	384	474	173	1	6	76	4,904
Alberta	2,940	192	1,569	2,915	2,766	1,335	2,559	1,569	2	10	759	16,623
British Columbia	18,901	1,099	11,392	28,541	9,949	2,150	8,279	10,145	21	43	4,820	95,387
Yukon	5	0	9	0	0	0	0	13	0	0	2	29
Northwest Territories	8	0	26	0	0	0	0	0	0	0	1	35
Nunavut	1	0	2	0	0	0	0	0	0	0	1	4
Canada	46,566	2,892	53,150	89,898	42,841	11,417	28,570	39,889	466	223	14,667	330,706

Source: IRCC with adjustments by RKA

Table 23 Number of Short-Term International Students and Student Weeks, by Province/Territory, 2014

	Number of Students	Number of Student Weeks
Newfoundland and Labrador	0	0
Prince Edward Island	270	1,417
Nova Scotia	2,332	29,294
New Brunswick	101	1,157
Quebec	7,765	68,510
Ontario	46,223	462,314
Manitoba	591	7,227
Saskatchewan	1,504	20,398
Alberta	6,604	83,102
British Columbia	42,059	407,483
Yukon	0	0
Northwest Territories	0	0
Nunavut	0	0
Canada	107,451	1,080,903

Source: Languages Canada with adjustments by RKA

Table 24 Number of Long-Term International Students in Canada, by Top Ten Source Countries, 2014

	Number of Students	Percentage of Total
China, People's Republic of	110,918	33%
India	38,891	12%
Korea, Republic of	19,358	6%
France	19,035	6%
Saudi Arabia	13,677	4%
United States of America	12,450	4%
Brazil	8,920	3%
Nigeria	8,620	3%
Japan	6,900	2%
Mexico	5,138	2%
Total of Top Ten Countries	243,907	72%
Canada	336,497	100%

Source: IRCC

Table 25 Number of Short-Term International Students in Canada, by Top Ten Source Countries, 2014

	Number of Students	Percentage of Total
Brazil	20,128	19%
Japan	20,081	19%
China	17,675	16%
Korea	15,568	14%
Saudi Arabia	10,496	10%
Mexico	7,623	7%
Taiwan	2,376	2%
Venezuela	2,154	2%
Switzerland	1,931	2%
Spain	1,576	1%
Total of Top Ten Countries	99,608	93%
Canada	107,451	100%

Source: Languages Canada

Table 26 Comparison of Weighted Average Undergraduate Tuition Fees for Canadian and International Full-Time Students, 2014/15

	Canadian Students	International Students
Newfoundland and Labrador	\$2,660	\$8,942
Prince Edward Island	\$5,849	\$21,628
Nova Scotia	\$6,483	\$14,136
New Brunswick	\$6,298	\$13,212
Quebec	\$2,740	\$18,348
Ontario	\$7,562	\$25,392
Manitoba	\$3,857	\$12,995
Saskatchewan	\$6,693	\$17,371
Alberta	\$5,738	\$19,826
British Columbia	\$5,201	\$18,950
Yukon		
Northwest Territories		
Nunavut		
Canada	\$5,998	\$20,593

Source: Statistics Canada. Table 477-0077

Table 27 Comparison of Weighted Average Graduate Tuition Fees for Canadian and International Full-Time Students, 2014/15

	Canadian Students	International Students
Newfoundland and Labrador	\$2,474	\$2,822
Prince Edward Island	\$4,845	\$11,041
Nova Scotia	\$8,182	\$16,482
New Brunswick	\$5,759	\$10,368
Quebec	\$2,820	\$14,051
Ontario	\$8,759	\$18,816
Manitoba	\$4,468	\$8,877
Saskatchewan	\$3,758	\$5,212
Alberta	\$5,715	\$9,748
British Columbia	\$7,648	\$11,869
Yukon		
Northwest Territories		
Nunavut		
Canada	\$6,295	\$13,909

Source: Statistics Canada. Table 477-0077

Table 28 Estimated Long-Term International Student Expenditure by Type of Expenditure, in K-12 System, by Province/Territory, 2014

	Tuition and fees	Accommodation and food	Transportati on	Discretionary
Newfoundland and Labrador	\$1,691,580	\$1,014,646	\$0	\$60,500
Prince Edward Island	\$2,236,800	\$1,341,680	\$0	\$80,000
Nova Scotia	\$12,106,680	\$7,261,843	\$0	\$433,000
New Brunswick	\$4,068,180	\$2,440,181	\$0	\$145,500
Quebec	\$35,439,300	\$21,257,243	\$0	\$1,267,500
Ontario	\$269,478,480	\$161,638,898	\$0	\$9,638,000
Manitoba	\$9,841,920	\$5,903,392	\$0	\$352,000
Saskatchewan	\$10,596,840	\$6,356,209	\$0	\$379,000
Alberta	\$41,101,200	\$24,653,370	\$0	\$1,470,000
British Columbia	\$264,235,980	\$158,494,336	\$0	\$9,450,500
Yukon	\$60,000	\$37,500	\$0	\$2,500
Northwest Territories	\$96,000	\$60,000	\$0	\$4,000
Nunavut	\$12,000	\$7,500	\$0	\$500
Canada	\$650,964,960	\$390,466,796	\$0	\$23,283,000

Source: various data sources detailed in Appendix 1 with adjustments by RKA

Table 29 Estimated Long-Term International Student Expenditure by Type of Expenditure, in Trades/College/Quebec Programs, by Province/Territory, 2014

	Tuition and fees and books/material	Accommodation and food	Transportatio n	Discretionary
Newfoundland and Labrador	\$212,946	\$304,561	\$13,562	\$66,585
Prince Edward Island	\$728,134	\$592,724	\$21,751	\$102,785
Nova Scotia	\$1,186,704	\$1,463,145	\$48,636	\$242,660
New Brunswick	\$2,327,916	\$3,002,038	\$53,525	\$512,027
Quebec	\$31,653,164	\$23,419,240	\$1,016,884	\$5,142,155
Ontario	\$704,502,799	\$519,360,872	\$34,344,539	\$85,114,762
Manitoba	\$9,978,729	\$11,427,238	\$773,713	\$2,202,308
Saskatchewan	\$4,132,362	\$3,920,147	\$147,195	\$718,496
Alberta	\$28,038,421	\$21,036,082	\$1,775,079	\$4,196,917
British Columbia	\$177,816,276	\$150,353,800	\$9,909,016	\$28,242,276
Yukon	\$43,507	\$79,200	\$5,421	\$11,000
Northwest Territories	\$123,381	\$234,000	\$16,016	\$32,500
Nunavut	\$8,601	\$18,000	\$1,232	\$2,500
Canada	\$960,752,940	\$735,211,046	\$48,126,569	\$126,586,971

Source: various data sources detailed in Appendix 1 with adjustments by RKA

Table 30 Estimated Long-Term International Student Expenditure by Type of Expenditure, in University/Other University/Medical Residency & Internship Programs, by Province/Territory, 2014

	Tuition and fees and books/material	Accommodation and food	Transportation	Discretionary
Newfoundland and Labrador	\$14,485,839	\$22,769,791	\$1,017,127	\$4,952,493
Prince Edward Island	\$15,174,578	\$10,073,587	\$370,273	\$1,745,831
Nova Scotia	\$124,621,720	\$114,364,341	\$3,716,243	\$19,096,657
New Brunswick	\$39,711,063	\$42,150,133	\$793,311	\$7,055,759
Quebec	\$654,521,828	\$415,734,007	\$17,416,251	\$88,902,290
Ontario	\$1,286,055,865	\$779,458,933	\$48,966,952	\$129,649,490
Manitoba	\$63,888,056	\$59,808,286	\$4,001,393	\$11,630,810
Saskatchewan	\$45,425,247	\$45,809,109	\$1,652,880	\$8,603,877
Alberta	\$164,072,117	\$115,570,387	\$9,652,116	\$23,269,657
British Columbia	\$759,867,763	\$564,349,103	\$38,777,646	\$102,458,191
Yukon	\$0	\$0	\$0	\$0
Northwest Territories	\$0	\$0	\$0	\$0
Nunavut	\$0	\$0	\$0	\$0
Canada	\$3,167,824,076	\$2,170,087,677	\$126,364,193	\$397,365,055

Source: various data sources detailed in Appendix 1 with adjustments by RKA

Table 31 Estimated Long-Term International Student Expenditure by Type of Expenditure, in Other Post-Secondary Programs, by Province/Territory, 2014

	Tuition and fees and books/material	Accommodation and food	Transportatio n	Discretionary
Newfoundland and Labrador	\$91,088	\$129,934	\$5,812	\$28,197
Prince Edward Island	\$889,693	\$718,966	\$26,584	\$124,335
Nova Scotia	\$2,097,365	\$2,547,991	\$83,377	\$424,585
New Brunswick	\$3,770,754	\$4,913,771	\$92,964	\$821,086
Quebec	\$61,124,152	\$45,983,275	\$1,926,737	\$9,830,511
Ontario	\$417,790,802	\$303,707,832	\$19,807,724	\$49,970,792
Manitoba	\$12,111,385	\$13,699,666	\$924,315	\$2,646,256
Saskatchewan	\$2,316,730	\$2,156,958	\$79,802	\$398,783
Alberta	\$25,364,659	\$18,788,725	\$1,580,224	\$3,758,730
British Columbia	\$128,544,779	\$113,884,575	\$8,034,793	\$20,212,397
Yukon	\$62,289	\$118,800	\$8,131	\$16,500
Northwest Territories	\$0	\$0	\$0	\$0
Nunavut	\$0	\$0	\$0	\$0
Canada	\$654,163,696	\$506,650,491	\$32,570,464	\$88,232,172

Source: various data sources detailed in Appendix 1 with adjustments by RKA

Table 32 Estimated Long-Term International Student Expenditure by Type of Expenditure, in Other Studies, by Province/Territory, 2014³⁷

	Tuition and fees and books/material	Accommodation and food	Transportatio n	Discretionary
Newfoundland and Labrador		\$324,293	\$14,239	\$36,250
Prince Edward Island		\$1,573,110	\$56,430	\$137,500
Nova Scotia		\$4,581,413	\$142,290	\$387,500
New Brunswick		\$903,263	\$15,748	\$77,500
Quebec		\$17,586,928	\$723,060	\$1,931,250
Ontario		\$101,401,041	\$6,108,375	\$8,531,250
Manitoba		\$1,598,152	\$104,013	\$158,750
Saskatchewan		\$996,930	\$35,112	\$95,000
Alberta		\$9,294,002	\$764,313	\$948,750
British Columbia		\$61,444,155	\$3,817,440	\$6,025,000
Yukon		\$18,000	\$1,232	\$2,500
Northwest Territories		\$9,000	\$616	\$1,250
Nunavut		\$9,000	\$616	\$1,250
Canada		\$199,739,287	\$11,783,484	\$18,333,750

Source: various data sources detailed in Appendix 1 with adjustments by RKA

³⁷ For those permit holders in “Other Studies”, the IRCC states that “... data could not be defined based on the available data. Other Studies, amongst other levels, could include the spouses and children of international students should they also hold a study permit themselves”.

Table 33 Estimated Long-Term International Student Expenditure by Type of Expenditure, All Levels of Study, by Province/Territory, 2014

	Tuition and fees and books/material	Accommodation and food	Transportation	Discretionary	Total Annual Exp
Newfoundland and Labrador	\$16,481,453	\$24,543,224	\$1,050,740	\$5,144,026	\$47,219,442
Prince Edward Island	\$19,029,205	\$14,300,067	\$475,038	\$2,190,452	\$35,994,761
Nova Scotia	\$140,012,469	\$130,218,731	\$3,990,546	\$20,584,401	\$294,806,148
New Brunswick	\$49,877,914	\$53,409,384	\$955,548	\$8,611,872	\$112,854,718
Quebec	\$782,738,445	\$523,980,692	\$21,082,932	\$107,073,706	\$1,434,875,775
Ontario	\$2,677,827,946	\$1,865,567,577	\$109,227,590	\$282,904,294	\$4,935,527,406
Manitoba	\$95,820,091	\$92,436,734	\$5,803,434	\$16,990,125	\$211,050,384
Saskatchewan	\$62,471,179	\$59,239,352	\$1,914,990	\$10,195,156	\$133,820,677
Alberta	\$258,576,397	\$189,342,566	\$13,771,732	\$33,644,054	\$495,334,749
British Columbia	\$1,330,464,799	\$1,048,525,969	\$60,538,896	\$166,388,363	\$2,605,918,027
Yukon	\$165,796	\$253,500	\$14,784	\$32,500	\$466,580
Northwest Territories	\$219,381	\$303,000	\$16,632	\$37,750	\$576,763
Nunavut	\$20,601	\$34,500	\$1,848	\$4,250	\$61,199
Canada	\$5,433,705,673	\$4,002,155,297	\$218,844,710	\$653,800,948	\$10,308,506,627

Source: various data sources detailed in Appendix 1 with adjustments by RKA

Table 34 Estimated Additional Tourism Activities of Visiting Families and Friends associated with Long-Term International Students, by Province/Territory, 2014

	Total spending
Newfoundland and Labrador	\$1,017,992
Prince Edward Island	\$445,143
Nova Scotia	\$4,218,829
New Brunswick	\$1,820,254
Quebec	\$20,997,910
Ontario	\$61,340,861
Manitoba	\$3,495,015
Saskatchewan	\$2,201,545
Alberta	\$7,232,213
British Columbia	\$41,284,776
Yukon	\$12,314
Northwest Territories	\$15,507
Nunavut	\$1,368
Canada	\$144,083,727

Source: RKA based on ACPET study

Table 35 Estimated Short-Term International Student Expenditure by Type of Expenditure, by Province/Territory, 2014

	Tuition and fees and books/material	Homestay	Transportation	Utilities	Discretionary	Total Annual Expenditure
Newfoundland and Labrador	\$0	\$0	\$0	\$0	\$0	\$0
Prince Edward Island	\$354,250	\$265,688	\$56,680	\$70,850	\$283,400	\$1,030,868
Nova Scotia	\$10,302,838	\$6,244,100	\$1,171,776	\$1,464,720	\$5,858,879	\$25,042,312
New Brunswick	\$470,282	\$231,842	\$46,293	\$57,867	\$231,466	\$1,037,750
Quebec	\$22,645,313	\$16,771,261	\$2,740,402	\$3,425,503	\$13,702,011	\$59,284,490
Ontario	\$159,165,432	\$109,596,135	\$18,492,556	\$23,115,695	\$92,462,781	\$402,832,600
Manitoba	\$2,536,388	\$1,498,650	\$289,064	\$361,329	\$1,445,318	\$6,130,749
Saskatchewan	\$5,303,367	\$3,477,785	\$815,903	\$1,019,878	\$4,079,513	\$14,696,447
Alberta	\$23,455,661	\$16,412,730	\$3,324,097	\$4,155,121	\$16,620,486	\$63,968,095
British Columbia	\$120,582,445	\$86,973,226	\$16,299,330	\$20,374,163	\$81,496,651	\$325,725,816
Yukon	\$0	\$0	\$0	\$0	\$0	\$0
Northwest Territories	\$0	\$0	\$0	\$0	\$0	\$0
Nunavut	\$0	\$0	\$0	\$0	\$0	\$0
Canada	\$344,815,976	\$241,471,417	\$43,236,101	\$54,045,126	\$216,180,505	\$899,749,125

Source: Languages Canada with adjustments by RKA

Table 36 Estimated Additional Tourism Activities of Visiting Families and Friends associated with Short-Term International Students, by Province/Territory, 2014

	Total spending
Newfoundland and Labrador	\$0
Prince Edward Island	\$49,258
Nova Scotia	\$425,523
New Brunswick	\$18,502
Quebec	\$1,416,705
Ontario	\$8,432,741
Manitoba	\$107,860
Saskatchewan	\$274,384
Alberta	\$1,204,878
British Columbia	\$7,673,051
Yukon	\$0
Northwest Territories	\$0
Nunavut	\$0
Canada	\$19,602,902

Source: RKA based on ACPET study

Appendix 5 Reconciliation of the Study Estimates with Valuation by Statistics Canada

Statistics Canada reported that Canada's international student services was valued at \$4.971 billion in 2014.³⁸ In our study, we have estimated that the total annual spending by international students and their visiting families and friends was valued at almost \$11.4 billion in the same year. In this appendix, we will reconcile our estimates with Statistics Canada's valuation.

We have been advised that Statistics Canada's valuation of international students in 2014 was based on the number of international students in post-secondary system of 195,000³⁹ and their expenditure on tuition, food, accommodation, and transportation for an academic year of eight months.⁴⁰

In RKA's calculation, for estimating the number of post-secondary students in Canada in 2014, we have relied upon values from Immigration, Refugees and Citizenship Canada's estimate of the "stock" of foreign students as of December 31st of the year. Total number of students from this source indicates that there were 229,456 students who held a valid student permit pursuing post-secondary training in Canada. We have derived per-student expenditure (net of Canadian scholarships and bursaries) as follows:

- Those in college, trades, and Quebec programs: \$33,105 per year in 2014, assuming 8 months of study and 12 months of living expenses.
- Those in university, other university, and in medical residency and internship programs: \$33,892 per year in 2014, assuming 8 months of study and 12 months of living expenses.

Therefore, total expenditure was valued at \$7.7 billion.

In addition to post-secondary students, we have included students in the K-12 system (with expenditure on tuition and homestay for 10 months), and other students whose level of study was not clear, but who were included in IRCC data. Total expenditure for these "long-term" students (meaning that they are required by IRCC to hold a valid student permit while they stay in Canada for pursuing study longer than six months in a calendar year) was \$10.3 billion.

The last segment of international student population refers to "short-term" students who do not require a student permit to pursuing training generally shorter than six months long. These students would include those pursuing language training, or other short term vocational training. For practical reasons, we have only obtained data from Languages Canada and therefore have valued

³⁸ Statistics Canada CANSIM table 376-0031.

³⁹ International students in Canada from Statistics Canada CANSIM table 477-0019.

⁴⁰ Statistics Canada plans to review the students' expenditure data along with the other variables for the travel and education sectors, taking into account the available studies, surveys, and methodologies.

expenditure from this source. For these 107,451 students who studied for up to 26 weeks in 2014, total number of student weeks was estimated at 1,080,903, and total expenditure at \$899.7 million.

In addition to student expenditure related to tuition and fees as well as living expenses, we have estimated spending by visiting families and friends for these international students. The value of spending attributed to visiting families and friends was estimated at \$163.7 million.

Combining spending from long-term and short-term students, as well as their visiting families and friends, yields a total expenditure value of \$11.372 billion in our estimate.